Shortform Catalog

January 2004

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Corporate Profile

Micrel Semiconductor is a leading manufacturer of advanced, high performance communications, clock management, mixed signal, analog and power ICs. These products include devices for fiber-optic telecommunications and networking, cellular telephones, servers, portable computer systems, computer peripherals, process control systems, consumer electronics and power supplies.

Founded in 1978, Micrel has a portfolio of world class wafer fabrication processes that provide the ability to produce new products faster than our competition. We use singularly or in combination CMOS, Bipolar and DMOS technologies in our analog products. With the acquisition of Synergy Semiconductor in 1998, we now have high-speed bipolar capability in the form of our ASSET™ (All Spacer Separated Element Transistor) process. This proprietary, patented bipolar technology employs a narrow deep-trench isolation technique allowing for electrical isolation between adjacent circuit elements. This means we can put multiple analog and digital functions on the same IC without the various functions causing interference found in alternate techniques.

Ethernet Products

Micrel is a leader in Ethernet technology for the SOHO networking technology markets (small office/home office environments). In addition, our Ethernet products are consistently used in Wireless, VoIP, Industrial Ethernet, and other such applications. Offered are numerous field-proven, multi-port products in a variety of packages, as well as unmanaged and managed switches for everything from embedded Ethernet and cyber-apartmnet applications to products that connect wired and wireless copper and fiber systems. Micrel's portfolio of Ethernet products operate over commercial and industrial temperature ranges, and are available in a series of environmentally friendly, lead-free products.

Communication Products

Micrel's Communication products include PMD (Physical Media Devices) ICs such as multi-rate (up to 3.2Gbps) LASER drivers, post amplifiers and optical module management controllers for all types of fiber optical module applications. It also includes physical layer ICs such as 155Mbps and multi-rate (up to 2.7Gbps) CDRs (Clock and Data Recovery), and MUX/DeMUX ICs for Access and Telecommunications applications. This growing family of devices leads the industry in design innovations, high flexibility and often exceeds industry's standard requirements.

Precision Edge™ Products

Micrel's Precision Edge™ product family includes precision frequency synthesizers, clock distribution and translation, multiplexers, crosspoint switches, and high-speed gates for the most stringent, timing-critical applications. All of Micrel's Precision Edge™ products are designed to provide the lowest skew and jitter solutions available.

Low-Dropout Voltage Regulators

Micrel has gained a reputation as a leading vendor of LDO regulators and is a major supplier to the mobile phone and computing industries. Micrel has a very broad portfolio of LDO regulators ranging from 80mA devices in Teeny® SC-70-5 packages to 7.5A power devices and LDO controllers for even higher current applications.

Radio Frequency Products

Micrel's RF offering consists of two product groups: QwikRadio® receivers and transmitters for actuation devices such as remote controls and remote keyless entry; and RadioWire® transceivers for connectivity applications such as wire replacement in industrial contol and security systems.

Universal Serial Bus and PCMCIA

The recognized leader in providing USB and PC Card power distribution solutions, Micrel's extensive portfolio of products are already in use by many of the leading PC and peripheral OEMs.

Hot Swap Controllers

Micrel's hot swap power controllers support the requirement for high availability (24/7/365) operation in servers, telecom and datacom equipment, and enterprise storage networks. These products allow customers to upgrade or replace system boards without having to power down the entire system. Offering products for primary- and secondary-side applications. Micrel's family of hot swap power controllers offers our customers a wide range of product choices uniquely suited for the application. This product portfolio includes the award-winning[1] MIC2590B, the industry's most integrated dual-slot hot swap power controller for PCI and CompactPCI applications. Leveraging Micrel's expertise in power control and distribution, the MIC2590B was designed to support Intel's Itanium® 64-bit server platforms. To address the next generation, dual-slot power controllers are in development. For primary-side applications, the Company will continue to add innovative products like the MIC2596 and MIC2597 to the high-voltage hot swap product portfolio, addressing the +48V and –48 power control applications for the telecommunications, data communications, and data storage equipment markets.

1. Named analogZONE's "2002 Hot Swap Product of the Year."

MOSFET Drivers

Micrel offers a broad range of MOSFET drivers, ranging from IttyBitty® devices in SOT-23 packages to 12A high-power devices.

Switch-Mode Power Supply Products

Micrel has a rapidly expanding portfolio of switching regulator products servicing computer, telecommunications and industrial accounts. All products combine Micrel's advanced processes with strong design talent to produce best-in-class products.

Micrel addresses step-up, step-down and multi-output systems, all offering speed and efficiency advantages.

System/Thermal Management Products

Thermal management is an increasingly critical function in today's portable and high performance systems. Micrel's proprietary technology enables more functionality in smaller packages and superior real-world accuracy in temperature measurement via embedded thermal diodes. Thermal diodes are increasingly used to monitor the die temperature of high-performance integrated circuits such as Intel® and AMD® microprocessors, Xilinx VIRTEX™ FPGAs, and ASICs. Our product portfolio includes the world's first and only IttyBitty® SOT-23 thermal diode supervisor IC and the smallest three-zone thermal supervisor. All together, Micrel offers a complete family of one, two, and three-zone thermal supervisor ICs as well as both analog and digital fan controllers.

Operational Amplifiers and Comparators

Micrel has a broad range of high and low voltage op amps and comparators, ranging from general purpose devices to high speed. Of particular note are the MIC86x family which are by far the lowest power consumption op amps of their type on the market, making them ideally suited for all forms of battery powered equipment.

Other Product Lines

- Charge pumps
- Voltage references
- Voltage/processor supervisors
- Miniature MOSFETs
- Serial and parallel-input latched drivers
- Display drivers
- Latch drivers
- Custom and semicustom products

ISO 9001 Quality Assurance

Micrel first achieved ISO 9001 registration on March 31, 1997 and has maintained that registration through surveillance audits. We are committed to delivering products and services that meet or exceed our customers' expectations — error free, on-schedule, and at a competitive price. At Micrel we have a culture of continuous improvement that runs through all disciplines in the company and includes the activities of our suppliers.

Commitment to Customer Satisfaction

We are committed to contributing to our customers' success. Our internal processes have been developed with flexibility in mind, so that we can quickly react to your changing requirements. Our outstanding sales, customer service and technical support organizations make it easy to get your questions answered.

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LDO Regulator Selection Guide

Device	I_{OUT}	V_{OUT}	V_{IN}	I_{GND} (typ.)	$V_{DROPOUT}$ (typ.)	Comments
			(2×2) MLF-6 Package, θ_{JA} = 90°C/W			
MIC5247	150mA	1.6, 1.8	2.7V to 6V	85µA	150mV	µCap LDO
MIC5252	150mA	2.8, 2.85, 3.0	2.7V to 6V	90µA	135mV	Low Noise µCap LDO
MIC5255	150mA	2.8, 2.85, 3.0	2.7V to 6V	90µA	135mV	Low Noise µCap LDO
MIC5305	150mA	2.85, 2.9, 3.0, Adj.	2.25V to 5.5V	90µA	60mV	High PSRR µCap LDO
MIC5219	500mA	2.8, 3.0	2.5V to 12V	80µA	300mV	Low Noise LDO
			SC-70 Package, θ_{JA} = 450°C/W			
MIC5213	80mA	2.5, 2.6, 2.7, 2.8, 3.0, 3.3, 3.6, 5.0	2.5V to 16V	180µA	300mV	µCap LDO
			SOT-23-5 Package, θ_{JA} = 235°C/W (Low-Profile TSOT23-5)[1]			
MIC5231	10mA	2.75, 3.0, 3.3, 5.0	3.5V to 12V	650nA	150mV	µCap LDO
MIC5270	100mA	–3.0, –4.1, –5.0, Adj.	–2V to –16V	35µA	480mV	Negative µCap LDO
MIC5271	100mA	–3.0, –5.0, Adj.	–3.3V to –16V	35µA	480mV	Negative µCap LDO
MIC5203	80mA	2.8, 3.0, 3.3, 3.6, 3.8, 4.0, 4.5, 4.75, 5.0	2.5V to 16V	180µA	300mV	µCap LDO
MIC5233	100mA	1.8, 2.5, 3.0, 3.3, 5.0, Adj.	2.3V to 36V	18µA	270mV	µCap LDO
MIC5205	150mA	2.5, 2.7, 2.8, 3.0, 3.1, 3.2, 3.3, 3.6, 3.8, 4.0, 5.0, Adj.	2.5V to 16V	80µA	165mV	Low Noise LDO
MIC5206	150mA	2.5, 2.7, 3.0, 3.2, 3.3, 3.6, 3.8, 4.0, 5.0	2.5V to 16V	80µA	165mV	Low Noise LDO w/Error Flag
MIC5235	150mA	1.5, 1.8, 2.5, 2.7, 3.0, 3.3, 5.0, Adj.	2.3V to 24V	18µA	310mV	µCap LDO
MIC5238	150mA	0.9, 1.1, 1.3	1.5V to 6V V_{IN}, 2.3V to 6V V_{BIAS}	23µA	310mV	Low Voltage, Dual Supply µCap LDO
MIC5245	150mA	*Not Recommended For New Designs; See MIC5255*				
MIC5246	150mA	*Not Recommended For New Designs; See MIC5255*				
MIC5247	150mA	1.5, 1.6, 1.8, 1.85, 2.0, 2.4	2.7V to 6V	85µA	150mV	µCap LDO
MIC5248	150mA	1.2	2.7V to 6V	85µA	n/a	µCap LDO w/Power Good
MIC5252	150mA	1.8, 2.5, 2.8, 2.85, 3.0, 4.75	2.7V to 6V	90µA	135mV	Low Noise µCap LDO
MIC5255	150mA	2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3	2.7V to 6V	90µA	135mV	Low Noise µCap LDO
MIC5256	150mA	2.6, 2.7, 2.8, 2.85, 3.0, 3.3	2.7V to 6V	90µA	135mV	Low Noise µCap LDO w/Error Flag
MIC5258	150mA	1.2	2.7V to 6V	85µA	n/a	µCap LDO w/Always On Power Good
MIC5207	180mA	1.8, 2.5, 2.9, 3.0, 3.3, 3.6, 3.8, 4.0, 5.0, Adj.	2.5V to 16V	80µA	165mV	Low Noise LDO
MIC5216	500mA	3.0, 3.3, 3.6, 5.0	2.5V to 12V	80µA	300mV	Low Noise LDO w/Error Flag
MIC5219	500mA	2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.3, 3.6, 5.0, Adj.	2.5V to 12V	80µA	300mV	Low Noise LDO
			Thin SOT-23-5 Package, θ_{JA} = 235°C/W			
MIC5238	150mA	1.1, 1.3	1.5V to 6V V_{IN}, 2.3V to 6V V_{BIAS}	23µA	310mV	Low Voltage, Dual Supply µCap LDO
MIC5247	150mA	2.0	2.7V to 6V	85µA	150mV	µCap LDO
MIC5255	150mA	2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3	2.7V to 6V	90µA	135mV	Low Noise µCap LDO
MIC5256	150mA	2.8	2.7V to 6V	90µA	135mV	Low Noise µCap LDO w/Error Flag
MIC5305	150mA	2.85, 2.9, 3.0	2.25V to 5.5V	90µA	60mV	High PSRR µCap LDO
			MSOP-8 Package, θ_{JA} = 200°C/W			
MIC5200	100mA	3.3, 5.0	2.5V to 26V	130µA	230mV	
MIC2951	150mA	5.0, Adj.	2V to 30V	120µA	300mV	Load Dump Protection
MIC5206	150mA	3.0, 3.3, 3.6, 3.8, 4.0, 5.0, Adj.	2.5V to 16V	80µA	165mV	Low Noise LDO w/Error Flag
MIC5249	300mA	2.85	2.7V to 6V	90µA	400mV	µCap LDO w/POR

1. Contact factory for availability.

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LDO Regulator Selection Guide

Device	I_{OUT}	V_{OUT}	V_{IN}	I_{GND} (typ.)	$V_{DROPOUT}$ (typ.)	Comments
			TO-92 Package, θ_{JA} = 180°C/W			
LP2950	100mA	5.0, 5.0 (0.5%)	2.0V to 30V	100µA	380mV	2nd Source to LP2950
MIC2950	150mA	5.0, 5.0 (0.5%)	2.0V to 30V	120µA	300mV	Load Dump Protection
MIC5207	180mA	3.3	2.5V to 16V	80µA	165mV	Low Noise LDO
MIC2954	250mA	5.0, 5.0 (0.5%)	2.0V to 30V	140µA	375mV	Load Dump Protection
			SOIC-8 Package, θ_{JA} = 160°C/W			
LP2951	100mA	4.85, 5.0, 5.0 (0.5%)	2.0V to 30V	100µA	380mV	2nd Source to LP2951
MIC5200	100mA	3.0, 3.3, 4.85, 5.0	2.5V to 26V	130µA	230mV	
MIC2951	150mA	3.3, 4.85, 5.0, 5.0 (0.5%)	2.0V to 30V	120µA	300mV	Load Dump Protection
MIC5201	200mA	3.0, 3.3, 5.0	2.5V to 26V	130µA	270mV	Load Dump Protection
MIC5201	200mA	Adj.	2.5V to 16V	130µA	270mV	
MIC2954	250mA	5.0, 5.0 (0.5%) Adj.	2.0V to 30V	140µA	375mV	Load Dump Protection
MIC29201	400mA	3.3, Adj.	4.3V to 26V	140µA	450mV	Load Dump Protection
MIC29204	400mA	5.0, Adj.	4.3V to 26V	140µA	450mV	Load Dump Protection
			PDIP Package, θ_{JA} = 130°C/W			
LP2951	100mA	5.0 (0.5%), 5.0 (1%), Adj.	2V to 30V	100µA	380mV	2nd Source to LP2951
MIC2951	150mA	3.3, 4.85, 5.0 (0.5%), 5.0 (1%)	2V to 30V	120µA	380mV	Load Dump Protection
MIC29204	400mA	5.0, Adj.	4.3V to 26V	140µA	450mV	Load Dump Protection
			Power MSOP-8 Package, θ_{JA} = 80°C/W (2"CU); 130°C/W (Min. Footprint)			
MIC5236	150mA	2.5, 3.0, 3.3, 5.0, Adj.	2.3V to 30V	20µA	350mV	Load Dump Protected µCap LDO
MIC5245			*Not Recommended For New Designs; See MIC5255*			
MIC5216	500mA	3.0, 3.3, 3.6, 5.0	2.5V to 12V	80µA	300mV	Low Noise LDO w/Error Flag
MIC5219	500mA	3.0, 3.3, 3.6, 5.0, Adj.	2.5V to 12V	80µA	300mV	Low Noise LDO
MIC5239	500mA	1.5, 1.8, 2.5, 3.0, 3.3, 5.0, Adj.	2.3V to 30V	23µA	350mA	µCap LDO
MIC3775	750mA	1.5, 1.65, 1.8, 2.5, 3.0, 3.3, Adj.	2.25V to 6V	400µA	300mV	Low Dropout µCap LDO
MIC3975	750mA	1.65, 1.8, 2.5, 3.0, 3.3, 5.0, Adj.	2.25V to 16V	400µA	300mV	Ultra-Low Dropout µCap LDO
MIC49150	1.5A	0.9, 1.2, 1.5, 1.8, Adj.	1.4V to 6V	15mA	280mV	Dual Supply µCap LDO
			Power SOP-8 Package, θ_{JA} = 63°C/W (2"CU); 100°C/W (Min. Footprint)			
MIC5236	150mA	2.5, 3.0, 3.3, 5.0, Adj.	2.3V to 30V	20µA	350mV	Load Dump Protected µCap LDO
MIC5209	500mA	1.8, 2.5, 3.0, 3.3, 3.6, 5.0, Adj.	2.5V to 16V	80µA	300mV	Low Noise
MIC5239	500mA	1.5, 1.8, 2.5, 3.0, 3.3, 5.0, Adj.	2.3V to 30V	23µA	350mV	µCap LDO
MIC37100	1A	1.5, 1.65, 1.8, 2.5, 3.3	2.25V to 6V	700µA	280mV	µCap LDO
MIC37101	1A	1.5, 1.65, 1.8, 2.5, 3.3	2.25V to 6V	400µA	280mV	µCap LDO
MIC37102	1A	Adj.	2.25V to 6V	400µA	280mV	µCap LDO
MIC39101	1A	1.8, 2.5, 3.3, 5.0	2.25V to 16V	400µA	410mV	Ultra-Low Dropout
MIC39102	1A	Adj.	2.25V to 16V	400µA	410mV	Ultra-Low Dropout

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LDO Regulator Selection Guide

Device	I_{OUT}	V_{OUT}	V_{IN}	I_{GND} (typ.)	$V_{DROPOUT}$ (typ.)	Comments
			SOT-223 Package, θ_{JA} = 50°C/W (2"CU); 95°C/W (Min. Footprint)			
MIC5200	100mA	3.0, 3.3, 4.85, 5.0	2.5V to 26V	130µA	230mV	
MIC5201	200mA	3.0, 3.3, 4.85, 5.0	2.5V to 26V	130µA	270mV	Load Dump Protection
MIC2954	250mA	5.0, 5.0 (0.5%)	2V to 30V	140µA	375mV	Load Dump Protection
MIC2920A	400mA	3.3, 4.85, 5.0, 12	4.3V to 26V	140µA	450mV	Load Dump Protection
MIC5209	500mA	2.5, 3.0, 3.3, 4.2, 5.0	2.5V to 16V	80µA	300mV	Low Noise LDO
MIC5239	500mA	1.5, 1.8, 2.5, 3.3, 5.0	2.3V to 30V	23µA	350mV	µCap LDO
MIC37100	1A	1.5, 1.65, 1.8, 2.5, 3.3	2.25V to 6V	400µA	280mV	µCap LDO
MIC39100	1A	1.8, 2.5, 3.3, 5.0	2.25V to 16V	400µA	410mV	Ultra-Low Dropout
			S-PAK Package, θ_{JA} = 25°C/W (2"Cu); θ_{JC} = 2°C/W			
MIC3715x	1.5A	1.5, 1.65, 1.8, 2.5, 3.3, Adj.	2.25V to 6V	17mA	325mV	µCap LDO
MIC49150	1.5A	0.9, 1.2, 1.5, 1.8, Adj.	1.4V to 6V V_{IN}, 3V to 6V V_{BIAS}	15mA	280mV	Dual Supply µCap LDO
MIC37252	2.5A	Adj.	3.0V to 6V	40mA	550mV	Low Voltage µCap LDO
MIC3730x	3A	1.5, 1.65, 1.8, 2.5, 3.3, Adj.	2.25V to 6V	27mA	325mV	µCap LDO
MIC49300	3A	0.9, 1.2, 1.5, 1.8, Adj.	1.4V to 6V V_{IN}, 3V to 6V V_{BIAS}	25mA	280mV	Dual Supply µCap LDO
MIC3750x	5A	1.5, 1.65, 1.8, 2.5, 3.3	2.3V to 6V	57mA	330mV	µCap LDO
			TO-220 Package, θ_{JA} = 55°C/W (Free Air); θ_{JC} = 2°C/W			
MIC2954	250mA	5.0, 5.0 (0.5%)	2.0V to 30V	140µA	375mV	Load Dump Protection
MIC29201	400mA	3.3, 4.85, 5.0, 12	4.3V to 26V	140µA	450mV	Load Dump Protection
MIC29202	400mA	Adj.	4.3V to 26V	140µA	450mV	Load Dump Protection
MIC2920A	400mA	3.3, 4.85, 5.0, 12	4.3V to 26V	140µA	450mV	Load Dump Protection
MIC5237	500mA	2.5, 3.3, 5.0	2.5V to 16V	80µA	300mV	
MIC29371	750mA	3.3, 5.0, 12	4.3V to 26V	160µA	370mV	Load Dump Protection
MIC29372	750mA	Adj.	4.3V to 26V	160µA	370mV	Load Dump Protection
MIC2937A	750mA	3.3, 5.0, 12	4.3V to 26V	160µA	370mV	Load Dump Protection
MIC2940A	1.25A	3.3, 5.0, 12	4.3V to 26V	240µA	400mV	Load Dump Protection
MIC2941A	1.25A	Adj.	4.3V to 26V	240µA	400mV	Load Dump Protection
MIC2915x	1.5A	3.3, 5.0, 12, Adj.	2.25V to 26V	225µA	350mV	Load Dump Protection
MIC39150/1	1.5A	1.65, 1.8, 2.5	2.25V to 16V	300µA	375mV	Ultra-Low Dropout
MIC2930x	3A	3.3, 5.0, 12, Adj.	2.25V to 26V	225µA	370mV	Load Dump Protection
MIC29310/2	3A	3.3, 5.0, Adj.	2.3V to 16V	400µA	600mV	
MIC29311	3A	5.1	2.3V to 16V	400µA	600mV	USB LDO
MIC39300/1	3A	1.8, 2.5	2.25V to 16V	5mA	350mV	Ultra-Low Dropout
MIC2950x	5A	3.3, 5.0, Adj.	2.25V to 26V	225µA	370mV	Load Dump Protection
MIC29510/2	5A	3.3, 5.0, Adj.	2.3V to 16V	500µA	700mV	
MIC39500/1	5A	1.8, 2.5	2.25V to 16V	70mA	350mV	Ultra-Low Dropout
MIC2971x	7.5A	3.3, 5.0, Adj.	2.3V to 16V	1mA	700mV	
MIC37138	1A	2.5	2.5V to 6V	11mA	280mV	µCap LDO
MIC37139	1.5A	1.8	2.25V to 6V	17mA	350mV	µCap LDO

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LDO Regulator Selection Guide

Device	I_{OUT}	V_{OUT}	V_{IN}	I_{GND} (typ.)	$V_{DROPOUT}$ (typ.)	Comments
			TO-263 Package, θ_{JA} = 25°C/W (2" CU); θ_{JC} = 2°C/W			
MIC2954	250mA	5.0, 5.0 (0.5%)	2.0V to 30V	140µA	375mV	Load Dump Protection
MIC29201	400mA	3.3, 4.85, 5.0, 12	4.3 to 26V	140µA	450mV	Load Dump Protection
MIC29202	400mA	Adj.	4.3 to 26V	140µA	450mV	Load Dump Protection
MIC5237	500mA	2.5, 3.3, 5.0	2.5V to 16V	80µA	300mV	
MIC5209	500mA	1.8, 2.5, 3.0, 3.3, 5.0, Adj.	2.5V to 16V	80µA	300mV	Low Noise LDO
MIC29371	750mA	3.3, 5.0, 12	4.3V to 26V	160µA	370mV	Load Dump Protection
MIC29372	750mA	Adj.	4.3V to 26V	160µA	370mV	Load Dump Protection
MIC2937A	750mA	3.3, 5.0, 12	4.3V to 26V	160µA	370mV	Load Dump Protection
MIC2940A	1.25A	3.3, 5.0, 12	4.3V to 26V	240µA	400mV	Load Dump Protection
MIC2941A	1.25A	Adj.	4.3V to 26V	240µA	400mV	Load Dump Protection
MIC2915x	1.5A	3.3, 5.0, 12, Adj.	2.25V to 26V	225µA	350mV	Load Dump Protection
MIC39150/1	1.5A	1.65, 1.8, 2.5	2.25V to 16V	300µA	375mV	Ultra-Low Dropout
MIC37252	2.5A	Adj.	3.0V to 6V	40mA	550mV	Low Voltage µCap LDO
MIC2930x	3A	3.3, 5.0, 12, Adj.	2.25V to 26V	225µA	350mV	Load Dump Protection
MIC39300/1	3A	1.8, 2.5	2.25V to 16V	5mA	350mV	Ultra-Low Dropout
MIC29310/2	3A	3.3, 5.0, Adj.	2.3V to 16V	400µA	600mV	
MIC29311	3A	5.1	2.3V to 16V	400µA	600mV	USB LDO
MIC37302	3A	Adj.	2.25V to 6V	27mA	325mV	µCap LDO
MIC2950x	5A	3.3, 5.0, Adj.	2.25V to 26V	225µA	370mV	Load Dump Protection
MIC39500/1	5A	1.8, 2.5	2.25V to 16V	70mA	350mV	Ultra-Low Dropout
			TO-247 Package, θ_{JA} = 40°C/W (Free Air); θ_{JC} = 1.5°C/W			
MIC2975x	7.5A	3.3, 5.0, Adj.	2.5V to 26V	35mA	425mV	Load Dump Protection
Dual LDOs			***SOT-23-6 Package, θ_{JA} = 235°C/W***			
MIC5211	50mA	1.8, 2.5, 2.7, 2.8, 3.3, 3.6, 5.0, 1.8/2.5, 1.8/3.3, 2.5/3.3, 3.3/5.0	2.5V to 16V	90µA	250mV	µCap LDO
			SOIC-8 Package, θ_{JA} = 160°C/W			
MIC5212	500mA ×2	3.3/2.5	4.0V to 16V	1.5mA	350mV	Small, High-Current Dual
			MSOP-8 Package, θ_{JA} = 200°C/W			
MIC5208	50mA	3.0, 3.3, 3.6, 4.0, 5.0	2.5V to 16V	180µA	250mV	µCap LDO
MIC5210	150mA	2.7, 2.8, 3.0, 3.3, 3.6, 4.0, 5.0	2.5V to 16V	80µA	165mV	Low Noise LDO
			MSOP-10 Package, θ_{JA} = 200°C/W			
MIC5250	150mA	2.7, 2.8, 3.0, 3.3	2.7V to 6V	100µA	250mV	Low Noise µCap LDO
MIC5254	150mA	3.3/2.5	2.7V to 6V	117µA	135mV	Dual µCap LDO w/ Error Flags

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LDO Regulator Selection Guide

Device	I_{OUT}	V_{OUT}	V_{IN}	I_{GND} (typ.)	$V_{DROPOUT}$ (typ.)	Comments
Power Management ICs			***(3×3) MLF-10 Package, θ_{JA} = 60°C/W***			
MIC2210	150mA/300mA	1.8/3.3, 3.0/3.3	2.25V to 5.5V	48µA	120mV	Dual LDO w/Driver and Error Flag in (3mm) MLF™
MIC2211	150mA/300mA	1.5/1.8, 1.5/2.8, 1.5/3.1, 1.6/2.9, 1.6/3.3, 1.8/2.8, 1.8/2.9, 1.8/3.0, 1.8/3.3, 1.9/2.8, 2.5/1.8, 2.5/1.9, 2.5/2.8, 2.5/3.0, 2.5/3.3, 2.8/3.3, 2.85/2.85, 2.9/1.5, 3.0/1.6, 3.0/2.8, 3.0/3.0, 3.0/3.3, 3.3/2.8, 3.3/3.3, 3.6/3.6	2.25V to 5.5V	48µA	120mV	µCap LDO in (3mm) MLF™
MIC2212	150mA/300mA	1.8/2.8, 1.85/2.85, 1.85/2.9, 2.6/2.8, 2.6/2.85 2.7/2.8, 2.7/2.9, 2.8/2.6, 2.8/2.8, 2.8/3.0, 3.0/2.8, 3.3/2.8	2.25V to 5.5V	48µA	120mV	Dual LDO w/POR in (3mm) MLF™
MIC2213	150mA/300mA	1.8/2.85, 2.6/2.85	2.25V to 5.5V	48µA	120mV	Sequenced Dual LDO w/POR and Driver in (3mm) MLF™
MIC2214	150mA/300mA	1.8/2.8, 1.85/2.6, 1.85/2.65, 1.85/2.85, 2.5/1.8, 2.5/2.8, 2.5/3.0, 2.6/2.85, 2.7/3.0, 2.7/3.3, 3.0/1.6, 3.0/2.8, 3.0/3.3, 3.3/1.6, 3.0/1.8, 3.3/1.6, 3.3/1.8, 3.3/2.8	2.25V to 5.5V	48µA	120mV	Dual LDO w/POR and Driver
MIC2219	150mA/300mA	3.0/3.3	2.25V to 5.5V	48µA	120mV	Dual Dynamically Adjustable µCap LDO
LDO Controllers			***(N-Channel Controllers)***			
			SOIC-8 Package, θ_{JA} = 160°C/W			
MIC5156	—	3.3, 5.0, Adj.	3.0V to 36V	—	—	Drives External N-Channel MOSFET
			SOIC-14 Package, θ_{JA} = 120°C/W			
MIC5157	—	Selectable 3.3, 5.0, 12	3.0V to 36V	—	—	Drives External N-Channel MOSFET
MIC5158	—	5.0, Adj.	3.0V to 36V	—	—	Drives External N-Channel MOSFET
			(N-Channel Controllers)			
			MSOP-10 Package, θ_{JA} = 200°C/W			
MIC5190	—	Adj. down to 0.5V	0.9V to 5.5V	17mA	—	High Bandwidth >500kHz
MIC5191	—	Adj. down to 1.0V	1.0V to 5.5V	17mA	—	High Bandwidth >500kHz
			(P-Channel Controllers)			
			SOT-23-6 Package, θ_{JA} = 235°C/W			
MIC5159	—	1.8, 3.0, Adj.	1.65V to 5.5V	—	—	Low Input Voltage P-Channel MOSFET
DDR Terminators			***MSOP-10 Package, θ_{JA} = 200°C/W***			
MIC5162	—	—	1.35V to 6V	—	—	DDR Memory Termination

Battery Charger Selection Guide

Device	Cell Type	Charge Voltage	Charge Voltage Accuracy	V_{IN}	I_{GND} (typ.)	I_{GND} Shutdown (typ.)	$V_{DROPOUT}$ +25°C (typ.)	$V_{DROPOUT}$ Temp. Max.
Linear Battery Chargers				***Power MSOP-8, Power SOIC-8 and SOT-223 Package***				
MIC79050 *New!*	Li-Ion, 1 cell	4.2V	±0.75%	2.5V to 16V	85µA	3µA	380mV	600mV

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Switch-Mode Voltage Regulator Selection Guide

Buck Regulators (Internal Switch)

Device	V_{IN} Range	V_{OUT}	Output Current	Frequency	Package(s)	Comments
MIC4680	4V to 34V	3.3V, 5V, Adj.	1.3A	200KHz	SOIC-8	
MIC4681	4V to 30V	Adj.	2A Peak	200KHz	SOIC-8	
MIC4682	4V to 34V	Adj.	2A	200KHz	SOIC-8	10% Precision Adjustable Current Limit
MIC4684	4V to 30V	Adj.	2A	200KHz	SOIC-8	
MIC4685	4V to 30V	Adj.	3A	200kHz	SPAK-7	33% Smaller Than TO-263 (D2PAK)!
MIC4690	4V to 30V	Adj.	1.3A	500KHz	SOIC-8	500KHz: Small Inductor
MIC4574	4V to 24V	3.3V, 5V, Adj.	0.5A	200KHz	DIP-8, SOP-14	
MIC4575	4V to 24V	3.3V, 5V, Adj.	1A	200KHz	TO220-5, TO263-5	
MIC4576	4V to 36V	3.3V, 5V, Adj.	3A	200KHz	TO220-5, TO263-5	
LM2574	4V to 40V	3.3V, 5V, 12V, Adj.	0.5A	52KHz	DIP-8,	
LM2575	4V to 40V	3.3V, 5V, 12V, Adj.	1A	52KHz	TO220-5, TO263-5, DIP-16, SOP-24	
LM2576	4V to 40V	3.3V, 5V, 12V, Adj.	3A	52KHz	TO220-5, TO263-5	

Synchronous Buck Regulators (Internal Switches)

MIC2177	4.5V to 16.5V	3.3V, 5V, Adj.	2.5A	200KHz	SOIC-20	Auto-Skip Mode
MIC2178	4.5V to 16.5V	3.3V, 5V, Adj.	2.5A	200KHz	SOIC-20	Manual-Select Skip Mode
MIC2179	4.5V to 16.5V	3.3V, 5V, Adj.	1.5A	200KHz	SSOP-20	
MIC2202	2.3V to 5.5V	Adj. to 0.5V	0.6A	2MHz	MSOP-10, (3×3mm) MLF™-10	1μF Ceramic Stable
MIC2204	2.3V to 5.5V	Adj. to 1V	0.6A	2MHz	MSOP-10, (3×3mm) MLF™-10	

Buck Controllers (External Switch)

MIC2184	2.9V to 16V	Adj.	External P-FET	200/400KHz	SOIC-16, QSOP-16	Can also be Configured as Buck-Boost
MIC2194	2.9V to 14V	Adj.	External P-FET	400KHz	SOIC-8	

Synchronous Buck Controllers (External Switches)

MIC2168	3V to 14.5V	Adj. To 0.8V	External N-FETs, 15A	1MHz	MSOP-10	Small and Fast
MIC2169	3V to 14.5V	Adj. To 0.8V	External N-FETs, 20A	500KHz	MSOP-10	Small and Super Efficient
MIC2182	4.5V to 32V	3.3V, 5V, Adj.	External N-FETs, 20A	300KHz	SOIC-16, TSSOP-16	
MIC2193	2.9V to 14V	Adj.	External N- and P-FET	400KHz	SOIC-8	100% Max. Duty Cycle
MIC2198	4.5V to 32V	Adj. To 0.8V	External N-FETs, 20A	500kHz	(4mm) MLF™-12	
MIC2199	4.5V to 32V	Adj. To 0.8V	External N-FETs, 20A	300kHz	(4mm) MLF™-12	

Boost Regulators (Internal Switch)

MIC2141	2.5V to 14V	Adj. to 22V	0.5A(1)	330KHz	SOT-23-5	Dynamically Adjustable V_{OUT} for LCD Bias
MIC2142	2.2V to 16V	Adj. to 22V	0.5A(1)	330KHz	SOT-23-5	
MIC2145	2.4V to 16V	Adj. to 16V	1.5A(1)	450KHz	MSOP-8	
MIC2171	3V to 40V	Adj. to 60V	2.5A(1)	100KHz	TO-220-5, TO-263-5	
MIC2172	3V to 40V	Adj. to 60V	1.25A(1)	100KHz	SOIC-8, DIP-8	Sync Pin

1. Maximum Switch Current.

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Switch-Mode Voltage Regulator Selection Guide

Boost Regulators (Internal Switch)

Device	V_{IN} Range	V_{OUT}	Output Current	Frequency	Package(s)	Comments
MIC2287	2.5V to 10V	Adj. to 34V	0.5A(1)	1.2MHz	Thin SOT-23-5, (2×2mm) MLF™-8	White LED Driver
MIC2288	2.5V to 10V	Adj. to 34V	1A(1)	1.2MHz	Thin SOT-23-5, (2×2mm) MLF™-8	
MIC2289	2.5V to 10V	Adj. to 34V	0.5A(1)	1.2MHz	(2×2mm) MLF™-8	Internal Schottky White LED Driver
MIC2290	2.5V to 10V	Adj. to 34V	0.5A(1)	1.2MHz	(2×2mm) MLF™-8	
MIC2291	2.5V to 10V	Adj. to 34V	1A(1)	1.2MHz	Thin SOT23-5, (2×2mm) MLF™-8	Photo Flash LED Driver.
MIC2292	2.5V to 10V	Adj. to 34V	0.5A(1)	1.6MHz	(2×2mm) MLF™-8	High-Frequency White LED Driver w/Internal Schotty Diode
MIC2293	2.5V to 10V	Adj. to 34V	0.5A(1)	2MHz	(2×2mm) MLF™-8	High-Frequency White LED Driver w/Internal Schotty Diode
MIC3172	3V to 40V	Adj. to 34V	1.25A(1)	100KHz	SOIC-8, DIP-8	Enable Pin
MIC2570	1.3V to 15V	2.85V, 3.3V, 5V, Adj. to 33V	1A(1)	20KHz	SOIC-8	
MIC2571	0.9V to 15V	2.85V, 3.3V, 5V, Adj. to 33V	1A(1)	20KHz	SOIC-8	

Boost Controllers (External Switch)

MIC2186	2.9V to 14V	Adj.	External N-FET	100/200/400KHz	SOIC-16, QSOP-16	
MIC2196	2.9V to 14V	Adj.	External N-FET	400KHz	SOIC-8	Boost, SEPIC, Cuk Configurations

Synchronous Boost Controllers (External Switches)

MIC2185	2.9V to 14V	Adj.	External N-FET/P-FET	400KHz	SOIC-8	Efficient

Flyback/Forward Converter/Push-Pull Controllers for Isolated Applications (External Switches)

Device	V_{IN} Range	Max Duty Cycle	Topology	Frequency	Package(s)	Comments
MIC9130	9V to 180V	50%	Forward/Flyback	Adj. to 1.5MHz output	SOIC-16, QSOP-16	Fast. Built-in 180V Start-up Circuitry
MIC9131	9V to 180V	75%	Forward/Flyback	Adj. to 1MHz output	SOIC-16, QSOP-16	Fast. Built-in 180V Start-up Circuitry
MIC3808	8.3V to 15V	50%	Push-Pull	Adj. to 1MHz	SOIC-8, MSOP-8	High Output Current
MIC3809	4.1V to 15V	50%	Push-Pull	Adj. to 1MHz	SOIC-8, MSOP-8	High Output Current
MIC3838	8.3V to 15V	50%	Push-Pull	Adj. to 1MHz	MSOP-10	Can Implement Volt-Second Clamp
MIC3839	4.1V to 15V	50%	Push-Pull	Adj. to 1MHz	MSOP-10	Can Implement Volt-Second Clamp
MIC38C42	15.5V to 20V	96%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14, MSOP-8	0.5A Gate Drive
MIC38C43	9V to 20V	96%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14, MSOP-8	0.5A Gate Drive
MIC38C44	15.5V to 20V	50%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14, MSOP-8	0.5A Gate Drive
MIC38C45	9V to 20V	50%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14, MSOP-8	0.5A Gate Drive
MIC38HC42	15.5V to 20V	96%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14	1A Gate Drive
MIC38HC43	9V to 20V	96%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14	1A Gate Drive
MIC38HC44	15.5V to 20V	50%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14	1A Gate Drive
MIC38HC45	9V to 20V	50%	Forward/Flyback	Adj. to 500KHz	DIP-8, DIP-14, SOIC-8, SOIC-14	1A Gate Drive
MIC38C42A(2)	15.5V to 20V	96%	Forward/Flyback	Adj. to 500KHz	SOIC-8, SOIC-14	0.5A Gate Drive
MIC38C43A(2)	9V to 20V	96%	Forward/Flyback	Adj. to 500KHz	SOIC-8, SOIC-14	0.5A Gate Drive
MIC38C44A(2)	15.5V to 20V	50%	Forward/Flyback	Adj. to 500KHz	SOIC-8, SOIC-14	0.5A Gate Drive
MIC38C45A(2)	9V to 20V	50%	Forward/Flyback	Adj. to 500KHz	SOIC-8, SOIC-14	0.5A Gate Drive

1. Maximum switch current.

2. Recommended for new designs.

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High-Side Load Switches Selection Guide

Device	Type	Operating Voltage Min.	Operating Voltage Max.	Max. Switch Current	R_{DS} ON @5V	Load Discharge	Enable Logic	Input Pull-Up Resistor	Reverse Current Blocking	Package
MIC94030	Single	2.7V	13.5V	1.0A	750mΩ		Low True		■	SOT-143
MIC94030	Single	2.7V	13.5V	1.0A	750mΩ		Low True	■	■	SOT-143
MIC94050	Single	1.8V	5.5V	1.8A	125mΩ		Low True		■	SOT-143
MIC94051	Single	1.8V	5.5V	1.8A	125mΩ		Low True	■	■	SOT-143
MIC94052	Single	1.8V	5.5V	2.0A	70mΩ		Low True			SC-70-6
MIC94053	Single	1.8V	5.5V	2.0A	70mΩ		Low True	■		SC-70-6
MIC94060	Single	1.8V	5.5V	2.0A	75mΩ		High True			SC-70-6
MIC94061	Single	1.8V	5.5V	2.0A	75mΩ	■	High True			SC-70-6

PC Card/PCMCIA/CardBus Power Distribution Switch Selection Guide

Device	Slots Supported	V_{CC3} On-Resistance	V_{CC5} On-Resistance	V_{PP} On-Resistance	Current Limit	Thermal Shutdown	Charge Pump[1]	Package
MIC2557	Single			500mΩ				SOIC-8
MIC2558	Dual			500mΩ				SOIC-14
MIC2560	Single	40mΩ	70mΩ	550mΩ	■	■		SOIC-16 Wide
MIC2561	Single	110mΩ	210mΩ	550mΩ	■	■		SOIC-14
MIC2562A	Single	100mΩ	70mΩ	600mΩ	■	■	■	SOIC-14
MIC2563A	Dual	100mΩ	70mΩ	600mΩ	■	■	■	SSOP-28
MIC2564A	Dual	120mΩ	85mΩ	1300mΩ	■	■	■	SSOP-24, TSSOP-24
MIC2566	Single	120mΩ	85mΩ	—	■	■	■	SOIC-14, TSSOP-14
MIC2568	Dual	120mΩ	85mΩ	—	■	■	■	SSOP-28, TSSOP-28

1. 2V not required for switching when equipped with a charge pump.

USB Transceiver Selection Guide

Device	Description	Supported Speeds	Package
MIC2550	Not Recommended For New Designs; See MIC2550A		
MIC2551	Not Recommended For New Designs; See MIC2551A		
MIC2550A	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, MLF™-16
MIC2551A	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, MLF™-16

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USB and General Purpose Power Distribution Switch Selection Guide

Device	Type	Switch Element	Internal Charge Pump	Operating Voltage	Maximum Switch Current	Output Resistance	Body Diode Blocking	Open Load Detect	Enable Logic	Under Voltage Lockout	Current Limit	Thermal Shutdown	Fault Flag	Flag Transient Filter	Package
MIC2025-1	Single	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■	■	SOIC-8, MSOP-8
MIC2025-2	Single	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■	■	SOIC-8, MSOP-8
MIC2026-1	Dual	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■	■	SOIC-8, DIP-8
MIC2026-2	Dual	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■	■	SOIC-8, DIP-8
MIC2027-1	Quad	N-Channel	■	2.7V to 5.5V	500mA	150mΩ@5V	■		Noninverting	■	■	■	■	■	SOIC-16
MIC2027-2	Quad	N-Channel	■	2.7V to 5.5V	500mA	150mΩ@5V	■		Inverting	■	■	■	■	■	SOIC-16
MIC2040-1	Single	P-Channel		0.8V to 5.5V	1.5A	80mΩ@5V			Noninverting		■	■	■	■	MSOP-10
MIC2040-2	Single	P-Channel		0.8V to 5.5V	1.5A	80mΩ@5V			Inverting		■	■	■	■	MSOP-10
MIC2041-1	Single	P-Channel		0.8V to 5.5V	1.5A	80mΩ@5V			Noninverting	Latched	■	■	■	■	MSOP-10
MIC2041-2	Single	P-Channel		0.8V to 5.5V	1.5A	80mΩ@5V			Inverting	Latched	■	■	■	■	MSOP-10
MIC2042-1	Single	P-Channel		0.8V to 5.5V	3.0A	40mΩ@5V			Noninverting		■	■	■	■	SOIC-8, TSSOP-14
MIC2042-2	Single	P-Channel		0.8V to 5.5V	3.0A	40mΩ@5V			Inverting		■	■	■	■	SOIC-8, TSSOP-14
MIC2043-1	Single	P-Channel		0.8V to 5.5V	3.0A	40mΩ@5V			Noninverting	Latched	■	■	■	■	SOIC-8, TSSOP-14
MIC2043-2	Single	P-Channel		0.8V to 5.5V	3.0A	40mΩ@5V			Inverting	Latched	■	■	■	■	SOIC-8, TSSOP-14
MIC2044-1	Single	P-Channel		0.8V to 5.5V	6.0A	20mΩ@5V			Noninverting		■	■	■	■	TSSOP-16
MIC2044-2	Single	P-Channel		0.8V to 5.5V	6.0A	20mΩ@5V			Inverting		■	■	■	■	TSSOP-16
MIC2045-1	Single	P-Channel		0.8V to 5.5V	6.0A	20mΩ@5V			Noninverting	Latched	■	■	■	■	TSSOP-16
MIC2045-2	Single	P-Channel		0.8V to 5.5V	6.0A	20mΩ@5V			Inverting	Latched	■	■	■	■	TSSOP-16
MIC2075-1	Single	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	Latched	■	■	SOIC-8, MSOP-8
MIC2075-2	Single	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	Latched	■	■	SOIC-8, MSOP-8
MIC2076-1	Dual	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	Latched	■	■	SOIC-8, DIP-8
MIC2076-2	Dual	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	Latched	■	■	SOIC-8, DIP-8
MIC2077-1	Quad	N-Channel	■	2.7V to 5.5V	500mA	150mΩ@5V	■		Noninverting	■	■	Latched	■	■	SOIC-16
MIC2077-2	Quad	N-Channel	■	2.7V to 5.5V	500mA	150mΩ@5V	■		Inverting	■	■	Latched	■	■	SOIC-16
MIC2505	Single	N-Channel	■	2.7V to 7.5V	2A	50mΩ@5V	■	■	Noninverting	■	■	■	■		SOIC-8
MIC2505-1	Single	N-Channel	■	2.7V to 7.5V	2A	50mΩ@5V	■		Noninverting	■	■	■	■		SOIC-8
MIC2505-2	Single	N-Channel	■	2.7V to 7.5V	2A	50mΩ@5V	■		Inverting	■	■	■	■		SOIC-8
MIC2506	Dual	N-Channel	■	2.7V to 7.5V	1A	125mΩ@5V	■	■	Noninverting	■	■	■	■		SOIC-8
MIC2514	Single	P-Channel		3V to 13.5V	400mA	2.4Ω@5V			Noninverting		■	■			SOT-23-5
MIC2524-1	Quad	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■		SOIC-16, DIP-16
MIC2524-2	Quad	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■		SOIC-16, DIP-16
See MIC2027–MIC2524 not recommended for new designs.															
MIC2525-1	Single	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■		SOIC-8, DIP-8
MIC2525-2	Single	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■		SOIC-8, DIP-8
See MIC2025–MIC2525 not recommended for new designs.															

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USB and General Purpose Power Distribution Switch Selection Guide

Device	Type	Switch Element	Internal Charge Pump	Operating Voltage	Maximum Switch Current	Output Resistance	Body Diode Blocking	Open Load Detect	Enable Logic	Under Voltage Lockout	Current Limit	Thermal Shutdown	Fault Flag	Flag Transient Filter	Package
MIC2526-1	Dual	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■		SOIC-8, DIP-8
MIC2526-2	Dual	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■		SOIC-8, DIP-8
See MIC2026–MIC2526 not recommended for new designs.															
MIC2527-1	Quad	N-Channel	■	2.7V to 5.5V	500mA	300mΩ@5V	■		Noninverting	■	■	■	■		SOIC-16, DIP-16
MIC2527-2	Quad	N-Channel	■	2.7V to 5.5V	500mA	300mΩ@5V	■		Inverting	■	■	■	■		SOIC-16, DIP-16
See MIC2027–MIC2527 not recommended for new designs.															
MIC2529-1	Single[1]	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Noninverting		■	■	■		SOIC-8
MIC2529-2	Single[1]	N-Channel	■	2.7V to 5.5V	500mA	140mΩ@5V	■		Inverting		■	■	■		SOIC-8
MIC2536-1	Dual	N-Channel	■	2.7V to 5.5V	100mA	700mΩ@5V	■		Noninverting		■	■	■	■	SOIC-8, MSOP-8
MIC2536-2	Dual	N-Channel	■	2.7V to 5.5V	100mA	700mΩ@5V	■		Inverting		■	■	■	■	SOIC-8, MSOP-8
MIC2537-1	Quad	N-Channel	■	2.7V to 5.5V	100mA	700mΩ@5V	■		Noninverting		■	■	■		SOIC-16
MIC2537-2	Quad	N-Channel	■	2.7V to 5.5V	100mA	700mΩ@5V	■		Inverting		■	■	■		SOIC-16
MIC2544-1	Single	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Noninverting		■	■	■		SOIC-8, MSOP-8
MIC2544-2	Single	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Inverting		■	■	■		SOIC-8, MSOP-8
MIC2545A-1	Single	N-Channel	■	2.7V to 5.5V	2.5A	50mΩ@5V	■		Noninverting		■	■	■		SOIC-8, DIP-8, TSSOP-14
MIC2545A-2	Single	N-Channel	■	2.7V to 5.5V	2.5A	50mΩ@5V	■		Inverting		■	■	■		SOIC-8, DIP-8, TSSOP-14
MIC2546-1	Dual	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Noninverting		■	■	■		SOIC-16, TSSOP-16
MIC2546-2	Dual	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Inverting		■	■	■		SOIC-16, TSSOP-16
MIC2547-1	Dual	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Noninverting		■	Latched	■		SOIC-16, TSSOP-16
MIC2547-2	Dual	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Inverting		■	Latched	■		SOIC-16, TSSOP-16
MIC2548-1	Single	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Noninverting		■	Latched	■		SOIC-8, MSOP-8
MIC2548-2	Single	N-Channel	■	2.7V to 5.5V	1.5A	120mΩ@5V	■		Inverting		■	Latched	■		SOIC-8, MSOP-8
MIC2549A-1	Single	N-Channel	■	2.7V to 5.5V	2.5A	50mΩ@5V	■		Noninverting		■	Latched	■		SOIC-8, DIP-8, TSSOP-14
MIC2549A-2	Single	N-Channel	■	2.7V to 5.5V	2.5A	50mΩ@5V	■		Inverting		■	Latched	■		SOIC-8, DIP-8, TSSOP-14
USB Switches Supporting ACPI S0/S3 State Transitions[2]															
MIC2010-1	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■	■	QSOP-16
MIC2010-2	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■	■	QSOP-16
MIC2012-1	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	■	■	■	QSOP-16
MIC2012-2	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	■	■	■	QSOP-16
MIC2012	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		—	■	■	■	■	■	SOIC-8
MIC2070-1	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	Latched	■	■	QSOP-16
MIC2070-2	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	Latched	■	■	QSOP-16
MIC2072-1	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Noninverting	■	■	Latched	■	■	QSOP-16
MIC2072-2	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		Inverting	■	■	Latched	■	■	QSOP-16
MIC2072	Dual	N-Channel	■	4.5V to 5.5V	500mA	140mΩ@5V	■		—	■	■	Latched	■	■	SOIC-8

1. Single switch plus integrated 3.3V low-dropout linear regulator.
2. Contact factory for availabilty of specific options. Specifications are given for “MAIN” mode operation.

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Operational Amplifier Selection Guide

Device	Description	GBW	Slew Rate	Supply Current (per Op Amp)	Input Offset Voltage (max.)	Input Bias Current	Supply Range	Rail-to-Rail I/O	# of Op Amps Per Package	Package	Comments
MIC6211	High-Voltage Op Amp	2.5MHz	6V/µs	1.2mA	7mV	50nA	4V–32V		1	SOT-23-5	High-Voltage General Purpose
LMC7101	General Purpose Op Amp	500kHz	0.5V/µs	500µA	6mV	1pA	2.7V–10V	Input/Output	1	SOT-23-5	Rail-to-Rail Input and Output
MIC7111	Micropower 1.8V Op Amp	25kHz	20mV/µs	15µA	7mV	1pA	1.8V–11V	Input/Output	1	SOT-23-5	Rail-to-Rail Input and Output
MIC7122	Rail-to-Rail Dual Op Amp	750kHz	0.7V/µs	350µA	9mV	1pA	2.2V–15V	Input/Output	2	MSOP-8	Rail-to-Rail Input and Output
MIC7300	High Output Drive Op Amp	500kHz	500mV/µs	700µA	9mV	0.5pA	2.2V–10V	Input/Output	1	SOT-23-5 MSOP-8	Rail-to-Rail Input and Output
MIC860	4MHz/30µA Op Amp	4MHz	3V/µs	30µA	15mV	20pA	2.43V–5.25V	Output	1	SC-70-5	Very Low Power
MIC861	400kHz/46µA Op Amp	400kHz	0.12V/µs	4.6µA	10mV	20pA	2.43V–5.25V	Output	1	SC-70-5	Very Low Power
MIC862	Dual 3MHz/31µA Op Amp	3MHz	4V/µs	31µA	6mV	10pA	2V–5.25V	Output	2	SOT-23-8	Very Low Power
MIC863	Dual 450KHz/4.2µA Op Amp	450KHz	0.35V/µs	4.2µA	6mV	10pA	2V–5.25V	Output	2	SOT-23-8	Very Low Power
MIC910	135MHz Op Amp	135MHz	270V/µs	2.4mA	15mV	3.5µA	5V–18V		1	SOT-23-5	Low Power/High Speed
MIC911	105MHz Op Amp	105MHz	120V/µs	1.25mA	10mV	1.5µA	5V–18V		1	SOT-23-5	Low Power/High Speed
MIC912	200MHz Op Amp	200MHz	360V/µs	2.4mA	15mV	3.5µA	5V–18V		1	SOT-23-5	Low Power/High Speed
MIC913	350MHz Op Amp	350MHz	500V/µs	4.2mA	16mV	5.5µA	5V–18V		1	SOT-23-5	Low Power/High Speed
MIC914	160MHz Op Amp	160MHz	160V/µs	1.25mA	10mV	1.5µA	5V–18V		1	SOT-23-5	Low Power/High Speed
MIC915	Dual MIC910	135MHz	270V/µs	2.4mA	15mV	3.5µA	5V–18V		2	MSOP-10	Low Power/High Speed
MIC916	Triple MIC910	135MHz	270V/µs	2.4mA	15mV	3.5µA	5V–18V		3	QSOP-8	Low Power/High Speed
MIC918	1500V/µs Op Amp	51MHz	1500V/µs	550µA	5mV	0.26µA	5V–18V		1	SC-70-5	Low Power/High Speed
MIC919	1500V/µs Op Amp	27MHz	1500V/µs	360µA	5mV	0.13µA	5V–18V		1	SC-70-5	Low Power/High Speed
MIC920	3000V/µs Op Amp	80kHz	3000V/µs	500µA	5mV	0.26pF	5V–18V		1	SC-70-5	Low Power/High Speed
MIC921	3000V/µs Op Amp	45kHz	3000V/µs	300µA	5mV	0.13pF	5V–18V		1	SC-70-5	Low Power/High Speed
MIC922	230MHz Op Amp	230MHz	1500V/µs	2.5mA	5mV	1.7µA	5V–18V		1	SC-70-5	Low Power/High Speed
MIC923	410MHz/2200V/µs Op Amp	410MHz	2200V/µs	2.5mA	5mV	1.7µA	5V–18V		1	SC-70-5	Low Power/High Speed

Comparator Selection Guide

Device	Description	Response Time	Supply Current	Input Offset Voltage (max.)	Input Bias Current	Supply Range	Package	Comments
MIC6270	High-Voltage Comparator	600ns	0.3mA	5mV	25nA	2V–36V	SOT-23-5	
MIC7211	Rail-to-Rail Input Comparator	4µs	5µA	10mV	5pA	2.2V–10V	SOT-23-5	Push-Pull Output
MIC7221	Rail-to-Rail Input Comparator	4µs	5µA	10mV	5pA	2.2V–10V	SOT-23-5	Open-Drain Output
MIC833	Comparator and Reference w/Adjustable Hysteresis	5µs	1µA	n/a	5pA	1.5V–5.5V	SOT-23-5	Internal 1% Reference
MIC834	Comparator and Reference	5µs	1.5µA	n/a	5pA	1.5V–5.5V	SOT-23-5	Internal 1% Reference
MIC841	Comparator and Reference w/Adjustable Hysteresis	12µs	1.5µA	n/a	5pA	1.5V–5.5V	SC-70-5	Internal 1.25% Reference
MIC842	Comparator and Reference	12µs	1.5µA	n/a	5pA	1.5V–5.5V	SC-70-5	Internal 1.25% Reference

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MOSFET Driver Selection Guide

Device	Function	Type	Logic	Peak Output	Output Impedance	On-Time (Delay+Rise Time)	Supply Voltage	Package	Comments
MIC426 see MIC4426	Low-Side Driver	Dual	Inverting	1.5A	6Ω	30ns into 1,000 pF	4.5V to 18V		Drives Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF.
MIC427 see MIC4427	Low-Side Driver	Dual	Non-inverting	1.5A	6Ω	30ns into 1,000 pF	4.5V to 18V		Drives Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF.
MIC428 see MIC4428	Low-Side Driver	Dual	Inverting + Non-inverting	1.5A	6Ω	30ns into 1,000 pF	4.5V to 18V		Drives Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF.
MIC1426 see MIC4426	Low-Side Driver	Dual	Inverting	1.2A	8Ω	38ns into 1,000pF	4.75V to 16V		Drives Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF.
MIC1427 see MIC4427	Low-Side Driver	Dual	Non-inverting	1.2A	8Ω	38ns into 1000pF	4.75V to 16V		Drives Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF.
MIC1428 see MIC4428	Low-Side Driver	Dual	Inverting + Non-inverting	1.2A	8Ω	38ns into 1,000 pF	4.75V to 16V		Drives Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF.
MIC4416	Low-Side Driver	Single	Non-inverting	1.2A	3.5Ω	37ns into 1,000 pF	4.5V to 18V	SOT-143	IttyBitty® Device
MIC4417	Low-Side Driver	Single	Inverting	1.2A	3.5Ω	37ns into 1,000 pF	4.5V to 18V	SOT-143	IttyBitty® Device
MIC4420	Low-Side Driver	Single	Non-inverting	6A	2.5Ω	20ns into 2,500pF	4.5V to 18V	SOIC-8, MSOP-8, PDIP-8 TO-220-5, CerDIP-8(1)	Drives Hex 6–Hex 7 Size. MOSFET: 1,500pF to 16,000pF; Latch-Up Protected; Input to –5V.
MIC4429	Low-Side Driver	Single	Inverting	6A	2.5Ω	20ns into 2,500pF	4.5V to 18V	SOIC-8, MSOP-8, PDIP-8, TO-220-5	Drives a Hex 6–Hex 7 Size. MOSFET: 1,500pF to 16,000pF; Latch-Up Protected; Input to –5V.
MIC4421 MIC4421A(2)	Low-Side Driver	Single	Inverting	9A	1Ω	25ns into 10,000pF	4.5V to 18V	PDIP-8, SOIC-8, TO-220-5	Drives 1,500pF to 47,000pF; Latch-Up Protected; Input to –5V.
MIC4422 MIC4422A(2)	Low-Side Driver	Single	Non-inverting	9A	1Ω	25ns into 10,000pF	4.5V to 18V	PDIP-8 , SOIC-8, TO-220-5	Drives 1,500pF to 47,000pF; Latch-Up Protected; Input to –5V.
MIC4423	Low-Side Driver	Dual	Inverting	3A	3.5Ω	56ns into 1,800pF	4.5V to 18V	SOIC-8, SOIC-16, PDIP-8	Drives Hex 4–Hex 5 Size. MOSFET: 6,000pF to 12,000pF; Latch-Up Protected; Input to –5V.
MIC4424	Low-Side Driver	Dual	Non-inverting	3A	3.5Ω	56ns into 1,800pF	4.5V to 18V	SOIC-8, SOIC-16 PDIP-8, CerDIP(3)	Drives a Hex 4–Hex 5 Size. MOSFET: 6,000pF to 12,000pF; Latch-up Protected; Input to –5V.
MIC4425	Low-Side Driver	Dual	Inverting + Non-inverting	3A	3.5Ω	56ns into 1,800pF	4.5V to 18V	SOIC-8, SOIC-16 PDIP-8	Drives a Hex 4–Hex 5 Size. MOSFET: 6,000pF to 12,000pF; Latch-up Protected; Input to –5V.
MIC4426	Low-Side Driver	Dual	Inverting	1.5A	6Ω	35ns into 1,000pF	4.5V to 18V	SOIC-8 MSOP-8 PDIP-8, CerDIP-8(4)	Drives a Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V.
MIC4427	Low-Side Driver	Dual	Non-inverting	1.5A	6Ω	35ns into 1,000pF	4.5V to 18V	SOIC-8 MSOP-8 PDIP-8, CerDIP-8(5)	Drives a Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V.
MIC4428	Low-Side Driver	Dual	Inverting + Non-inverting	1.5A	6Ω	35ns into 1,000pF	4.5V to 18V	SOIC-8 MSOP-8 PDIP-8, CerDIP-8(6)	Drives a Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V.
MIC4451 MIC4451A(2)	Low-Side Driver	Single	Inverting	12A	0.8Ω	35ns into 15,000pF	4.5V to 18V	SOIC-8, PDIP-8, TO-220-5	Drives 1,500pF to 62,000pF; Latch-up Protected; Input to –5V.

1. SMD (military) 5962-8877003PA.
2. New die. Recommended for new design. Extended temperature range offering (–55°C to +125°C) in SOIC package only. Refer to MIC442XAAM.
3. SMD (military) 5962-8850305PA.
4. SMD (military) 5962-8850307PA.
5. SMD (military) 5962-8850308PA.
6. SMD (military) 5962-8850309PA.

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MOSFET Driver Selection Guide

Device	Function	Type	Logic	Peak Output	Output Impedance	On-Time (Delay+Rise Time)	Supply Voltage	Package	Comments
MIC4452 **MIC4452A**[1]	Low-Side Driver	Single	Non-inverting	12A	0.8Ω	35ns into 15,000pF	4.5V to 18V	SOIC-8, PDIP-8, TO-220-5	Drives 1,500pF to 62,000pF; Latch-up Protected; Input to –5V.
MIC4467	Low-Side Driver	Quad	Non-inverting NAND Inputs	1.2A	5Ω	44ns into 470pF	4.5V to 18V	SOIC-16 wide, PDIP-14	Drives a Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V.
MIC4468	Low-Side Driver	Quad	Non-inverting AND Inputs	1.2A	5Ω	44ns into 470pF	4.5V to 18V	SOIC-16 wide, PDIP-14	Drives a Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V.
MIC4469	Low-Side Driver	Quad	Inverting + Non-inverting AND Inputs	1.2A	5Ω	44ns into 470pF	4.5V to 18V	SOIC-16 wide PDIP-14, CerDIP-14[2]	Drives a Hex 0–Hex 3 Size. MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to –5V.
MIC5011	High- or Low-Side Driver	Single	Non-inverting	–	–	60µs into 1,000pF	4.75V to 32V	SOIC-8, PDIP-8	External Charge Pump. Capacitors (opt.).
MIC5013	High- or Low-Side Driver	Single	Non-inverting	–	–	60µs into 1,000pF	7V to 32V	SOIC-8, PDIP-8	Current Sense, Fault.
MIC5014	High- or Low-Side Driver	Single	Non-inverting	–	–	90µs into 1,000pF	2.75V to 30V	SOIC-8, PDIP-8	Low Cost.
MIC5015	High- or Low-Side Driver	Single	Inverting	–	–	90µs into 1,000pF	2.75V to 30V	SOIC-8, PDIP-8	Low Cost.
MIC5016	High- or Low-Side Driver	Dual	Non-inverting	–	–	90µs into 1,000pF	2.75V to 30V	SOIC-16 wide, PDIP-14	Low Cost.
MIC5017	High- or Low-Side Driver	Dual	Inverting	–	–	90µs into 1,000pF	2.75V to 30V	SOIC-16 wide, PDIP-14	Low Cost.
MIC5018	High- or Low-Side Driver	Single	Non-inverting	–	–	2.1ms into 3,000pF	2.7V to 9V	SOT-143	IttyBitty® Device
MIC5020	Complementary Low-Side Driver	Single	Non-inverting	–	–	1.1µs into 1,500pF	11V to 50V	SOIC-8, PDIP-8	Complement to MIC5021 (Similar Performance), Current Sense (50mV nominal).
MIC5021	High-Speed High-Side Driver	Single	Non-inverting	–	–	0.9µs into 1,500pF	12V to 36V	SOIC-8, PDIP-8	Current Sense (50mV nominal).
MIC5022	Half-Bridge High-Side Driver	Single	Non-inverting	–	–	2.2µs into 1,500pF	12V to 36V	SOIC-16, PDIP-14	Current Sense (50mV nominal).

1. New die. Recommended for new designs. Extended temperature range offering (–55°C to +125°C) in SOIC package only. Refer to MIC442XAAM.
2. SMD (military) 5962-9459403MCA.

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Voltage Monitors and Voltage/Processor Supervisors Selection Guide

Standard Voltage Supervisors	Manual Reset Input	Reset Output Polarity	Reset Threshold Voltage	t_{RESET} (ms)	I_{SUPPLY} (µA)	Package
MIC1810-15/-10/-5	No	Low	4.12V, 4.37V, 4,62V	100	9.0	SOT-23-3
MIC1815-20/-10	No	Low	2.55V, 2.88V	100	9.0	SOT-23-3
MIC809R/S/T/J/M/L	No	Low	2.63V, 2.93V, 3.08V, 4.00V, 4.38V, 4.63V	140	9.0	SOT-23-3
MIC810R/S/T/J/M/L	No	High	2.63V, 2.93V, 3.08V, 4.00V, 4.38V, 4.63V	140	9.0	SOT-23-3
MIC811R/S/T/J/M/L	Yes	Low	2.63V, 2.93V, 3.08V, 4.00V, 4.38V, 4.63V	140	9.0	SOT-143
MIC812R/S/T/J/M/L	Yes	High	2.63V, 2.93V, 3.08V, 4.00V, 4.38V, 4.63V	140	9.0	SOT-143
MIC6315-xxD2	Yes	Low	2.5–5.0V in 100mV increments	20	9.0	SOT-143
MIC6315-xxD3	Yes	Low	2.5–5.0V in 100mV increments	140	9.0	SOT-143
MIC6315-xxD4	Yes	Low	2.5–5.0V in 100mV increments	1100	9.0	SOT-143

Standard Voltage Supervisors with Power Fail Detection	Manual Reset Input	Reset Output Polarity	Reset Threshold Voltage	t_{RESET} (ms)	I_{SUPPLY} (µA)	Package
MIC707	Yes	Both	4.65V	140	60	SOIC-8, PDIP-8
MIC708	Yes	Both	4.40V	140	60	SOIC-8, PDIP-8
MIC708R/S/T	Yes	Both	2.63V, 2.93V, 3.08V	140	30	SOIC-8, PDIP-8

Standard Voltage Supervisors for AMD Elan™ Microprocessors	Manual Reset Input	Reset Output Polarity	Reset Threshold Voltage	t_{RESET} (ms)	I_{SUPPLY} (µA)	Package
MIC8114T (SC400/410)	Yes	Low	3.08V	790	9.0	SOT-143
MIC8115T (SC500)	Yes	Low	3.08V	1100	9.0	SOT-143

Single and Dual Ultra-Low Voltage Supervisors	Single/Dual	Manual Reset Input	Reset Output(s) Polarity	Reset Threshold Voltage	t_{RESET} (ms)	I_{SUPPLY} (µA)	Package
MIC2774H-xxBM5 **MIC2774N-xxBM5** **MIC2774L-xxBM5**	Dual	Yes	High Open-Drain Low	Fixed: 1.69V, 2.25V, 2.34V, 2.53V 2.67V, 2.81V, 2.93V, 3.09V, 4.43V, 4.68V; Adjustable from 0.300V min.	140	3.5	SOT-23-5
MIC2775-xxBM5	Single	Yes	Both	1.69V, 2.25V, 2.34V, 2.53V, 2.67V, 2.81V 2.93V, 3.09V, 4.43V, 4.68V	140	3.5	SOT-23-5
MIC2776N-BM5	Single	Yes	Open-Drain	Adjustable from 0.300V min.	140	3.5	SOT-23-5
MIC2776L-BM5	Single	Yes	Low	Adjustable from 0.300V min.	140	3.5	SOT-23-5
MIC2776H-BM5	Single	Yes	High	Adjustable from 0.300V min.	140	3.5	SOT-23-5
MIC2777-xxBM5	Dual	Yes(1)	Both	Fixed: 1.69V, 2.25V, 2.34V, 2.53V 2.67V, 2.81V, 2.93V, 3.09V, 4.43V, 4.68V; Adjustable from 0.300V min.	140	3.5	SOT-23-5

1. Manual reset switch connects to adjustable input.

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Voltage Monitors and Voltage/Processor Supervisors Selection Guide

Voltage Monitors & Supervisors Optimized for Battery Monitoring	Manual Reset Input	Reset Output(s) Polarity	V_{RESET}	Adjustable Hysteresis	t_{RESET} (ms)	I_{SUPPLY} (µA)	Package
MIC833	No	High	Adjustable ≥ 1.25V	Y	n/a	1.0	SOT-23-5
MIC834	No	High	Adjustable ≥ 1.25V	N	n/a	1.5	SOT-23-5
MIC2755	Yes	Open-Drain	Adjustable ≥ 1.25V	Y	700	2.0	MSOP-8
MIC2778-1/-2(1)	No	Low	Adjustable ≥ 1.25V	Y	140	1.0	SOT-23-5
MIC2779L-1/-2(1)	No	Low	Adjustable ≥ 1.25V	Y	140	1.0	SOT-23-5
MIC2779H-1/-2(1)	No	High	Adjustable ≥ 1.25V	Y	140	1.0	SOT-23-5
MIC841	No	High or Low	Adjustable ≥ 1.25V	Y	n/a	1.5	SC-70-5
MIC842	No	High or Low	Adjustable ≥ 1.25V	Y	n/a	1.5	SC-70-5

1. –1 is 1% and –2 is 2% 1.25V reference tolerance.

Microprocessor Supervisors with Watchdog Timers	Manual Reset Input	Reset Output(s) Polarity	Reset Threshold Voltage	Watchdog Timeout	Power Fail Detect	t_{RESET} (ms)	I_{SUPPLY} (µA)	Package
MIC705	Yes	Low	4.65V	1.6s	Yes	140	60	SOIC-8, PDIP-8
MIC706	Yes	Low	4.40V	1.6s	Yes	140	60	SOIC-8, PDIP-8
MIC706P	Yes	High	2.63V	1.6s	Yes	140	30	SOIC-8, PDIP-8
MIC706R/S/T	Yes	Low	2.63V, 2.93V, 3.08V	1.6s	Yes	140	30	SOIC-8, PDIP-8
MIC1232	Yes	Both	4.62V or 4.37V	150ms/600ms/1.2s	Yes	250	30	SOIC-8, PDIP-8
MIC1832	Yes	Both	2.88V or 2.55V	150ms/600ms/1.2s	Yes	250	30	SOIC-8, PDIP-8

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Latched Driver Selection Guide

Device	Input	Number Output Channels	Nominal Sink Current	Nominal Source Current	Maximum Output Voltage	Thermal, UVLO, Overcurrent Protection	Packages SOIC	PLCC	PDIP	CerDIP
MIC4807	Parallel 3-bit Address	8-bit	100mA	—	80V	■	—	—	18-pin	—
MIC5800	Parallel	4-bit	400mA	—	50V	—	14-pin	—	14-pin	—
MIC5801	Parallel	8-bit	400mA	—	50V	—	24-pin	28-pin	22-pin	22-pin(1)
MIC58P01	Parallel	8-bit	400mA	—	80V	■	24-pin wide	28-pin	22-pin	—
MIC5821	Serial	8-bit	400mA	—	50V / 35V	—	—	—	16-pin	—
MIC5822	Serial	8-bit	400mA	—	80V / 50V	—	—	—	16-pin	—
MIC5841	Serial	8-bit	400mA	—	50V / 35V	—	18-pin wide	20-pin	18-pin	—
MIC5842	Serial	8-bit	400mA	—	80V / 50V	—	18-pin wide	20-pin	18-pin	—
MIC58P42	Serial	8-bit	400mA	—	80V / 50V	■	18-pin wide	20-pin	18-pin	—
MIC5891	Serial	8-bit	—	400mA	50V	—	16-pin wide	—	16-pin	—
MIC59P50	Parallel	8-bit	400mA	—	80V	■	24-pin wide	28-pin	24-pin	—
MIC59P60	Serial	8-bit	400mA	—	80V / 50V	■	20-pin wide	20-pin	20-pin	—

1. SMD (military) 5962-8764001WA.

Display Driver Selection Guide

Device	Description	Segments	Package
MIC5400	LED Video Display Driver		PLCC-28
MIC8030	50V LCD Driver	32	PLCC-44
MM5450	LED Display Driver	34	PDIP-40, PLCC-44
MM5451	LED Display Driver	35	PDIP-40, PLCC-44

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Thermal/System Management, Transistors and Arrays, Timers, References, and SCSI Terminators Selection Guide

2-Wire Serial Thermal Supervisors	Description	Remote Zone	Internal Zone	Data Width	CRIT Output	Devices Bus	Package
MIC184	Local/Remote Thermal Supervisor	1(1)	Y	9	—	8(2)	SOIC-8, MSOP-8
MIC280	Precision IttyBitty® Thermal Supervisor	1	Y	12	Y	8	SOT-23-6
MIC281	Low-Cost IttyBitty® Thermal Sensor	1	—	8	—	8	SOT-23-6
MIC284	2-Zone Thermal Supervisor w/CRIT Output	1	Y	8	Y	8	SOIC-8, MSOP-8
MIC384	3-Zone Thermal Supervisor	2	Y	8	—	8	SOIC-8, MSOP-8

1. MIC184 has limit registers for monitoring one zone at a time; either the internal or external zone may be monitored at any given time.
2. In LM75 mode; 4 when using T1 function.

Fan Management ICs	Description	Package
MIC502	Fan Management IC	DIP-8, SOIC-8
MIC74	2-Wire Serial I/O Expander and Fan Controller	QSOP-16

I/O Expanders	Description	Package
MIC74	2-Wire Serial I/O Expander and Fan Controller	QSOP-16

Transistors	Description	Voltage Range	On-Resistance	Substrate Pin	Gate Pull-Up Resistor	Package
MIC94030	Single P-Channel MOSFET	2.7V to 13.5V	0.75Ω @ V_{GS} = 4.5V	■		SOT-143-4
MIC94031	Single P-Channel MOSFET	2.7V to 13.5V	0.75Ω @ V_{GS} = 4.5V	■	■	SOT-143-4

Array	Description	Voltage	Input Signal	Package
MIC2981/82	Octal Source-Driver Array	50V	5V-TTL or 5V-to-15V CMOS or PMOS	DIP-18, SOIC-18 wide

Timers	Description	Package
MIC1555	IttyBitty® RC Timer/Oscillator	SOT-23-5
MIC1557	IttyBitty® RC Oscillator	SOT-23-5

References	Description	Package
LM4040/4041	Precision Micropower Shunt Voltage Reference	SOT-23-3

SCSI Terminators	Description	Package
MIC5204	SCSI-II Active Terminator	SOIC-8, SOT-223

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Hot Swap Power Controller Selection Guide

Device	Outputs	Input Voltage Range	Latch Off	Auto Retry	/FAULT	/POR	PWRGD or RST	OV SCR	Foldback Current Limit	Packages	Comments
MIC2085	1	+2.3V to +16.5V	■		■	■		■	■	QSOP-16	Pin-for-pin equivalent to LTC1642; Uncommitted comparator and crowbar output.
MIC2086	1	+2.3V to +16.5V	■		■	■	/PWRGD	■	■	QSOP-20	Uncommitted comparator, crowbar output, and C_L discharge capability.
MIC2580A	4	±12V , +3.3V, +5V	■		■	■	/PWRGD		■	TSSOP-24	Single-slot controller for CompactPCI applications.
MIC2582	1	+2.3V to +13.2V	■			■				SOIC-8	Pin-for-pin functional equivalent to LTC1422; Dual-level fault detection.
MIC2583	1	+2.3V to +13.2V	■		■	■	PWRGD			QSOP-16	Dual-level fault detection; C_L discharge capability.
MIC2583R	1	+2.3V to +13.2V		■	■	■	PWRGD			QSOP-16	Dual-level fault detection; C_L discharge capability.
MIC2584	2	CH1: +2.3V to +13.2V CH2: +1V to +13.2V	■		■	■				TSSOP-16	Output voltage tracking with dual-level fault detection.
MIC2585-1 **MIC2585-2**	2	CH1: +2.3V to +13.2V CH2: +1V to +13.2V	■		■	■	PWRGD			TSSOP-24	V_{OUT} sequencing/tracking with dual-level fault detection and C_L discharge capability: –1: V_{OUT2} follows V_{OUT1}; –2: V_{OUT1} follows V_{OUT2}.
MIC2586-1[1] **MIC2586-2**[1]	1	+10V to +80V	■				PWRGD /PWRGD		■	SOIC-14	Multiple PWRGD outputs for sequencing, user-programmable delay.
MIC2586R-1[1] **MIC2586R-2**[1]	1	+10V to +80V		■			PWRGD /PWRGD		■	SOIC-14	Multiple PWRGD outputs for sequencing, user-programmable delay.
MIC2587-1[1] **MIC2587-2**[1]	1	+10V to +80V	■				PWRGD /PWRGD		■	SOIC-8	1st Generation +48V controller. Pin-for-pin equivalent to LT1641–1.
MIC2587R-1[1] **MIC2587R-2**[1]	1	+10V to +80V		■			PWRGD /PWRGD		■	SOIC-8	1st Generation +48V controller. Fault condition: Auto-retry. Pin-for-pin equivalent to LT1641–2.
MIC2588-1 **MIC2588-2**	1	–19V to –80V	■				PWRGD /PWRGD		■	SOIC-8	1st Generation –48V controller; pin-for-pin equivalent to LT1640/LT/LT1640A/LT4250.
MIC2589-1 **MIC2589-2**	1	–19V to –80V	■				PWRGD /PWRGD		■	SOIC-14	Programmable UVLO and OV protection and three PWRGD outputs for sequencing.
MIC2589R-1 **MIC2589R-2**	1	–19V to –80V	■				PWRGD /PWRGD			SOIC-14	Programmable UVLO and OV protection and three PWRGD outputs for sequencing.
MIC2590B	5	±12V, +5V, +3.3V, and +3.3V_{AUX}	■		■					TQFP-48	Dual-slot controller for PCI v2.x and PCI-X 1.0b Compliant applications with IPMI v1.0 support.
MIC2593	5	±12V, +5V, +3.3V, and +3.3V_{AUX}	■		■					TQFP-48	Dual-slot controller for PCI v2.x and PCI-X 1.0b Compliant applications without IPMI v1.0 support.
MIC2591A[1]	3	+12V, +3.3V, and +3.3V_{AUX}	■		■		/PWRGD			TQFP-48	Dual-slot controller for PCI-Express systems with IPMI v1.0 support.
MIC2592A	3	+12V, +3.3V, and +3.3V_{AUX}	■		■		/PWRGD			TQFP-48	Dual-slot controller for PCI-Express systems where IPMI v1.0 support not needed.
MIC2594-1 **MIC2594-2**	1	–21V to –80V	■				PWRGD /PWRGD		■	SOIC-8	Programmable input ON/OFF control.
MIC2595-1 **MIC2595-2**	1	–19V to –80V	■				PWRGD /PWRGD			SOIC-14	Programmable input ON/OFF control and three PWRGD outputs for sequencing.
MIC2595R-1 **MIC2595R-2**	1	–19V to –80V		■			PWRGD /PWRGD			SOIC-14	Programmable input ON/OFF control and three PWRGD outputs for sequencing.
MIC2596-1[1] **MIC2596-2**[1]	2	to –70V		■	■				■	TSSOP-20	Active HIGH enable (–1); Active LOW enable (–2). integrated 1.5Ω power FETs.
MIC2597-1[1] **MIC2597-2**[1]	2	to –70V	■		■				■	TSSOP-20	Active HIGH enable (–1); Active LOW enable (–2). integrated 1.5Ω power FETs.

1. Coming soon. Contact factory.

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QwikRadio® RF Transmitter Selection Guide

Device	Frequency Range	Selection Data Rate	Supply Current (Mean)	Operating Voltage (Min.)	Modulation Type	Package	Key Feature
MICRF102	300MHz–440MHz	20kbps	4.7mA	4.75V	ASK/OOK	SOIC-8	
MICRF103	800MHz–1GHz	115kbps	16mA	4.75V	ASK/OOK	SOIC-8	
MICRF104	300MHz–440MHz	20kbps	10mA	1.8V	ASK/OOK	SOIC-14	

QwikRadio® RF Receiver Selection Guide

Device	Frequency Range	Maximum Data Rate	Supply Current	Power Cycle	Modulation Type	Package	Key Feature
MICRF001	300MHz–440MHz	4.8kbps	6.3mA		ASK/OOK	SOIC-14, DIP-14	
MICRF011	300MHz–440MHz	10kbps	2.4mA		ASK/OOK	SOIC-14, DIP-14	
MICRF002	300MHz–440MHz	10kbps	2.4mA	■	ASK/OOK	SOIC-16, DIP-16	Power-Cycle Mode
MICRF022	300MHz–440MHz	10kbps	2.4mA	■	ASK/OOK	SOIC-8	Smaller Package
MICRF003	800MHz–1GHz	20kbps	4mA	■	ASK/OOK	SOIC-16	
MICRF033	800MHz–1GHz	20kbps	4mA	■	ASK/OOK	SOIC-8	Smaller Package
MICRF005	800MHz–1GHz	115kbps	10mA	■	ASK/OOK	SOIC-14	Newest 900MHz, Rx
MICRF007	300MHz–440MHz	1.2kbps	1.7mA	■	ASK/OOK	SOIC-8	
MICRF008	300MHz–440MHz	4.8kbps	16mA	■	ASK/OOK	SOIC-8	Lowest Cost

RadioWire® RF Transceiver Selection Guide

Device	Frequency Range	Maximum Data Rate	Supply Current		Modulation Type	Package	Key Feature
			Receive	Transmit			
MICRF500	700MHz–1.1GHz	128k Baud	12mA	50mA	FSK	LQFP-44	
MICRF501	300MHz–440MHz	128k Baud	8mA	45mA	FSK	LQFP-44	

Foundry Services for Integrated Circuits

Micrel, Incorporated's Wafer Fab Division offers foundry services to commercial and military IC designers and all manufacturers seeking a production solution compatible with their specific application and/or technology needs. The Micrel foundry provides a variety of wafer fabrication and processing resources which can address unique requirements for short runs or for volume production.

- Bipolar: 5, 10, 20, 30, 40 Volts
- BiCMOS: 5, 10, 20, 30, 40 Volts
- BCD: 5, 10, 40, 70, 150 Volts
- Sub-Micron CMOS: 5 Volts
- Analog/Mixed -ModeCMOS Si Gate: 5, 10, 15, 20, 25 Volts
- CMOS Metal Gate: 5, 10, 20, 45, 60 Volts
- PMOS and NMOS Metal Gate: 5, 10, 20, 45 Volts

Wafer Fab Capabilities

State of the Art Quality, Process and Systems

- SPC 100% >1.0 C_{PK}, 90% >1.33 C_{PK}
- Die and fab yields >95%
- OSD (on-time delivery) >95%
- QS9000/ISO9002 preferred
- FIT Rates
  - Super micron: <4
  - Sub micron: <8
- Customer returns <0.18% of annual sales
- Realtime SPC deployed
- World class benchmarked systems implemented
  - Weekly operations reviews
  - SAG, monthly operations reviews, MBO goals
- Quarterly system reviews
- Yearly quality audits/review for critical suppliers

Alternate or Second Source Products

- Mature MOS or Bipolar Circuits: Customer-owned Tooling (COT)
- Full Custom Designs

Foundry Services

Bipolar, CMOS,BCD,BiCMOS,NMOS, and PMOS

- Mixed Technologies
  - Digital + Analog + Power + MOSFET
- CMOS/DMOS High Voltage with High Current
- Low Threshold Voltage, Low Power CMOS
- Low,medium, and high voltage Bipolar Technologies
  - Analog Bipolar
  - High Speed Bipolar and Si Ge
- Ink Jet, Optoelectronic and Sensor Processes
- SPICE Parameters available

Micrel has a modern fabrication facility using 1x and 5x steppers (6 inch), positive resist, all-dry-etch and "all implanted" processing, with in-house implant and sputtered metal. Micrel has the capability to produce up to 40,000 wafers/month. Sophisticated measurement equipment is used to monitor and record line widths, particle levels, film thickness, and other important parameters; final electrical characterization of the wafer test die is provided by automated test equipment.

Micrel has combinations of design, process and foundry services that are sure to fit your exact needs. There are a number of options from which you can select. Each choice is designed to match your specific situation or requirements to the appropriate Micrel solution:

Foundry: Micrel duplicates your process.

R&D Foundry: Micrel develops a new process to meet your unique need.

Semicustom Foundry: Micrel's technology, your design, Micrel's process.

Custom Foundry: Your circuit, Micrel's technology, design and process.

Full Service Foundry: Your specification, Micrel's design, technology, process, test and packaging.

Micrel's Process Advantage

When you choose Micrel for your wafer fabrication needs, you get a foundry capable of providing engineering support for your product's design, process, production, packaging and reliability requirements. The same technical staff that has made Micrel IC products world-renowned for innovation, quality and performance is available to assist you in evaluating your circuit design, process recipe or test system for your semiconductor devices.

Two examples of the Micrel foundry commitment to service are Computer-Aided Design (CAD) support and customized test patterns. SPICE parameters are available on floppy disk to aid your design and simulation efforts. Micrel CAD support helps you with often overlooked details including proper placement of alignment marks and scribe lines. Micrel can also order your masks from the mask vendor and ensure that they are built correctly. Unlike most foundries, Micrel will match your layout rules or design requirements with a customized wafer test pattern. This gives you many practical advantages:

- Yield Improvement/Process Development. Custom test structures, equipped with Spreading Resistance Profile (SRP) bars and optimized for your particular product, streamline data collection and provide accurate characterization data.
- Correlation with Simulations. Personalized test patterns provide custom geometry devices that can confirm CAD models. Breadboarding and reliability testing are other benefits.

Statistical Process Control

You have a choice in selecting the classification and quality standards to which your devices are manufactured. All foundry wafer runs receive the same statistical process control (SPC) as used for Micrel commercial ICs (SPC1). Higher reliability SPC2 and SPC3 is available upon request. You may also select upgrades to Industrial Class B, Military Class S or Class B (MIL-STD-883), or custom production requirements designed to your particular specification definitions.

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Ethernet Products

Micrel is a leader in Ethernet technology for the SOHO networking technology markets (small office/home office environments). In addition, our Ethernet products are consistently used in Wireless, VoIP, Industrial Ethernet, and other such applications. Offered are numerous field-proven, multi-port products in a variety of packages, as well as unmanaged and managed switches for everything from embedded Ethernet and cyber-apartment applications to products that connect wired and wireless copper and fiber systems. Micrel's portfolio of Ethernet products operate over commercial and industrial temperature ranges, and are available in a series of environmentally friendly, lead-free products.

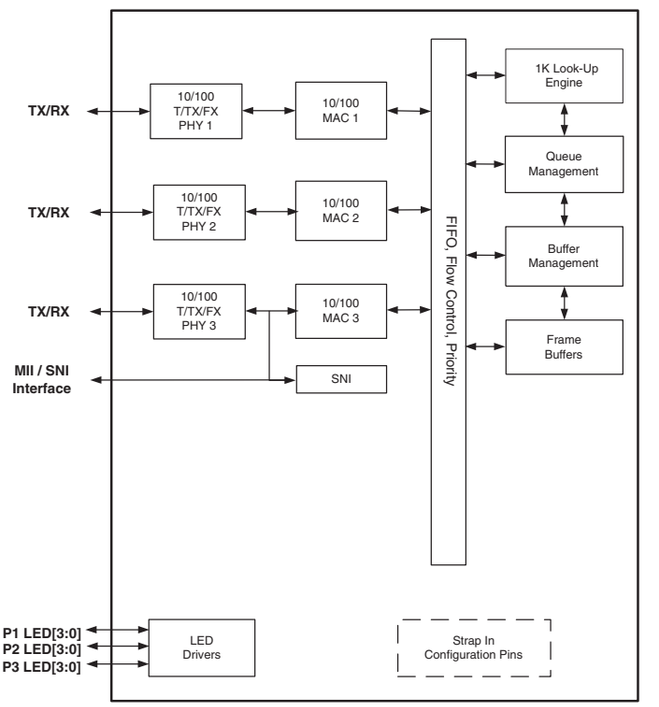
Our unique mixed-signal architecture allows for dynamic adjustments to line conditions while significantly reducing the power and circuitry required. Others in the industry use bulky samplers and signal processors to achieve the same goal. The net difference is that the Micrel solution uses less silicon to provide the same functionality. Less silicon translates into reduced power consumption. Micrel's physical layer (PHY) components, such as the KS8721 family, use an analog section that completely eliminates the need for analog-to-digital converters and DSPs.

Micrel's switches, MACs and PHYs are used in a large number of products such as desktop and notebook computers, media converters, network printers, set-top boxes, game consoles, IP phones and SOHO switches, routers and firewalls, to name but a few. Ethernet has been used traditionally in corporate data networks, but now it is also moving media along with data. Voice and video are quickly being integrated into data networks.

KS8993
3-Port 10/100 Switch with Transceivers and Frame Buffers

Key Features

- 3-Port 10/100 Ethernet switch with three MACs and three PHYs fully compliant to IEEE 802.3u standard
- 10BaseT, 100BaseTX and 100BaseFX modes of operation on all three ports
- Non-blocking switch fabric assures fast packet delivery by utilizing a 1K MAC Address lookup table and a store-and-forward architecture
- Full duplex IEEE 802.3x flow control (Pause) with force mode option
- Half duplex back pressure flow control
- MII interface supports both MAC mode and PHY mode
- 7-wire SNI support for legacy MAC
- Comprehensive LED Indicator support for link, activity, full/half duplex and 10/100 speed
- I/0 pins strapping and configuration
- Far_End_Fault detection in 100BaseFX mode
- IEEE 802.1p/q tag insertion or removal on a per port basis (egress)
- QoS/CoS packets prioritization support
- Per-port, 802.1p
- Split transmit queue priority
- Low power dissipation: <750mW (includes PHY transmit drivers)
  – Voltage: Single 2.5V power supply
- Available at commercial and industrial temperatures (KS8993I)
- Available in 128-pin PQFP



KS8993

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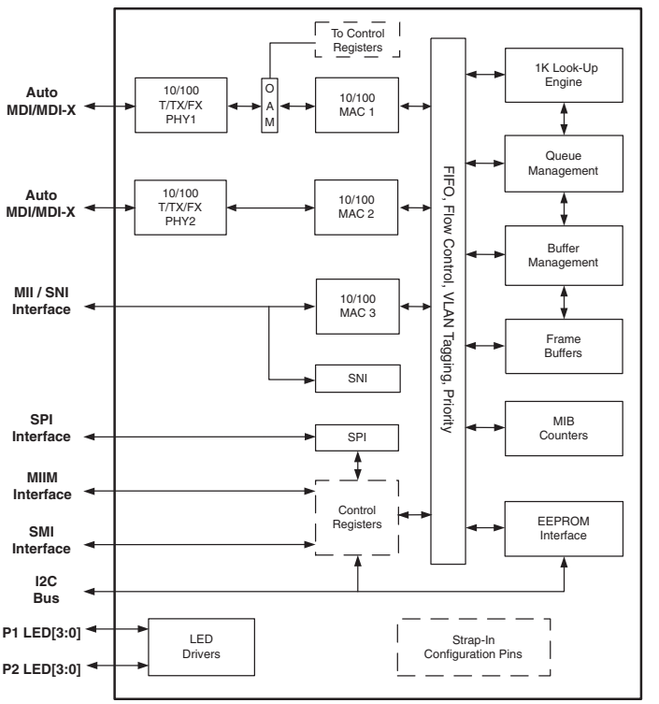
KS8993F
Single Chip Fast Ethernet Media Converter

Key Features

- Proven 2nd generation of Integrated 3-Port 10/100 Ethernet Switch with three MACs and two PHYs fully compliant to IEEE 802.3u standard
  - Non-blocking switch fabric assures fast packet delivery by utilizing a 1K MAC Address lookup table and a store-and-forward architecture
  - Full-duplex IEEE 802.3x flow control (Pause) with force mode option
  - Half-duplex back pressure flow control
  - Automatic MDI/MDIX crossover with disable and enable option
  - 100BaseFX support on port 1
  - MII interface supports both MAC mode and PHY mode
  - 7-wire SNI support for legacy MAC
  - Comprehensive LED Indicator support for link, activity, full/half duplex and 10/100 speed
- OAM features
  - Supports OAM sub-layer which conforms to TS-1000 specification from TTC Japan (5/23/2002)
  - Sends and receives OAM frame to center or terminal side
  - Loop back modes to support loop back packet from center side to terminal side
  - Far-End Fault detection with disable and enable
  - Link Transparency to indicate the link down from link partner
- Comprehensive Configuration Register access
  - SMI (Serial Management Interface) to all internal registers
  - MIIM (MII Management Interface) to PHY registers
  - SPI and I2C Interface to all internal registers
  - I/0 pins strapping and EEPROM to program selective registers in unmanaged switch mode
  - Control registers configurable on-the-fly (port-priority, 802.1p/d/q, AN...)
- QoS/CoS packets prioritization support
  - Per-port, 802.1p and DiffServ based
  - Re-mapping of 802.1p priority field on a per-port basis
- Advanced switch features
  - IEEE 802.1q VLAN support for up to 16 groups (full-range of VLAN ID)
  - VLAN ID tag/untag options, per-port basis
  - IEEE 802.1p/q tag insertion or removal on a per-port basis (egress)
  - Programmable Rate Limiting from 0Mbps to 100 Mbps at the ingress and egress port, rate options for high and low priority, per-port basis
  - Broadcast storm protection with percent control (global and per-port basis)
  - IEEE 802.1d Spanning Tree Protocol support
  - Upstream special tagging mode to inform the processor on which ingress port a packet is received
  - IGMP v1/v2 snooping support for multicast packet filtering
  - Double tagging support
- Switch management features:
  - Port mirroring/monitoring/sniffing: ingress and/or egress traffic to any port or MII
  - MIB (Management Information Base) counters for fully compliant statistics gathering, 34 MIB counters per port
  - Loop back modes for remote diagnostic of failure
- Low power dissipation: <800mW (includes PHY transmit drivers)
  - Full-chip hardware power-down (register configuration not saved)
  - Per-port based software power-save on PHY (idle link detection, register configuration preserved)
  - 0.18µm CMOS technology
  - Voltages:
    - Core 1.8V
    - I/O and transceiver: 3.3V or 2.5V
- Industrial temperature (available Q1 2004)
- Available in 128-pin PQFP



KS8993F

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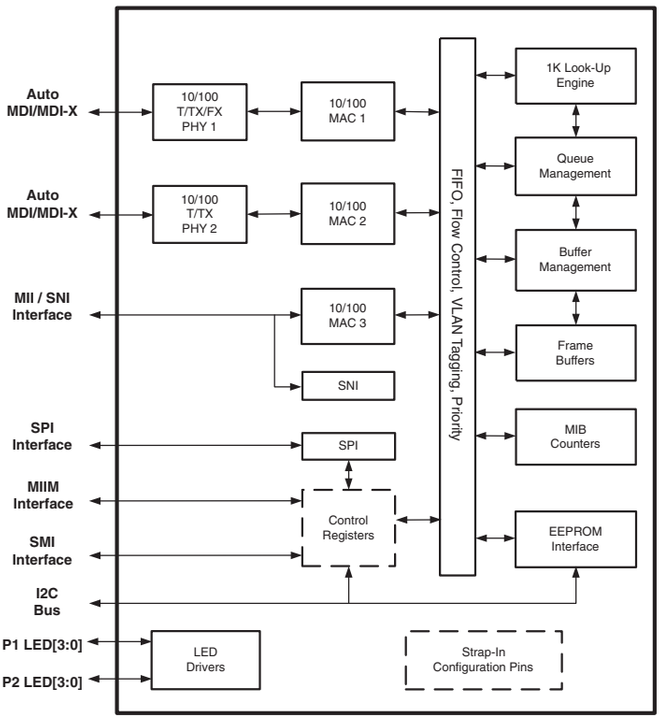
KS8993M
3-Port (2+1) Integrated Fast Ethernet Managed Switch

Key Features

- Proven 2nd generation of Integrated 3-Port 10/100 Ethernet Switch with three MACs and two PHYs fully compliant to IEEE 802.3u standard
  - Non-blocking switch fabric assures fast packet delivery by utilizing a 1K MAC Address lookup table and a store-and-forward architecture
  - Full-duplex IEEE 802.3x flow control (Pause) with force mode option
  - Half-duplex back pressure flow control
  - Automatic MDI/MDIX crossover with disable and enable option
  - 100BaseFX support on port 1
  - MII interface supports both MAC mode and PHY mode
  - 7-wire SNI support for legacy MAC
  - Comprehensive LED Indicator support for link, activity, full/half duplex and 10/100 speed
- Comprehensive Configuration Register access
  - SMI (Serial Management Interface) to all internal registers
  - MIIM (MII Management Interface) to PHY registers
  - SPI and I2C Interface to all internal registers
  - I/0 pins strapping and EEPROM to program selective registers in unmanaged switch mode
  - Control registers configurable on the fly (port-priority, 802.1p/d/q, AN...)
- QoS/CoS packets prioritization support
  - Per-port, 802.1p and DiffServ based
  - Re-mapping of 802.1p priority field per-port basis
- Advanced Switch Features
  - IEEE 802.1q VLAN support for up to 16 groups (full-range of VLAN ID)
  - VLAN ID tag/untag options, per-port basis
  - IEEE 802.1p/q tag insertion or removal on a per-port basis (egress)
  - Programmable Rate Limiting from 0Mbps to 100 Mbps at the ingress and egress port, rate options for high and low priority, per-port basis
  - Broadcast storm protection with percent control (global and per-port basis)
  - IEEE 802.1d Spanning Tree Protocol support
  - Upstream special tagging mode to inform the processor on which ingress port a packet is received
  - IGMP v1/v2 snooping support for multicast packet filtering
  - Double tagging support
- Switch management features:
  - Port mirroring/monitoring/sniffing: ingress and/or egress traffic to any port or MII
  - MIB (Management Information Base) counters for fully compliant statistics gathering, 34 MIB counters per port
  - Loop back modes for remote diagnostic of failure
- Low power dissipation: < 800mW (includes PHY transmit drivers)
  - Full-chip hardware power-down (register configuration not saved)
  - Per-port based software power-save on PHY (idle link detection, register configuration preserved)
  - 0.18µm CMOS technology
  - Voltages:
    - Core 1.8V
    - I/O and transceiver: 3.3V or 2.5V
- Industrial temperature (available Q1 2004)
- Available in 128-pin PQFP



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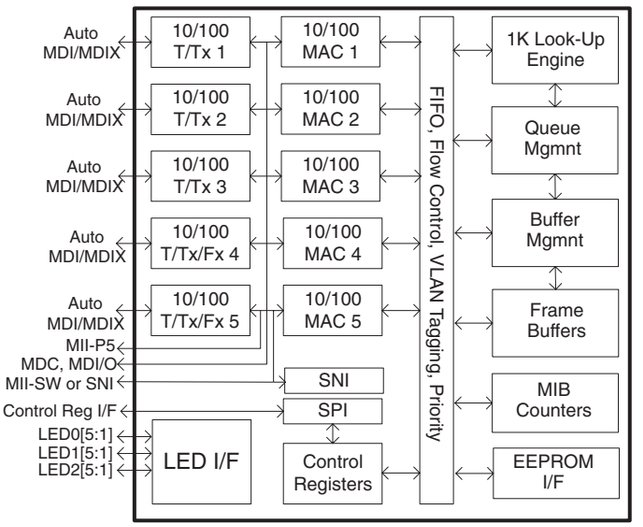
KS8995MA
Integrated 5-Port 10/100 Managed Switch

Key Features

- ***New!*** Only 2 voltage supplies required (2.5V and 3.3V)
- ***New!*** Pin strap-in option for auto MDI/MDIX disable
- ***New!*** PHY power save mode
- Integrated switch with five MACs and five Fast Ethernet transceivers fully compliant to IEEE 802.3u standard
- Dual MII configuration: MII-Switch (MAC or PHY mode MII) and MII-P5 (PHY mode MII)
- IEEE 802.1q tag-based VLAN (16 VLANs, full-range VID) for DMZ port, WAN/LAN separation or inter-VLAN switch links
- VLAN ID tag/untag options, per-port basis
- Programmable rate limiting 0Mbps to 100Mbps, ingress and egress port, rate options for high an low priority, per-port basis
- Integrated MIB counters for fully compliant statistics gathering, 34 MIB counters per-port
- Enable/disable option for huge frame size up to 1916 bytes per frame
- IGMP v1/v2 snooping for multicast packet filtering
- Special tagging mode to send CPU info on ingress packet's port value
- SPI slave (complete) and MDIO (MII PHY only) serial management interface for control of register configuration
- Control registers configurable on-the-fly (port-priority, 802.1p/d/q, AN...)
- 802.1d Spanning Tree Protocol
- Per-port based software power-save on PHY (idle link detection, register configuration preserved)
- QoS/CoS packets prioritization supports: per port, 802.1p and DiffServ based
- MDC and MDI/O interface support to access the MII PHY control registers (not all control registers)
- Comprehensive LED support
- Automatic MDI/MDI-X crossover for plug-and-play
- Available at commercial and industrial temperatures
- Available in 128-pin PQFP
- Recommended for new designs

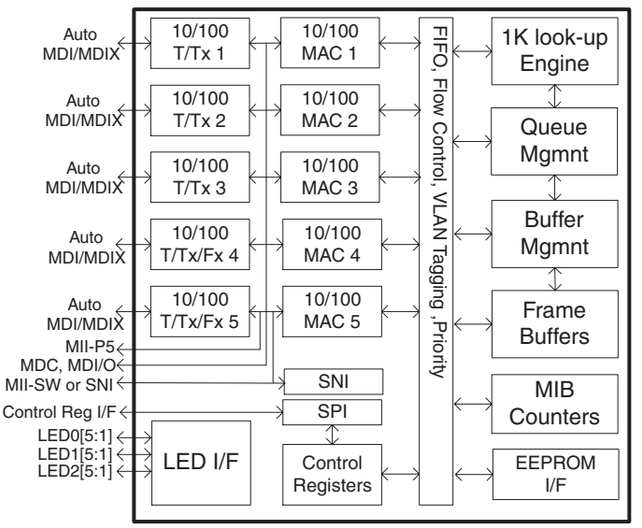


KS8995MA

KS8995M
Integrated 5-Port 10/100 Managed Switch

Key Features

- Integrated switch with five MACs and five Fast Ethernet transceivers fully compliant to IEEE 802.3u standard
- Dual MII configuration: MII-Switch (MAC or PHY mode MII) and MII-P5 (PHY mode MII)
- IEEE 802.1q tag-based VLAN (16 VLANs, full-range VID) for DMZ port, WAN/LAN separation or inter-VLAN switch links
- VLAN ID tag/untag options, per-port basis
- Programmable rate limiting 0Mbps to 100Mbps, ingress and egress port, rate options for high an low priority, per port basis
- Integrated MIB counters for fully compliant statistics gathering, 34 MIB counters per-port
- Enable/disable option for huge frame size up to 1916 bytes per frame
- IGMP v1/v2 snooping for multicast packet filtering
- Special tagging mode to send CPU info on ingress packet's port value
- SPI slave (complete) and MDIO (MII PHY only) serial management interface for control of register configuration
- Control registers configurable on-the-fly (port-priority, 802.1p/d/q, AN...)
- 802.1d Spanning Tree Protocol
- Per-port based software power-save on PHY (idle link detection, register configuration preserved)
- QoS/CoS packets prioritization supports: per-port, 802.1p and DiffServ based
- MDC and MDI/O interface support to access the MII PHY control registers (not all control registers)
- Comprehensive LED support
- Automatic MDI/MDIX crossover for plug-and-play
- 1.8V for VCC core and 3.3V for I/O
- Available at commercial and industrial temperatures
- Available in 128-pin PQFP



KS8995M

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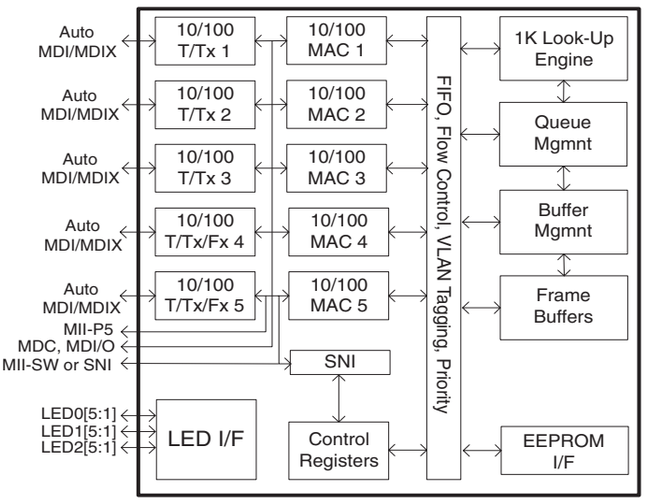
KS8995XA
Integrated 5-Port 10/100 QoS Switch

Key Features

- ***New!*** Only 2 voltage supplies required (2.5V and 3.3V)
- ***New!*** Pin strap-in option for auto MDI/MDIX disable
- ***New!*** PHY power save mode
- Integrated switch with five MACs and five Fast Ethernet transceivers fully compliant to IEEE 802.3u standard
- Dual MII configuration: MII-Switch (MAC or PHY mode MII) and MII-P5 (PHY mode MII)
- VLAN ID tag/untag options, per-port basis
- Enable/disable option for huge frame size up to 1916 bytes per frame
- Broadcast storm protection with percent control — global and per-port basis
- Full-chip hardware power-down supports (register configuration not saved)
- QoS/CoS packets prioritization supports: per-port, 802.1p and DiffServ based
- 802.1p/q tag insertion or removal on a per-port basis (egress)
- Port-based VLAN support
- MDC and MDI/O interface supports to access the MII PHY control registers (not all control registers)
- Automatic address learning, address aging and address migration
- 7-wire SNI support for legacy MAC interface
- Automatic MDI/MDIX crossover for plug-and-play
- Available in 128-pin PQFP
- Recommended for new designs

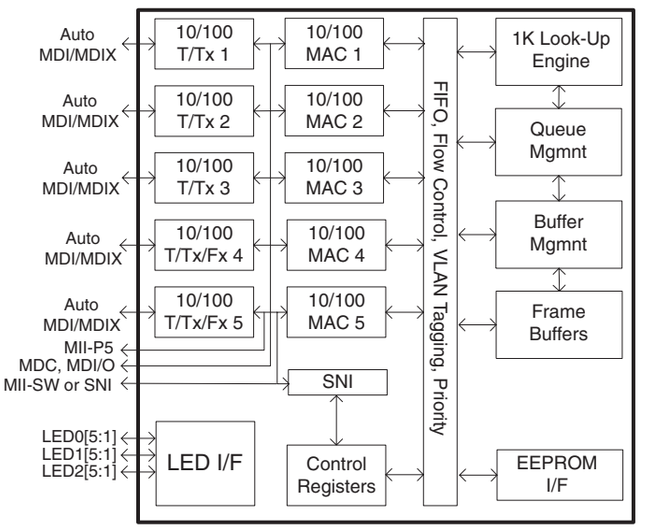


KS8995XA

KS8995X
Integrated 5-Port 10/100 QoS Switch

Key Features

- Integrated switch with five MACs and five Fast Ethernet transceivers fully compliant to IEEE 802.3u standard
- Dual MII configuration: MII-Switch (MAC or PHY mode MII) and MII-P5 (PHY mode MII)
- VLAN ID tag/untag options, per-port basis
- Enable/disable option for huge frame size up to 1916 bytes per frame
- Broadcast storm protection with percent control — global and per-port basis
- Full-chip hardware power-down supports (register configuration not saved)
- Per-port based software power-save on PHY (idle link detection, register configuration preserved)
- QoS/CoS packets prioritization supports: per port, 802.1p and DiffServ based
- 802.1p/q tag insertion or removal on a per port basis (egress)
- Port-based VLAN support
- MDC and MDI/O interface supports to access the MII PHY control registers (not all control registers)
- Automatic address learning, address aging and address migration
- 7-wire SNI support for legacy MAC interface
- 1.8V for VCC core and 2.5V and 3.3V Analog for I/O
- Automatic MDI/MDIX crossover for plug-and-play
- Available in lead-free package (KSZ8995X)
- Available in 128-pin PQFP



KS8995X

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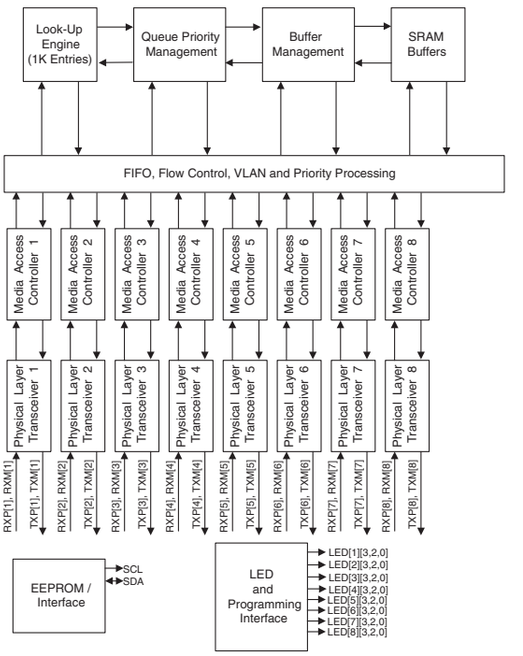
KS8997
8-Port 10/100 Integrated Switch with PHY and Frame Buffers

Key Features

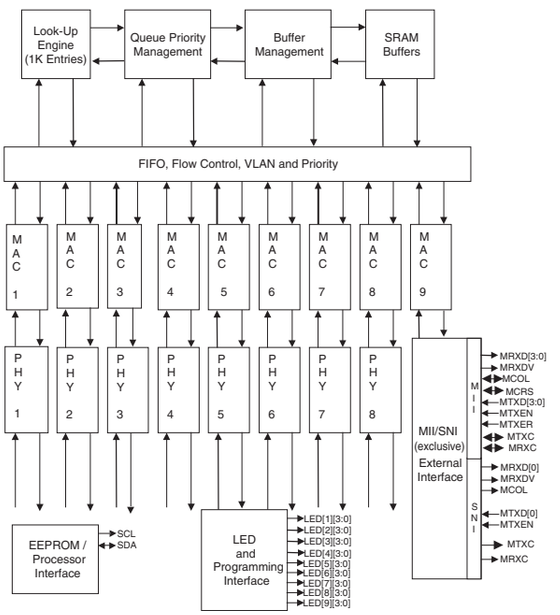
- 8-port 10/100 integrated switch with physical layer transceivers
- SRAM on chip for frame buffering
- 1.4Gbps high performance memory bandwidth
- 10BaseT, 100BaseTX and 100BaseFX modes of operation
- Superior analog technology for reduced power and die size
- Single 2.1V power supply
- 500mA (1.25W) including physical transmit drivers
- Supports port-based VLAN
- Supports DiffServ priority, 802.1p based priority or port-based priority
- Supports for UTP or fiber installations
- Indicators for link, activity, full/half duplex and speed
- Unmanaged operation via strapping at system reset time
- Hardware based 10/100, full/half, flow control and auto negotiation
- Individual port forced modes (full-duplex, 100BaseTX) when auto negotiation is disabled
- Wire-speed reception and transmission
- Integrated address look-up engine, supports 1K absolute MAC address
- Automatic address learning, address aging and address migration
- Broadcast storm protection
- Full-duplex IEEE 802.3x flow control
- Half-duplex back pressure flow control
- Comprehensive LED support
- Supports MDI/MDIX auto crossover



KS8999
9-Port 10/100 Integrated Switch with PHY and Frame Buffers

Key Features

- 9-port 10/100 integrated switch with 8 physical layer transceivers
- SRAM on chip for frame buffering
- 2.0Gbps high performance memory bandwidth
- 10BaseT, 100BaseTX and 100BaseFX modes of operation
- Superior analog technology for reduced power and die size
- Single 2.1V power supply
- 900mA (1.80W) including physical transmit drivers
- Supports port based VLAN
- Supports DiffServ priority, 802.1p based priority or port-based priority
- Supports for UTP or fiber installations
- Indicates for link, activity, full/half, duplex and speed
- Unmanaged operation via strapping or EEPROM at system reset time
- Hardware-based 10/100 full/half, flow control and auto negotiation
- Individual port forced modes (full-duplex, 100BaseTX) when auto negotiation is disabled
- Wire-speed reception and transmission
- Integrated address look-up engine, supports 1K absolute MAC address
- Automatic address learning, address aging and address migration
- Broad storm protection
- Full-duplex IEEE 802.3x flow control
- Half-duplex back pressure flow control
- Comprehensive LED support
- External MAC interface (MII or SNI) for router applications
- Supports MDI/MDIX auto crossover
- Available at commercial and industrial temperatures
- Available in 208-pin PQFP



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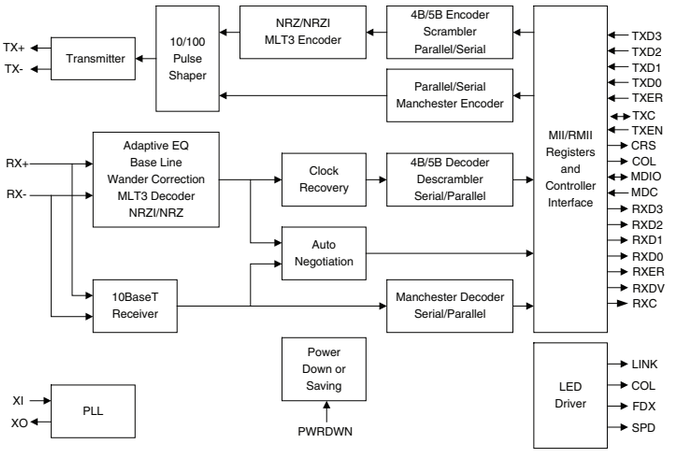
KS8721B/BT/BL/SL/SLI
Low Power 10/100 PHY Transceivers

Key Features

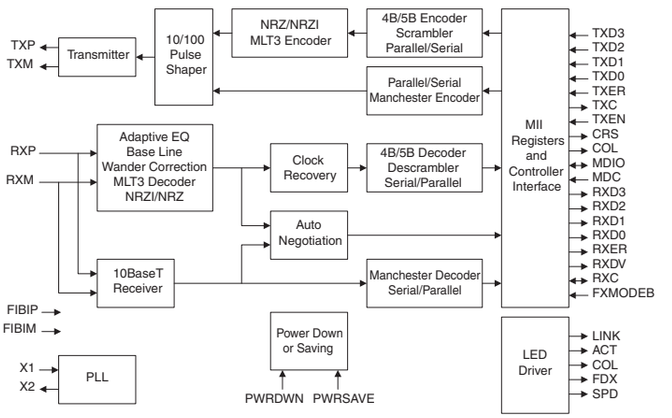
- Single chip 100BaseTX/100BaseFX/10BaseT physical layer solution
- 2.5V CMOS design, power consumption <200mW (excluding output driver current)
- Fully compliant to IEEE 802.3u standard
- Supports Media Independent Interface (MII) and Reduced MII (RMII)
- Supports 10BaseT, 100BaseTX and 100BaseFX with Far_End_Fault detection
- Supports power-down mode and power-saving mode
- Configurable through MII serial management ports or via external control pins
- Supports auto-negotiation and manual selection for 10/100Mbps speed and full/half-duplex mode
- On-chip built-in analog front end filtering for both 100BaseTX and 10BaseT
- LED outputs for link, activity, full/half-duplex, collision and speed
- Supports back to back FX to TX for media converter applications
- Supports MDI/MDIX auto crossover
- 2.5V/3.3V tolerance on I/O
- Single 3.3V supply option
- Available in lead-free packages (KSZ8721B and KSZ8721BT)
- Available in Industrial temperature (–40°C to +85°C) range (KS8721SLI)
- Available in 48-pin SSOP and TQFP



KS8737
3.3V 10/100BaseTX/FX MII Physical Layer Transceiver

Key Features

- Single chip 100BaseTX/100BaseFX/10BaseT physical layer solution
- 3.3V CMOS design, 70mA operating current (excluding transmit output driver current)
- Fully compliant to IEEE 802.3u standard
- Supports MII (Media Independent Interface) mode
- Supports 10BaseT, 100BaseTX and 100BaseFX Fibre Channel with Far_End_Fault detection
- Supports power-down and power-saving modes
- Configurable through MII serial management ports or via external control pins
- Supports auto-negotiation and manual selection for 10Mbps or 100Mbps speeds
- Supports auto-negotiation and manual selection for full- and half-duplex modes
- Standard CSMA/CD or full-duplex operation at 10Mbps or 100Mbps
- On-chip built-in filtering for both 100BaseTX and 10BaseT
- LED outputs for link, activity, full/half-duplex, collision and speed
- Available in 64-pin TQFP surface mount package



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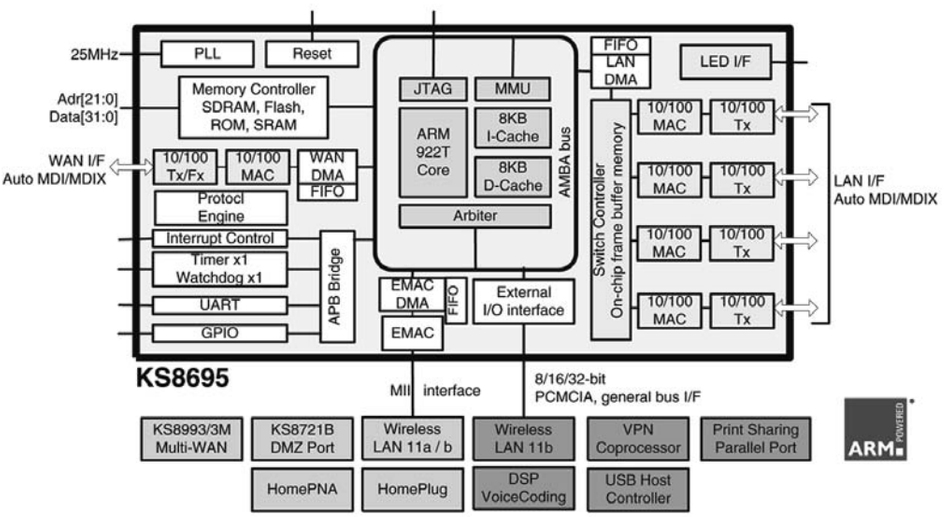
CENTAUR KS8695
Integrated Multi-Port Gateway Solution

Key Features

- The CENTAUR KS8695, featuring XceleRouter™ technology, is a single-chip multi-port Gateway-on-a-Chip with all the key components integrated for a high-performance and low-cost broadband gateway
- ARM922T high-performance CPU core
  - 185 MIPS ARM922T core at 166MHz
  - 8KB I-cache and 8KB D-cache
  - Memory Management Unit (MMU) for Linux®
  - 32-bit ARM and 16-bit thumb instruction sets
- XceleRouter™ technology
  - TCP/UDP/IP packet header checksum generation to offload CPU tasks
  - IPv4 packet filtering on checksum errors
  - Automatic error packet discard
- Integrated switch engine and transceivers:
  - Five 10/100 transceivers and MACs (1P for WAN interface, 4P for LAN switching)
  - 100BaseTX, 10BaseT and 100BaseFX modes (FX in the WAN port)
  - On-chip SRAM as frame buffer memory
  - Wire-speed switching
  - VLAN ID and 802.1p tag/untag options
  - Extensive MIB counter management support
  - IGMP snooping for multicast packet filtering
  - Port-based VLAN
  - QoS/CoS packet prioritization support: per-port, 802.1p and DiffServ based
  - 802.1d Spanning Tree Protocol
  - Dedicated 1K-entry look-up engine
  - Automatic MDI/MDIX crossover on all ports
  - Port mirroring/monitoring/sniffing
  - Broadcast storm protection with percent control
  - Full- and half-duplex flow control
- Memory and external I/O interfaces
  - 8/16/32-bit wide shared data path for SDRAM, ROM/SRAM/flash and external I/O
  - Total memory space up to 64MB
  - Intel®/AMD-type flash support
- WAN/LAN/EMAC DMA Engines and FIFO
  - DMA engine with burst mode support for efficient WAN, LAN and EMAC data transfers
  - FIFOs for back-to-back packet transfers
- Peripheral support
  - One MII interface (MAC or PHY mode)
  - 8/16/32-bit external I/O interface supporting PCMCIA or generic CPU/DSP host I/F
  - Eight general-purpose input/output (GPIO)
  - Two 32-bit timer counters (one watchdog)
  - Interrupt controller
  - ARM922T JTAG debug interface
- Power management
  - Reduced CPU and system clock speeds
- System design
  - 208-pin PQFP package
  - Up to 166MHz CPU and 125MHz bus speed
- Reference HW/SW evaluation kit
  - Hardware evaluation board (passes class B EMI)
  - Board support package including firmware source codes, Linux® kernel, software stacks
  - Documentation for design and programming



Peripheral Options and Examples

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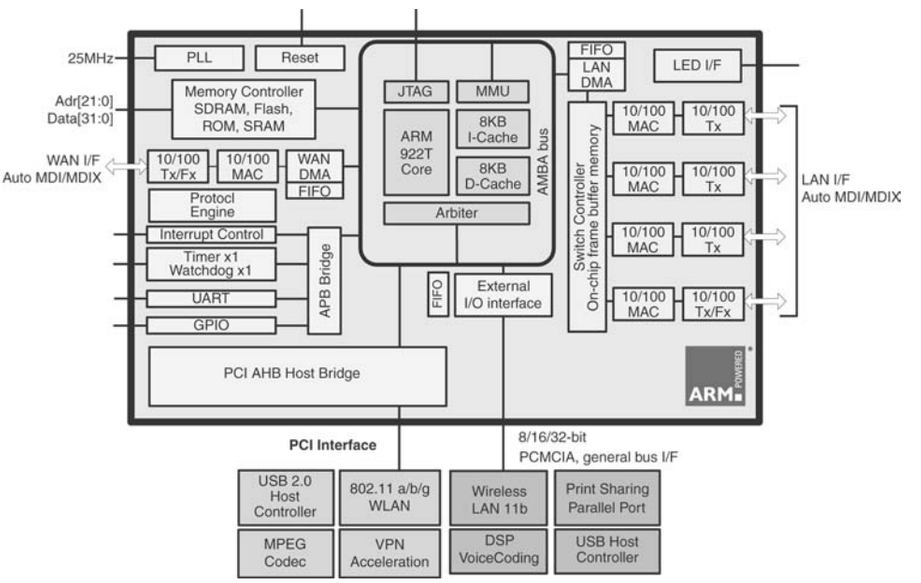
KS8695P
Integrated Multi-Port PCI Gateway Solution

Key Features

- ARM922T high-performance CPU core
  - 185 MIPS ARM922T core at 166MHz
  - 8KB I-cache and 8KB D-cache
  - MMU (Memory Management Unit) for Linux® and WinCE™
  - 32-bit ARM™ and 16-bit thumb instruction sets
- 33MHz 32-bit PCI Interface
  - PCI 2.1
  - Supports bus mastership or guest mode
  - Supports normal and memory mapped I/O
  - Support for single PCI/up to three miniPCI/Cardbus interfaces
- Integrated Ethernet Transceivers and Switch Engine:
  - Five 10/100 Ethernet transceivers and MACs
  - 100BaseFX mode option on the WAN port and 1 LAN Port
  - Automatic MDI/MDIX crossover, all ports
  - Wire-speed, non-blocking switch technology
  - 64KB On-chip frame buffer SRAM
  - 802.1q tag-based VLAN (16 VLANs, full-range VID) and port-based VLAN
  - QoS/CoS packet prioritization support: per-port, 802.1p and DiffServ based
  - VLAN ID and 802.1p tag/untag opt. per port
  - 802.1d Spanning Tree Protocol Support
  - Programmable rate-limiting per-port, 0Mbps to 100Mbps, ingress and egress, rate options for high and low priority, 32Kbps increments
  - Extensive MIB counter management support
  - IGMP snooping for multicast packet filtering
  - Dedicated 1K-entry look-up engine
  - Port mirroring/monitoring/sniffing
  - Broadcast storm protection with percent control global and per-port basis
  - Full- and half-duplex flow control
- XceleRouter™ technology
  - TCP/UDP/IP packet header checksum generation to offload CPU tasks
  - IPv4 packet filtering on checksum errors
  - Automatic error packet discard
- WAN/LAN DMA Engines and FIFOs
  - DMA engine with burst mode support for efficient WAN, LAN data transfers
  - FIFOs for back-to-back packet transfers
- Memory and external I/O Interfaces
  - 8/16/32-bit wide shared data path for SDRAM/ROM/SRAM/flash and external I/O
  - Total memory space up to 64MB
  - Intel®/AMD-type flash support
- Peripheral support
  - 8/16/32-bit external I/O interface supporting PCMCIA or generic CPU/DSP host I/F
  - Sixteen general-purpose I/O (GPIO)
  - Two 32-bit timer counters (one watchdog)
  - Interrupt controller
- System design
  - 289 PBGA package (19mm×19mm) saves board space
  - Two power supplies: 1.8V core and Ethernet RX supply, 3.3V I/O and Ethernet TX supply
  - Built-in LED controls
- Debugging
  - ARM922T JTAG debug interface
  - UART for console port or modem back up
- Power management
  - CPU and system clock speed step-down options
  - Low power ethernet transceivers
  - Per-port power-down and ethernet transmit disable
- Reference HW/SW evaluation kit
  - Hardware evaluation board
  - Board support package including firmware, source code
  - Documentation for design and programming
  - Complete hardware and software reference designs are available



Peripheral Options and Examples

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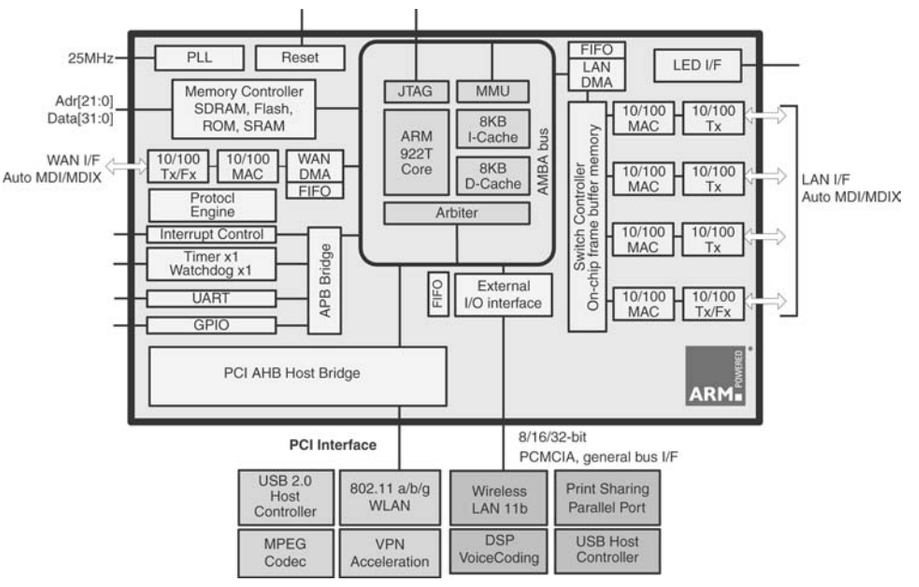
KS8695PX
Integrated Multi-Port Single PCI Gateway Solution

Key Features

- ARM922T high-performance CPU core
  - 185 MIPS ARM922T core at 166MHz
  - 8KB I-cache and 8KB D-cache
  - MMU (Memory Management Unit) for Linux® and WinCE™
  - 32-bit ARM™ and 16-bit thumb instruction sets
- 33MHz 32-bit PCI Interface
  - PCI 2.1
  - Supports bus mastership or guest mode
  - Supports normal and memory mapped I/O
  - Support for sinlge PCI/up to three miniPCI/Cardbus interfaces
- Integrated Ethernet Transceivers and Switch Engine:
  - Five 10/100 Ethernet transceivers and MACs
  - 100BaseFX mode option on the WAN port and 1 LAN Port
  - Automatic MDI/MDIX crossover, all ports
  - Wire-speed, non-blocking switch technology
  - 64KB On-chip frame buffer SRAM
  - 802.1q tag-based VLAN (16 VLANs, full-range VID) and port-based VLAN
  - QoS/CoS packet prioritization support: per-port, 802.1p and DiffServ based
  - VLAN ID and 802.1p tag/untag opt. per port
  - 802.1d Spanning Tree Protocol Support
  - Programmable rate-limiting per-port, 0Mbps to 100Mbps, ingress and egress, rate options for high and low priority, 32Kbps increments
  - Extensive MIB counter management support
  - IGMP snooping for multicast packet filtering
  - Dedicated 1K-entry look-up engine
  - Port mirroring/monitoring/sniffing
  - Broadcast storm protection with percent control global and per-port basis
  - Full- and half-duplex flow control
- XceleRouter™ technology
  - TCP/UDP/IP packet header checksum generation to offload CPU tasks
  - IPv4 packet filtering on checksum errors
  - Automatic error packet discard
- WAN/LAN DMA engines and FIFOs
  - DMA engine with burst mode support for efficient WAN, LAN data transfers
  - FIFOs for back-to-back packet transfers
- Memory and external I/O Interfaces
  - 8/16/32-bit wide shared data path for SDRAM/ROM/SRAM/flash and external I/O
  - Total memory space up to 64MB
  - Intel®/AMD-type flash support
- Peripheral support
  - 8/16/32-bit external I/O interface supporting PCMCIA or generic CPU/DSP host I/F
  - Sixteen general-purpose I/O (GPIO)
  - Two 32-bit timer counters (one watchdog)
  - Interrupt controller
- System design
  - 289 PBGA package (19mm×19mm) saves board space
  - Two power supplies: 1.8V core and Ethernet RX supply, 3.3V I/O and Ethernet TX supply
  - Built-in LED controls
- Debugging
  - ARM922T JTAG debug interface
  - UART for console port or modem back up
- Power management
  - CPU and system clock speed step-down options
  - Low power ethernet transceivers
  - Per port power down and ethernet transmit disable
- Reference HW/SW evaluation kit
  - Hardware evaluation board
  - Board support package including firmware, source code
  - Documentation for design and programming
  - Complete hardware and software reference designs are available



Peripheral Options and Examples

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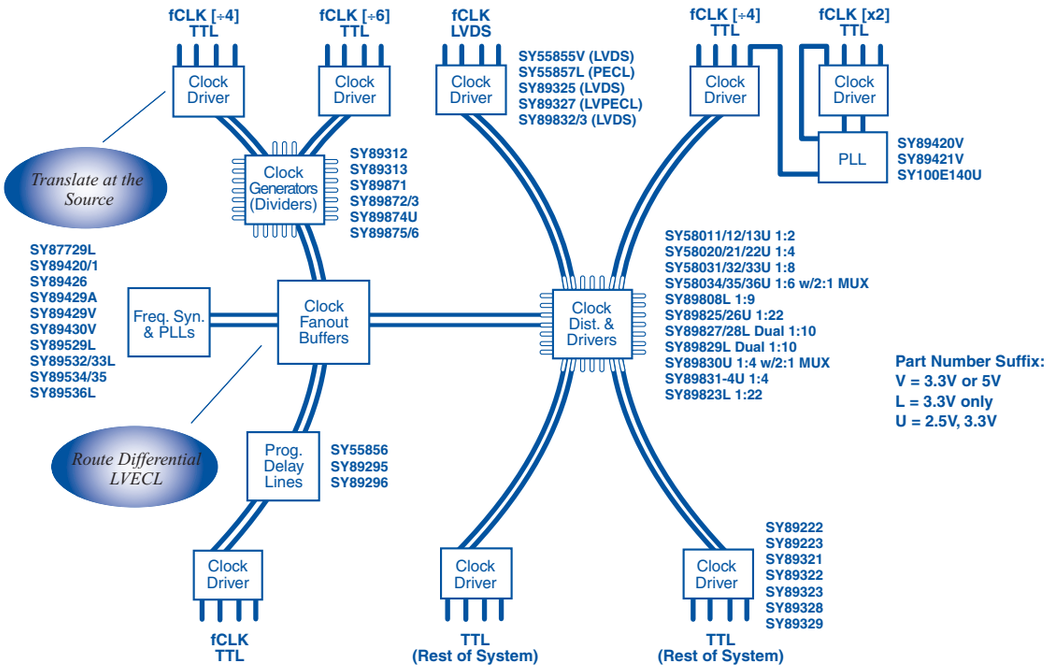
Precision Edge™ Products

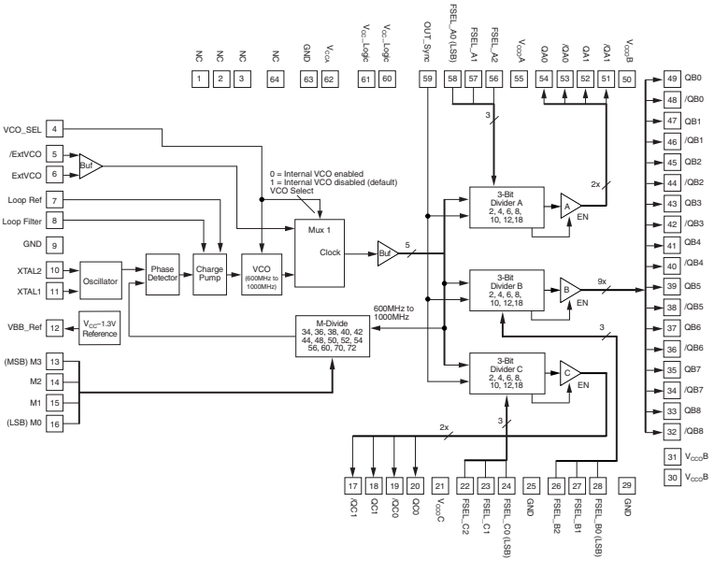
Micrel's Precision Edge™ product family includes precision frequency synthesizers, clock distribution and translation, multiplexers, and crosspoint switches, and high-speed gates for the most stringent, timing-critical applications. All of Micrel's Precision Edge™ products are designed to provide the lowest skew and jitter solutions available.



SY89532L
3.3V, 500MHz Programmable Synthesizer w/Three Independent Output Banks

Key Features

- Integrated synthesizer plus fanout buffers, clock drivers, and translator in a single 64-pin package
- 3.3V ±10% power supply
- Low jitter: <50ps cycle-to-cycle
- Low pin-to-pin skew: <50ps
- 33MHz to 500MHz output frequency range
- Direct interface to crystal: 14MHz to 18MHz
- LVPECL output (SY89532L), LVPECL/LVDS outputs (SY89533L)
- TTL/CMOS compatible control logic
- 3 independently programmable output frequency banks:
  - 9 differential output pairs @BankB (LVPECL/LVDS)
  - 2 differential output pairs @BankA (LVPECL)
  - 2 differential output pairs @BankC (LVPECL)
- ExtVCO input allows synthesizer and crystal interface to be bypassed
- Available in 64-pin EPAD-TQFP



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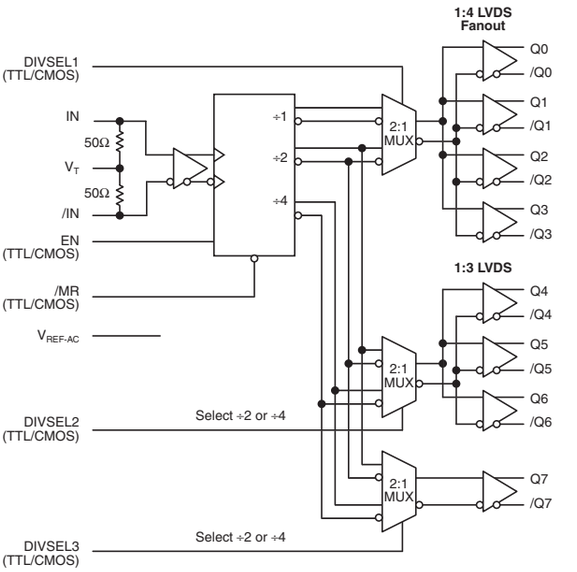
SY89200U

2.5V, Ultra-Low Jitter, 1:8 LVDS Fanout with Three ÷1/÷2/÷4 Clock Divider Output Banks

Key Features

- Three low-skew LVDS output banks with programmable ÷1, ÷2 and ÷4 divider options
- Three independently programmable output banks
- Guaranteed AC performance over temperature and voltage:
  - Accepts a clock frequency up to 1.5GHz
  - <900ps propagation delay
  - <150ps rise/fall time
  - <50ps bank-to-bank phase offset
- <1ps$_{rms}$ random jitter
- <10ps$_{pk-pk}$ total jitter (clock)
- Internal input termination
- Unique input termination and VT pin accepts DC- coupled and AC-coupled inputs (CML, PECL, LVDS)
- LVDS compatible outputs
- CMOS/TTL compatible output enable (EN) and divider select control
- 2.5V ±5% power supply
- –40°C to +85°C temperature range
- Available in 32-pin (5×5mm) MLF™ package

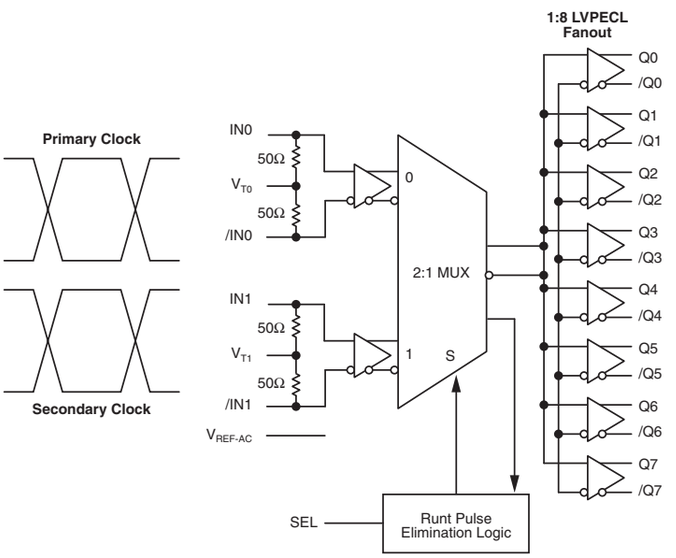


SY89837U

Low Jitter, Precision 1:8 LVPECL Fanout Buffer with 2:1 Runt Pulse Eliminator Input MUX

Key Features

- Selects between two clocks, and provides eight precision, low skew LVPECL output copies
- Guaranteed AC performance over temperature and supply voltage:
  - Wide operating frequency: 1kHz to >1.5GHz
  - <975ps in-to-out propagation delay
  - <180ps rise/fall time
  - <40ps output-to-output skew
- Unique input isolation design minimizes crosstalk
- Ultra-low jitter design:
  - <1ps$_{rms}$ random jitter
  - <1ps$_{rms}$ cycle-to-cycle jitter
  - <10ps$_{pk-pk}$ total jitter (clock)
  - <0.7ps$_{rms}$ MUX crosstalk induced jitter
- Unique input termination and VT pin accepts DC-coupled and AC–coupled inputs (CML, PECL, LVDS)
- 800mV LVPECL output swing
- Power supply 2.5V ±5% or 3.3V ±10%
- –40°C to +85°C temperature range
- Available in 32-pin (5×5mm) MLF™ package



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Frequency Synthesizers

Part Number	Description	Input Logic	Output Logic	Supply Voltage	Input Freq. Range	Output Freq. Range/ Data Rate
SY87729L	3.3V AnyClock™ Fractional-N Synthesizer	XTAL	PECL	3.3V	27MHz	10–365MHz
SY87739L	3.3V AnyClock™ Fractional-N Synthesizer	XTAL	PECL	3.3V	27MHz	10–729MHz
SY89426	5V SONET OC-12/OC-3 Clock Synthesizer	TTL	PECL	5V	33–77MHz	622.08/155.52MHz
SY89429A	5V Programmable Frequency Synthesizer	PECL	PECL	5V	16MHz	25–400MHz
SY89429V	5V/3.3V Programmable Frequency Synthesizer	XTAL	PECL	5V/3.3V	16MHz	25–400MHz
SY89430V	5V/3.3V 950MHz Programmable Frequency Synthesizer	XTAL	PECL	5V/3.3V	16MHz	50–950MHz
SY89529L	3.3V 200MHz Synthesizer w/Spread Spectrum	XTAL	LVPECL	3.3V	14–18MHz	200MHz
SY89532L	3.3V 500MHz Programmable Synthesizer w/Three Independent Output Banks	XTAL	LVPECL	3.3V	14–18MHz	33–500MHz
SY89533L	3.3V 500MHz Programmable Synthesizer w/Three Independent Output Banks	XTAL	LVPECL/LVDS	3.3V	14–18MHz	33–500MHz
SY89534L	3.3V 500MHz Programmable Synthesizer w/Three Independent Output Banks	REF	LVPECL	3.3V	14–160MHz	33–500MHz
SY89535L	3.3V 500MHz Programmable Synthesizer w/Three Independent Output Banks	REF	LVPECL/LVDS	3.3V	14–160MHz	33–500MHz
SY89536L	3.3V 500MHz Programmable Synthesizer w/Three Independent Output Banks	REF	LVPECL/HSTL	3.3V	14–160MHz	33–500MHz

Phase-Locked Loops

Part Number	Description	Input Logic	Output Logic	Input Freq. Range	Output Freq. Range/ Data Rate
SY89420V	Dual Phase-Locked Loop	PECL	PECL	10–666MHz	10–666MHz
SY89421V	High-Performance Phase-Locked Loop	PECL	PECL	10–666MHz	10–666MHz

Clock Generators/Dividers

Part Number	Description	Input Logic	Output Logic	Supply Voltage	Max. Input Freq.
SY89871U *New!*	Two Output Banks w/Matched Delay ÷1, 2, 4, 8, 16	Any Diff. Input	LVPECL	3.3V/2.5V	>2.5GHz
SY89872U *New!*	Two Output Banks w/Matched Delay ÷1, 2, 4, 8, 16	Any Diff. Input	LVDS	2.5V	>1.7GHz
SY89873L *New!*	Two Output Banks w/Matched Delay ÷1, 2, 4, 8, 16	Any Diff. Input	LVDS	3.3V	>1.7GHz
SY89874U *New!*	÷1, 2, 4, 8, 16 w/1:2 Fanout, Ultra-Low Jitter	Any Diff. Input	LVPECL	3.3V/2.5V	>2.5GHz
SY89875U *New!*	÷1, 2, 4, 8, 16 w/1:2 Fanout, Ultra-Low Jitter	Any Diff. Input	LVDS	2.5V	>1.7GHz
SY89876L *New!*	÷1, 2, 4, 8, 16 w/1:2 Fanout, Ultra-Low Jitter	Any Diff. Input	LVDS	3.3V	>1.7GHz
SY89312V *New!*	÷2 Divider in Ultra-Small (2×2mm) 8-pin MLF™	PECL	PECL	5V/3.3V	>700MHz
SY89313V *New!*	÷4 Divider in Ultra-Small (2×2mm) 8-pin MLF™	PECL	PECL	5V/3.3V	>700MHz
SY89200U *New!*	Ultra-low Jitter, ÷1, 2, 4, Three Output Banks w/Fanout	Any Diff. Input	LVDS	2.5V	>1.5GHz
SY100S834L	(÷1, ÷2, ÷4) or (÷2, ÷4, ÷8) Clock Generation	PECL	PECL	3.3V	>700MHz
SY100S838L	(÷1, ÷2/3) or (÷2, ÷4/6) Clock Generation	PECL	PECL	3.3V	>700MHz
SY100S839V	(÷2/4) or (÷4/5/6) Clock Generation	PECL	PECL	5V/3.3V	>700MHz

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Clock Distribution/Fanout Buffers

Part Number	Fanout	Input	Output	Supply Voltage	Within Device Skew (ps)	Total Jitter[1] (ps_{p-p})	f_{max}	Max t_r/t_f (ps)
SY58011U	1:2	Any Diff IN, Internal Termination[2]	CML	2.5V - 3.3V	<15	<10	>7GHz	<60
SY58012U	1:2	Any Diff IN, Internal Termination[2]	LVPECL	2.5V - 3.3V	<15	<10	>5GHz	<110
SY58013U	1:2	Any Diff IN, Internal Termination[2]	400mV LVPECL	2.5V - 3.3V	<15	<10	>6GHz	<80
SY89311U	1:2	LVPECL	LVPECL	2.5V - 5V	<15	<10	>3GHz	<200
SY58020U	1:4	Any Diff IN, Internal Termination[2]	CML	2.5V - 3.3V	<15	<10	>6GHz	<60
SY58021U	1:4	Any Diff IN, Internal Termination[2]	LVPECL	2.5V - 3.3V	<15	<10	>4GHz	<110
SY58022U	1:4	Any Diff IN, Internal Termination[2]	400mV LVPECL	2.5V - 3.3V	<15	<10	>5.5GHz	<80
SY89830U	1:4 w/ 2:1 MUX	ECL, (LV)PECL, HSTL	(LV)ECL, (LV)PECL	2.5V - 5V	<25	<10	>2.5GHz	<225
SY89831U	1:4	Any Diff IN, Internal Termination[2]	LVPECL	2.5V - 3.3V	<20	<10	>2.5GHz	<250
SY89832U	1:4	Any Diff IN, Internal Termination[2]	LVDS	2.5V	<20	<10	>2GHz	<200
SY89833L	1:4	Any Diff IN, Internal Termination[2]	LVDS	3.3V	<20	<10	>2GHz	<190
SY89834U	1:4 w/ 2:1 MUX	LVTTL, CMOS	LVPECL	2.5V - 3.3V	<20	<10	>2GHz	<250
SY89837U	1:8	Any Diff IN, Internal Termination[2]	LVPECL	2.5V - 3.3V	<40	<10	>1GHz	<200
SY58031U	1:8	Any Diff IN, Internal Termination[2]	CML	2.5V - 3.3V	<15	<10	>7GHz	<60
SY58032U	1:8	Any Diff IN, Internal Termination[2]	LVPECL	2.5V - 3.3V	<15	<10	>4GHz	<110
SY58033U	1:8	Any Diff IN, Internal Termination[2]	400mV LVPECL	2.5V - 3.3V	<15	<10	>6GHz	<80
SY58034U	1:6 w/ 2:1 MUX	Any Diff IN, Internal Termination[2]	CML	2.5V - 3.3V	<15	<10	>7GHz	<60
SY58035U	1:6 w/ 2:1 MUX	Any Diff IN, Internal Termination[2]	LVPECL	2.5V - 3.3V	<15	<10	>5GHz	<110
SY58036U	1:6 w/ 2:1 MUX	Any Diff IN, Internal Termination[2]	400mV LVPECL	2.5V - 3.3V	<15	<10	>7GHz	<80
SY89808L	1:9	LVPECL, HSTL	HSTL	3.3V, 1.8V	<25	<20	>500 MHz	<400
SY89823L	1:22	LVPECL, HSTL	HSTL	3.3V, 1.8V	<50	<20	>500 MHz	<700
SY89825U	1:22 w/ 2:1 MUX	LVPECL, LVDS (w/int term)	LVPECL	2.5 - 3.3V	<35	<20	>2.0GHz	<600
SY89826L	1:22 w/ 2:1 MUX	LVPECL, LVDS (w/int term)	LVDS	3.3V	<50	<20	>1.0GHz	<400
SY89827L	Dual 1:10 w/ 2:1 MUX	PECL and HSTL	HSTL	3.3V	<50	<20	>500MHz	<700
SY89828L	Dual 1:10 w/ 2:1 MUX	LVPECL, LVDS (w/int term)	LVDS	3.3V	<50	<20	>1.0GHz	<400
SY89829U	Dual 1:10 w/ 2:1 MUX	LVPECL, LVDS (w/int term)	LVPECL	2.5 - 3.3V	<35	<20	>2.0GHz	<600

Notes:

1. Total Jitter (TJ) definition: with an ideal clock input source of frequency ≤ f_{MAX}, no more than one output edge in 10^{12} output edges will deviate by the specified peak-to-peak jitter value.
2. Unique internal input termination and extended CMVR accepts DC- and AC-coupled inputs (CML, LVPECL, LVDS, or HSTL).

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Skew Management Solutions

Part Number	Description	Guaranteed Max. Throughput	Input Logic	Output Logic	Supply Voltage
SY55856U	2.5GHz Differential 2-Channel Precision CML Delay Line	2.5GHz	CML	CML	3.3V/2.5V
SY89295U *New!*	2.5GHz Programmable Delay Line	2.5GHz	LVPECL	LVPECL	3.3V/2.5V
SY89296U *New!*	2.5GHz Programmable Delay Line w/Fine Tune Output	2.5GHz	LVPECL	LVPECL	3.3V/2.5V
SY10/100EP195V	2.5GHz Programmable Delay Line	2.5GHz	PECL/TTL/CMOS	PECL	5V/3.3V
SY10/100EP196V	2.5GHz Programmable Delay Line w/Fine Tune Output Control	2.5GHz	PECL/TTL/CMOS	PECL	5V/3.3V

Translators

Part Number	Description	Input	Output	f_{MAX}	Supply Voltage	Package
Single-Ended-to-Differential Translation						
SY89222L	Dual	LVTTL/CMOS	LVPECL	600MHz	3.3V	8-MLF™
SY89322V	Dual	LVTTL/CMOS	LVPECL	800MHz	3.3V-5V	8-MLF™
SY89327L		Any Input	LVPECL	>2.5GHz	3.3V	8-MLF™
SY89328L	TX and RX Transceiver	LVTTL/CMOS	LVPECL	>275MHz	3.3V	8-MLF™
SY89329V		LVTTL/CMOS	LVPECL	350MHz	3.3V-5V	8-MLF™
SY89834U	1:4 Fanout and 2:1 Input MUX	LVTTL/CMOS	LVPECL	>2GHz	2.5V-3.3V	16-MLF™
SY55857L	Dual	Any Input	LVPECL	>2.5GHz	3.3V	10-MSOP
Differential-to-Single-Ended Translation						
SY89223L	Dual	LVPECL	LVTTL	>160MHz	3.3V	8-MLF™
SY89323L	Dual	LVPECL	LVTTL	>275MHz	3.3V	8-MLF™
SY89328L	TX and RX Transceiver	LVPECL	LVTTL	>275MHz	3.3V	8-MLF™
Differential-to-Differential Translation						
SY89325L	CML/LVPECL	LVDS		750MHz	3.3V	8-MLF™
SY89327L	CML/LVPECL/LVDS/SSTL	LVPECL		>2.5GHz	3.3V	8-MLF™
SY89831U	1:4 Fanout	Any Diff IN, Internal Termination(1)	LVPECL	>2.5GHz	2.5V-3.3V	16-MLF™
SY89832U	1:4 Fanout	Any Diff IN, Internal Termination(1)	LVDS	>2GHz	2.5V	16-MLF™
SY89833L	1:4 Fanout	Any Diff IN, Internal Termination(1)	LVDS	>2GHz	3.3V	16-MLF™
SY58011U	1:2 Fanout, Back-Terminated	Any Diff IN, Internal Termination(1)	CML	>7GHz	2.5V-3.3V	16-MLF™
SY58012U	1:2 Fanout	Any Diff IN, Internal Termination(1)	LVPECL	>5GHz	2.5V-3.3V	16-MLF™
SY58013U	1:2 Fanout	Any Diff IN, Internal Termination(1)	LVPECL (400mV)	>6GHz	2.5V-3.3V	16-MLF™
SY55855V	Dual	CML/LVPECL	LVDS	750MHz	3.3V-5V	10-MSOP
SY55857L	Dual	CML/LVPECL/LVDS/SSTL	LVPECL	>2.5GHz	3.3V	10-MSOP
SY58600U	Buffer/Translator	Any Diff IN, Internal Termination(1)	CML	>7GHz/10.7Gbps	2.5V-3.3V	8-MLF™
SY58601U	Buffer/Translator	Any Diff IN, Internal Termination(1)	LVPECL	>5GHz/5Gbps	2.5V-3.3V	8-MLF™
SY58602U	Buffer/Translator	Any Diff IN, Internal Termination(1)	400mV LVPECL	>7GHz/10.7Gbps	2.5V-3.3V	8-MLF™

Notes:

1. Unique internal input termination and extended CMVR accepts AC- or DC-coupled inputs (CML, LVPECL, LVDS, HSTL).

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MUX/DeMUX and Crosspoint Switches

Part Number	Description	Guaranteed Max. Throughput	Input Logic	Output Logic	Supply Voltage
SY58023U	Ultra-Low Jitter 2×2 Crosspoint w/Internal I/O Termination	10.7Gbps	Any Diff IN	CML	2.5V/3.3V
SY58024U	Ultra-Low Jitter Dual 2×2 Crosspoint w/Internal I/O Termination	10.7Gbps	Any Diff IN	CML	2.5V/3.3V
SY58040U	Ultra-Low Jitter 4×4 Crosspoint w/Internal I/O Termination	5Gbps	Any Diff IN	CML	2.5V/3.3V
SY55854U	2×2 Precision Crosspoint Switch	2.5Gbps	CML/PECL/LVPECL	CML	2.3V to 5.7V
SY55858U	Dual 2×2 CML Crosspoint Switch w/Internal I/O Termination	3Gbps	Any Diff IN	CML	5V/3.3V/2.5V
SY55859L	Dual 2×2 Crosspoint Switch	2.7Gbps	CML	CML	3.3V only
SY87724L	3.3V AnyRate® MUX/DeMUX	2.7Gbps	HSPC	HSPC	3.3V only
SY10/100E445	4-Bit Serial-to-Parallel Converter	NA	PECL	PECL	5V only
SY10/100E446	4-Bit Parallel-to-Serial Converter	NA	PECL	PECL	5V only

Buffers/Receivers

Part Number	Description	Input Logic	Output Logic	Supply Voltage
SY89206V	600Mbps Differential Buffer/Receiver in (2×2mm) MLF™	PECL/ECL	100k PECL/ECL	3.3V/5V
SY89216V	600Mbps Differential Buffer/Receiver in (2×2mm) MLF™	PECL/ECL	10k PECL/ECL	3.3V/5V
SY89306V	2.5Gbps Differential Buffer/Receiver in (2×2mm) MLF™	PECL/ECL	100k PECL/ECL	3.3V/5V
SY89307V	2.5Gbps Differential Buffer/Receiver with Programmable Output Swing	PECL/ECL	100k PECL/ECL	3.3V/5V
SY89316V	2.5Gbps Differential Buffer/Receiver in (2×2mm) MLF™	PECL/ECL	10k PECL/ECL	3.3V/5V
SY89311U	1:2 LVPECL Fanout Buffer in Ultra Small (2×2mm) MLF™	PECL/ECL	PECL/ECL	2.5V/3.3V/5V
SY58011U	>7GHz Any-Diff IN-to-CML 1:2 Fanout Buffer	Any Differential	400mV CML	2.5V/3.3V
SY58012U	>5GHz Any-Diff IN-to-LVPECL 1:2 Fanout Buffer	Any Differential	800mV LVPECL	2.5V/3.3V
SY58013U	>6GHz Any-Diff IN-to-LVPECL 1:2 Fanout Buffer	Any Differential	400mV LVPECL	2.5V/3.3V
SY58600U	>10.7Gbps Any Differential Input-to-CML Buffer	Any Differential	400mV CML	2.5V/3.3V
SY58601U	>5Gbps Any Differential Input-to-LVPECL Buffer	Any Differential	800mV LVPECL	2.5V/3.3V
SY58602U	>10.7Gbps Any Differential Input-to-LVPECL Buffer	Any Differential	400mV LVPECL	2.5V/3.3V
SY58620U	5Gbps Bidirectional Transceiver w/LOS	Any Differential	400mV CML	2.5V/3.3V
SY55855V	1.5Gbps Dual LVDS Buffer/Translator	LVDS/LVPECL	LVDS	3.3V/5V
SY55857L	Any Input-to-LVPECL Dual Buffer/Translator	Any Input	LVPECL	3.3V

High-Speed Gates

Part Number	Description	Input Logic	Output Logic	Supply Voltage
SY55851/851A	>3.0GHz Precision AnyGate® w/Matched Delay I/O	CML/LVPECL	CML	2.5V/3.3V
SY55852	>3.0GHz D Flip-Flop	PECL	PECL	5V only
SY55853	>3.0GHz D Latch	PECL	PECL	5V only
SY58051U	>10.7Gbps Ultra-low Jitter AnyGate®	Any Diff. Input	CML	2.5V/3.3V
SY58052U	>10.7Gbps Ultra-low Jitter Data/Clock Retimer (F/F)	Any Diff. Input	CML	2.5V/3.3V

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Communication Products

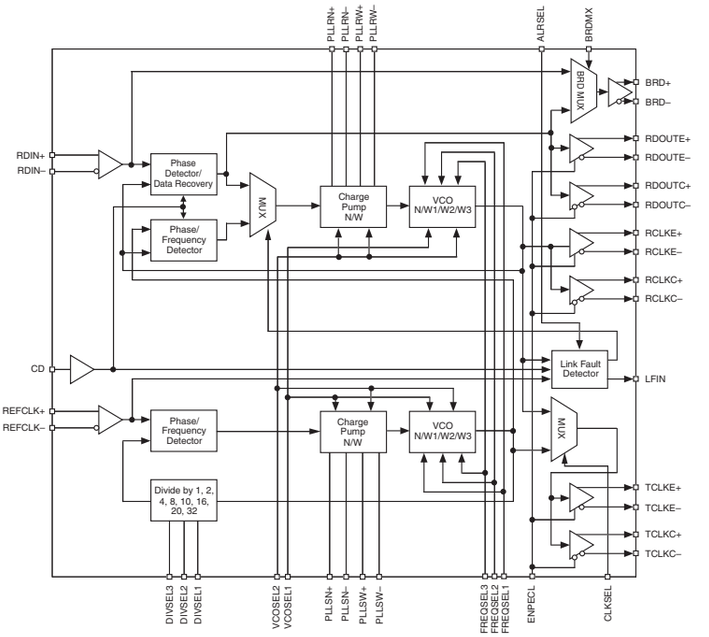
Micrel's communication products focus on the physical layer (PHY) of the high-speed networking and telecommunication markets. We supply products for high-speed serial data transmission and reception on copper and fiber optic mediums. These products include PMD products for optical modules, transceivers for copper and optical connectivity, clock and data recovery products, and serializer/deserializer (SerDes) or MUX/DeMUX devices.

Leveraging the PLL intellectual property developed in the Precision Edge™ family, Micrel has built communication products with extremely low jitter, easing the problem of meeting the tight requirements specified for sending information across the network.

SY87721L
3.3V 28Mbps – 2.7Gbps AnyRate® Clock and Data Recovery w/Integrated CMU

Key Features

- A clock and data recovery unit with integrated clock multiplier unit capable of frequency agile continuous frequency functionality — covers both standard-specific and custom/proprietary rates
- Integrated 28MHz–2.7GHz SONET compliant clock synthesizer PLL
- SONET/SDH OC-3, OC-12 and OC-48 with or without FEC, GbE, FC, 2xFC ESCON, HDTV, SMPTE 259, 292 compatible
- Single +3.3V power supply
- Differential CML outputs
- Selectable receiving data bypass path
- Glitchless RCLK under all conditions
- LFIN output loss of lock indicator
- 10,000ppm lock range with hysteresis
- Locks to GbE traffic using SONET oscillators
- Combine with SY87729L for Any-In/Any-Out capability from a single reference crystal
- Available in 64-pin EPAD-TQFP and pin compatible with SY87702L



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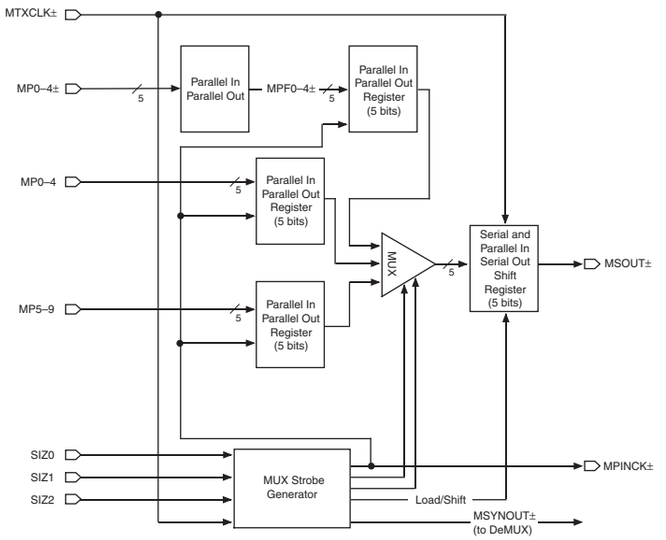
SY87724L
3.3V Up to 2.7GHz AnyRate® MUX/DeMUX

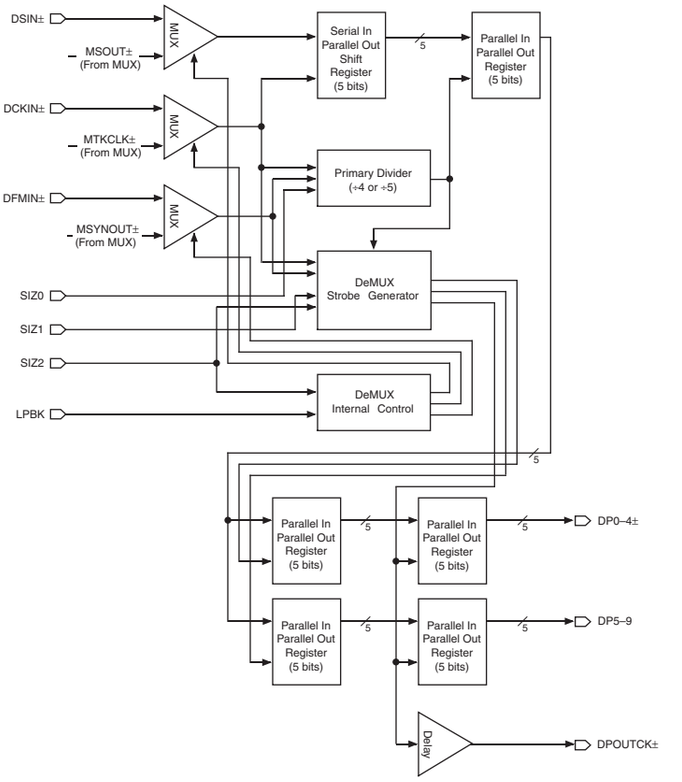
Key Features

- Integrated MUX and DeMUX function
- From DC to 2.7Gbps operation
- Programmable to 4, 5, 8, or 10 bits parallel interface
- Differential CML, and PECL clock and data outputs
- Available in 80-pin EPAD-TQFP

MUX



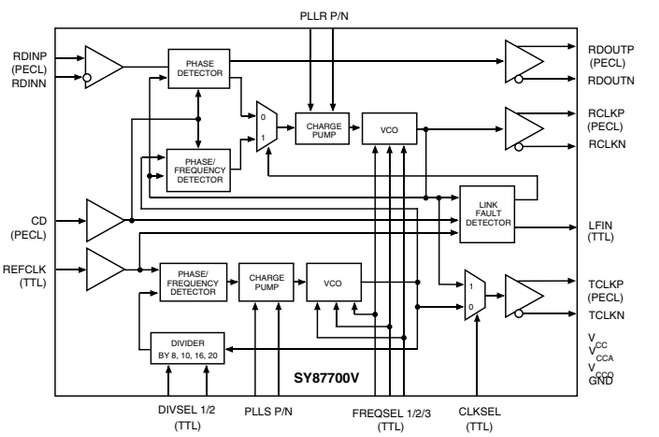
DeMUX



SY87700V
5V/3.3V 32-175Mbps AnyRate® Clock and Data Recovery

Key Features

- A clock and data recovery unit with integrated clock multiplier capable of frequency agile functionality — covers both standard-specific and custom/proprietary rates
- 5V/3.3V power supply option
- Clock and data recovery and clock generation from 32Mbps up to 175Mbps (NRZ data stream for recovery)
- SONET/SDH/ATM compliant
- Two on-chip PLLs:
  - Clock generation
  - Clock recovery
- Selectable reference frequencies
- Line receiver input: no external buffering needed
- Complies with Bellcore, ITU/CCITT and ANSI specs for applications such as OC-1, OC-3, ATM, FDDI, etc.
- Available in 32-pin EPAD-TQFP and 28-pin EPAD-SOIC



SY87700L

- Same as above
- 3.3V power supply option
- Industrial temperature range from –40°C to +85°C

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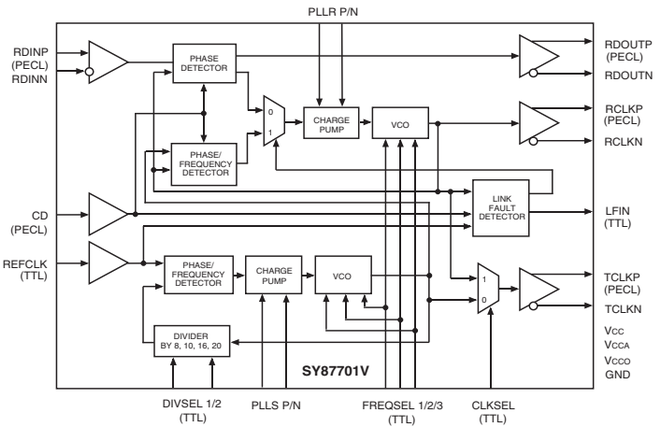
SY87701V
5V/3.3V 32Mbps – 1.2Gbps AnyRate® Clock and Data Recovery

Key Features

- A clock and data recovery unit with integrated clock multipler capable of frequency agile functionality — covers both standard-specific and custom/proprietary rates
- 5V/3.3V power supply option
- Clock and data recovery and clock generation from 32Mbps up to 1.25Gbps (NRZ data stream for recovery)
- SONET/SDH/ATM, Fibre Channel, GbE, ESCON, and SMTE 259 compliant
- Two on-chip PLLs:
  - Clock generation
  - Clock recovery
- Selectable reference frequencies
- Line receiver input: no external buffering needed
- Complies with Bellcore, ITU/CCITT and ANSI specs for applications such as OC-1, OC-3, OC-12, ATM, FDDI, etc.
- Available in 32-pin EPAD-TQFP and 28-pin EPAD-SOIC packages



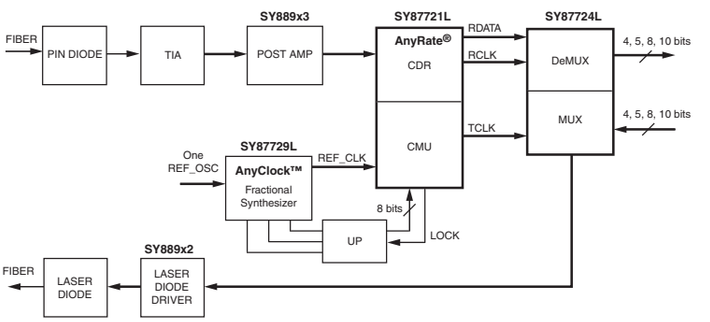
SY87701L

- Same as above
- 3.3V power supply option
- Industrial temperature range from –40°C to +85°C

SY87729L/SY87739L
3.3V 10MHz – 729MHz Fractional-N Synthesizer

Key Features

- Fractional synthesizer from 10MHz to 365MHz from a single 27MHz reference oscillator
- Generates exactly the correct frequency for common transport protocols with or without FEC
- Directly enables SY87721L to lock onto any data rate within its range
- Exceeds BellCore and ITU jitter generation specifications
- Programmable via MicroWire™ interface
- Available in 32-Pin EPAD-TQFP package



SY87739L

- Pin-compatible with SY87729L
- Generates only output frequency from 10MHz to 729MHz from a single 27MHz reference oscillator

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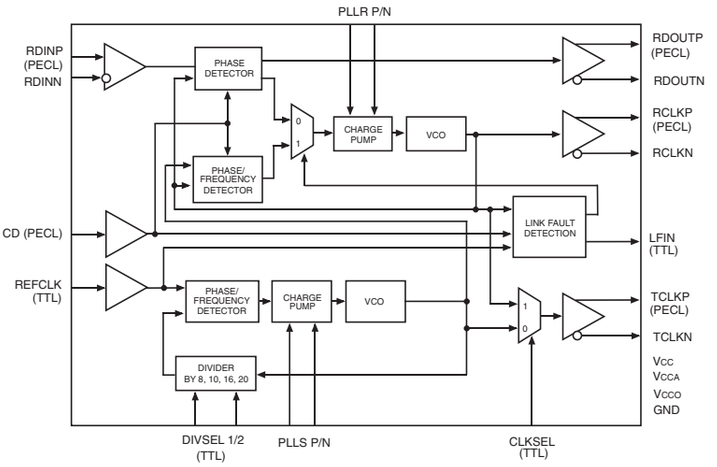
SY69753L
3.3V 155Mbps Clock and Data Recovery

Key Features

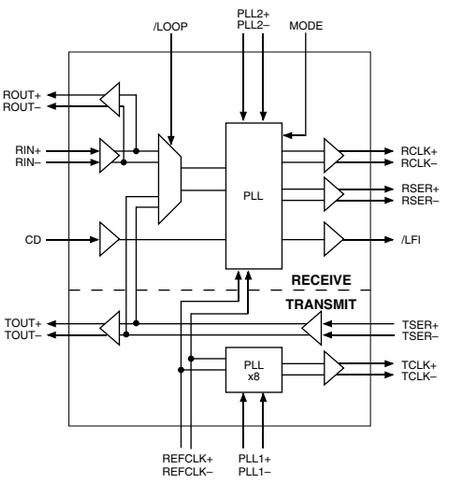
- 155Mbps OC-3/STS-3 clock and data recovery
- Pin compatible with SY87700L
- Proprietary architecture at 135Mbps to 180Mbps
- 3.3V power supply
- Industrial temperature range from –40°C to +85°C
- Available in 32-pin EPAD-TQFP



SY69952
51Mbps/155Mbps Clock and Data Recovery

Key Features

- A complete single-chip transmitter and receiver
- Supports clock recovery and generation for 51.84Mbps or 155.52Mbps NRZ or NRZI data stream
- Complies with Bellcore, CCITT and ANSI specs
- Compatible with VLSI VN67200 and IgT WAC-413-A ATM Quad UNI Processors
- Available in 28-pin SOIC package



CDRs with Integrated Clock Synthesis

Part Number	Description	Output Range	Features
SY87700V	5V/3.3V 32-175Mbps AnyRate® Clock and Data Recovery	32–175Mbps	Two PLLs on-chip for clock generation and clock recovery
SY87700L	3.3V 32-175Mbps AnyRate® Clock and Data Recovery	32–175Mbps	Two PLLs on-chip for clock generation and clock recovery
SY87701V	5V/3.3V 32-1250Mbps AnyRate® Clock and Data Recovery	32Mbps–1.25Gbps	Two PLLs on-chip for clock generation and clock recovery
SY87701L	3.3V 32-1250Mbps AnyRate® Clock and Data Recovery	32Mbps–1.25Gbps	Two PLLs on-chip for clock generation and clock recovery
SY87721L	3.3V 28Mbps-2.7Gbps AnyRate® Clock and Data Recovery	28Mbps–2.7Gbps	Two PLLs on-chip for clock generation and clock recovery
SY69753L	3.3V OC-3 155Mbps Clock and Data Recovery	155Mbps	Two PLLs on-chip for clock generation and clock recovery

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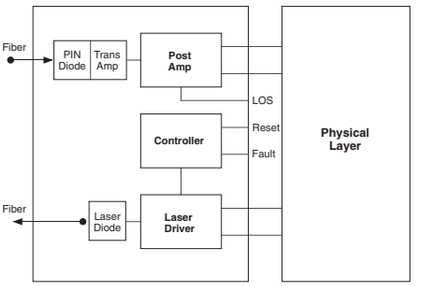
Fiber Optic Modules

Micrel offers the best solution for Fiber Optic Transceiver modules because it provides the smallest footprint and the best performance at very low cost. The complete module solution includes: laser driver, controller and post amplifier functions. The chips are available in MSOP (3×3mm), MLF™ (2×2mm), (3×3mm) and (5×5mm) packages. The optimized partition gives you low noise, a clean "eye pattern" and the smallest footprint overall.



Laser Drivers

Part Number	Drive Current (mA)	Rate (bps)	V_{CC}	Package
SY88912L	60	up to 3.2G	3.3V	16-pin MLF™ (3×3mm)
SY88932L	60	up to 3.2G	3.3V	16-pin MLF™ (3×3mm)
SY100EP16VS	25	up to 2.5G	3.3V/5V	8-pin MSOP (3×3mm), 8-pin SOIC
SY10EP16V	25	up to 2.5G	3.3V/5V	8-pin MSOP (3×3mm), 8-pin SOIC
SY88922	25	up to 2.5G	5V	10-pin MSOP (3×3mm)
SY88922V	30	up to 2.5G	3.3V/5V	10-pin MSOP (3×3mm)
SY88927V	25	up to 2.5G	3.3V/5V	8-pin MSOP (3×3mm), 8-pin SOIC
SY88952L	90	up to 2.5G	3.3V	32-pin MLF™ (3×3mm)
SY10/100EL16V	25	up to 1.25G	3.3V/5V	8-pin MSOP (3×3mm), 8-pin SOIC
SY100EL16VS	25	up to 1.25G	3.3V/5V	8-pin MSOP (3×3mm), 8-pin SOIC
SY89307V ***New!***	25	up to 1.25G	3.3V/5V	8-pin MLF™ (2×2mm)
SY88902	25	up to 1.25G	5V	10-pin MSOP (3×3mm)
SY88702	25	up to 622M	5V	10-pin MSOP (3×3mm)
SY88722V	30	up to 622M	3.3V/5V	10-pin MSOP (3×3mm)
SY88802	25	up to 155M	5V	10-pin MSOP (3×3mm)
SY88822V	30	up to 155M	3.3V/5V	10-pin MSOP (3×3mm)

Controllers

Part Number	Description
MIC3000 ***New!***	Optical Transceiver Management
MIC3001 ***New!***	SFP (Small Form Factor Pluggable) Management with Internal Calibration
SY88905	Laser Diode Controller with Automatic Power Control

Post Amplifier

Part Number	Rate (bps)	Data Output	V_{CC}	LOS/SD Output	Package
SY88953L	up to 10.7G	CML	3.3V	TTL SD, LOS	16-pin MLF™ (3×3mm)
SY88773V ***New!***	up to 3.2G	CML	3.3V/5V	TTL LOS	10-pin EPAD-MSOP (3×3mm), 16-pin MLF™ (3×3mm)
SY88843V ***New!***	up to 3.2G	CML	3.3V/5V	TTL SD	10-pin EPAD-MSOP (3×3mm), 16-pin MLF™ (3×3mm)
SY88923AV	up to 3.2G	PECL	3.3V/5V	TTL LOS	10-pin EPAD-MSOP (3×3mm)
SY88973V ***New!***	up to 3.2G	CML	3.3V/5V	TTL LOS	10-pin EPAD-MSOP (3×3mm), 16-pin MLF™ (3×3mm)
SY88983V	up to 3.2G	CML	3.3V/5V	TTL SD	10-pin MSOP (3×3mm), 16-pin MLF™ (3×3mm)
SY88993AV	up to 3.2G	CML	3.3V/5V	TTL LOS	10-pin MSOP (3×3mm)
SY88993V	up to 3.2G	CML	3.3V/5V	TTL LOS	10-pin MSOP (3×3mm)
SY88923	up to 2.5G	PECL	5V	TTL LOS	10-pin MSOP (3×3mm)
SY88923V	up to 2.5G	PECL	3.3V/5V	TTL LOS	10-pin MSOP (3×3mm)
SY88943V	up to 2.5G	PECL	3.3V/5V	TTL SD	10-pin MSOP (3×3mm)
SY88903	up to 1.25G	PECL	5V	TTL LOS	10-pin MSOP (3×3mm)
SY88903V	up to 1.25G	PECL	3.3V/5V	TTL LOS	10-pin MSOP (3×3mm)
SY88913	up to 1.25G	PECL	5V	PECL SD	10-pin MSOP (3×3mm)
SY88913V	up to 1.25G	PECL	3.3V/5V	PECL SD	10-pin MSOP (3×3mm)
SY88703V	up to 622M	PECL	3.3V/5V	TTL LOS	10-pin MSOP (3×3mm)
SY88713V	up to 622M	PECL	3.3V/5V	PECL SD	10-pin MSOP (3×3mm)
SY88793V	up to 622M	PECL	3.3V/5V	TTL SD	10-pin MSOP (3×3mm)
SY88803V	up to 155M	PECL	3.3V/5V	TTL LOS	10-pin MSOP (3×3mm)
SY88813V	up to 155M	PECL	3.3V/5V	PECL SD	10-pin MSOP (3×3mm)
SY88893V	up to 155M	PECL	3.3V/5V	TTL SD	10-pin MSOP (3×3mm)

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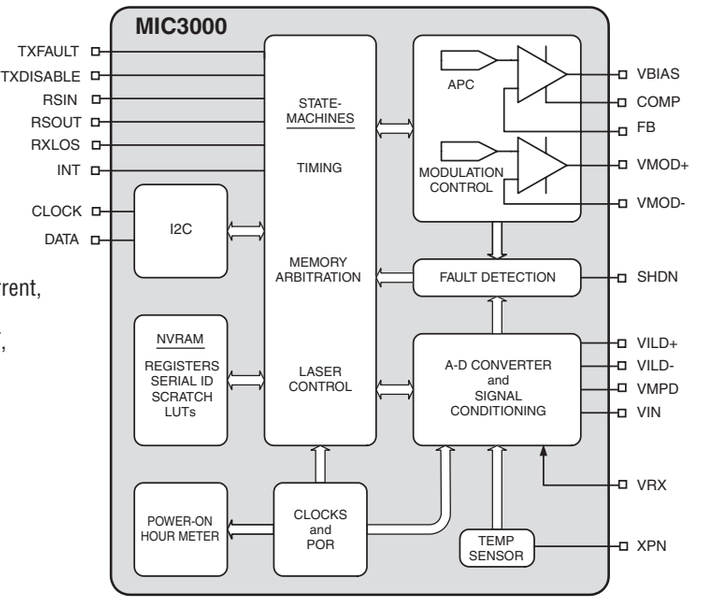
MIC3000
Optical Transceiver Management

Key Features

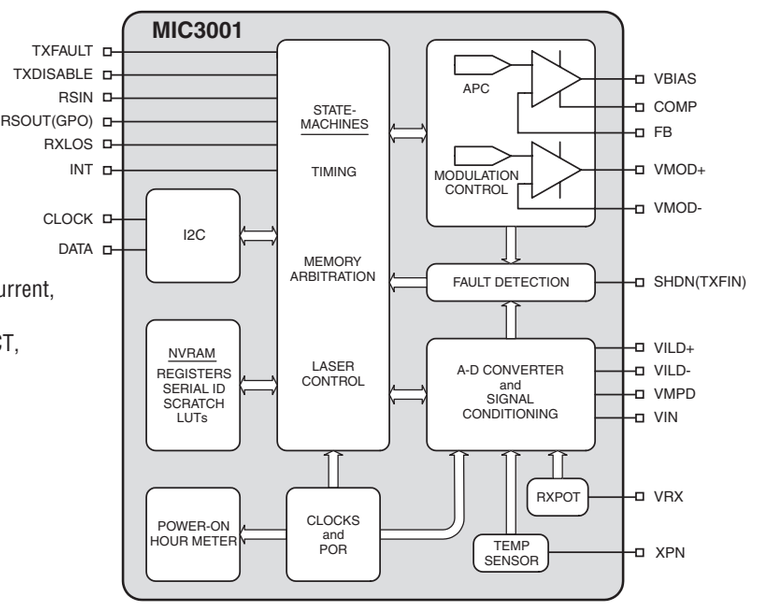
- Automatic power control or constant-current bias
- Supports multiple laser types and bias circuit topologies
- Drives external low-cost BJT for laser bias
- Integrated digital temperature sensor
- Temperature compensation of modulation, bias, and fault levels via NVRAM look-up tables
- Direct interface to SY88932, SY89307 and other drivers
- NVRAM to support GBIC/SFP serial ID function
- User writable NVRAM scratchpad
- Diagnostic monitoring interface per SFF-8472
  - Monitors and reports critical parameters: temperature, bias current, TX and RX optical power and supply voltage
  - S/W control and monitoring of TXFAULT, RXLOS, RATESELECT, and TXDISABLE
- Power-on hour meter
- Interrupt capability
- Extensive test and calibration features
- 2-wire I2C compatible serial interface
- SFP MSA and SFF-8472 compliant
- 3.0V to 3.6V power supply range
- 24-pin MLF™ (4×4mm) packages



MIC3001
SFP Management with Internal Calibration

Key Features

- APC (Automatic Power Control) or constant-current laser bias
- Supports multiple laser types and bias circuit topologies
- Drives external low-cost BJT for laser bias
- Integrated digital temperature sensor
- Temperature compensation of modulation, bias, and fault levels via NVRAM look-up tables
- Direct interface to SY88932, SY89307 and other drivers
- NVRAM to support GBIC/SFP serial ID function
- User writable EEPROM scratchpad
- Diagnostic monitoring interface per SFF-8472
  - Monitors and reports critical parameters: temperature, bias current, TX and RX optical power and supply voltage
  - S/W control and monitoring of TXFAULT, RXLOS, RATESELECT, and TXDISABLE
  - **Internal or external calibration**
  - **EEPOT or adjusting RX power measurement**
- Power-on hour meter
- Interrupt capability
- Extensive test and calibration features
- 2-wire I2C compatible serial interface
- SFP MSA and SFF-8472 compliant
- 3.0V to 3.6V power supply range
- 5V tolerant I/O
- 24-pin MLF™ (4×4mm) packages



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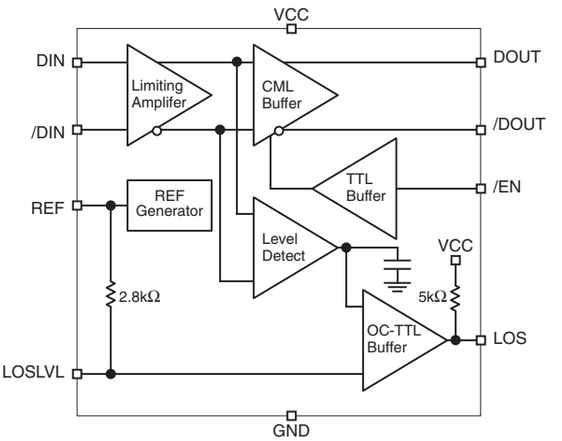
SY88773V *New!*
3.3V/5V 3.2Gbps CML Low Power Limiting Post Amplifier with TTL LOS

Key Features

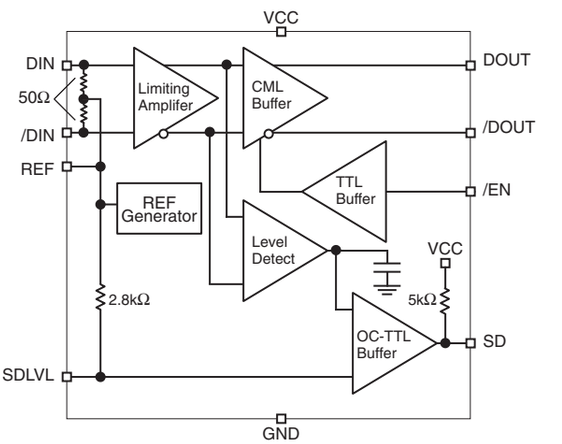
- Multi-rate up to 3.2Gbps operation
- Wide gain-bandwidth product
  - 38dB differential gain
  - 2GHz 3dB bandwidth
- Low noise 50Ω CML data outputs
  - 800mV$_{pp}$ output swing
  - 60ps edge rates
  - 5ps$_{rms}$ typ. random jitter
  - 15ps$_{pp}$ typ. deterministic jitter
- Chatter-free Loss-of-Signal (LOS) output
  - 4.6dB electrical hysteresis
  - OC-TTL output with internal 5kΩ pull-up resistor
- Programmable LOS sensitivity using single external resistor
- Integrated input bias reference
- TTL /EN input allows feedback from LOS
- Wide operating range
  - Single 3.3V ±10% or 5V ±10% power supply
  - –40°C to +85°C industrial temperature range
- Available in tiny 10-pin EPAP-MSOP (3×3mm) and 16-pin MLF ™ (3×3mm) packages



SY88843V *New!*
3.3V/5V 3.2Gbps CML Low Power Limiting Post Amplifier with TTL SD

Key Features

- Multi-rate up to 3.2Gbps operation
- Wide gain-bandwidth product
  - 38dB differential gain
  - 2GHz 3dB bandwidth
- Low noise 50Ω CML data outputs
  - 800mV$_{pp}$ output swing
  - 60ps edge rates
  - 5ps$_{rms}$ typ. random jitter
  - 15ps$_{pp}$ typ. deterministic jitter
- Chatter-free Signal-Detect (SD) output
  - 4.6dB electrical hysteresis
  - OC-TTL output with internal 5kΩ pull-up resistor
- Programmable SD sensitivity using single external resistor
- Internal 50Ω data input termination
- TTL EN input allows feedback frm SD
- Wide operating range
  - Single 3.3V ±10% or 5V ±10% power supply
  - –40°C to +85°C industrial temperature range
- Available in tiny 10-pin EPAD-MSOP (3×3mm) and 16-pin MLF™ (3×3mm) packages



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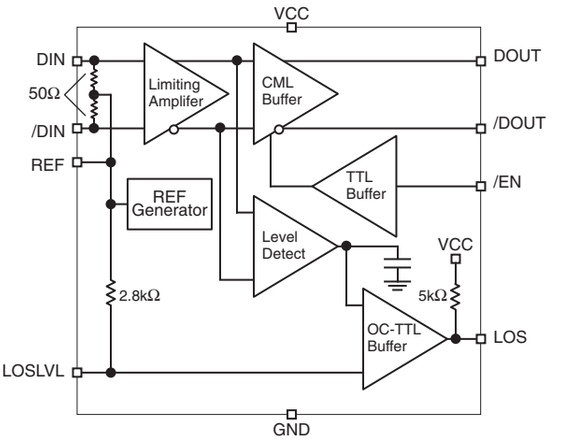
SY88973V *New!*
3.3V/5V 3.2Gbps CML Low Power Limiting Post Amplifier with TTL LOS

Key Features

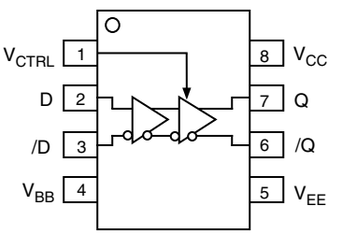
- Multi-rate up to 3.2Gbps operation
- Wide gain-bandwidth product
  - 38dB differential gain
  - 2GHz 3dB bandwidth
- Low noise 50Ω CML data outputs
  - 800mV$_{pp}$ output swing
  - 60ps edge rates
  - 5ps$_{rms}$ random jitter
  - 15ps$_{pp}$ deterministic jitter
- Chatter-free Loss-of-Signal (LOS) output
  - 4.6dB electrical hysteresis
  - OC-TTL output with internal 5kΩ pull-up resistor
- Programmable LOS sensitivity using single external resistor
- Internal 50Ω data input termination
- TTL /EN input allows feedback from LOS
- Wide operating range
  - Single 3.3V ±10% or 5V ±10% power supply
  - –40°C to +85°C industrial temperature range
- Available in tiny 10-pin EPAP-MSOP (3×3mm) and 16-pin MLF™ (3×3mm) packages



SY100EP16VS/SY89307V *New!*
5V/3.3V 2.5Gbps Variable Output Swing Differential Receiver

Key Features

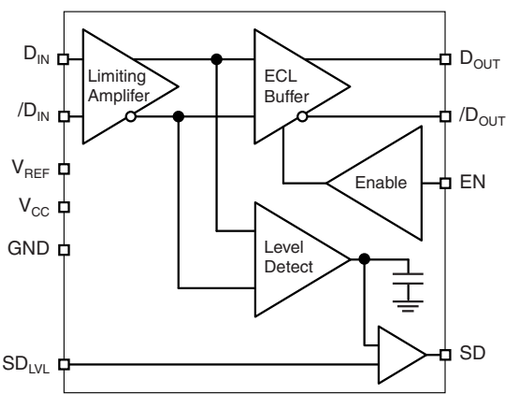
- 3.3V and 5V power supply options
- >2.5Gbps maximum throughput
- Fast output transitions <160ps t_r/t_f
- 100k compatible PECL/ECL I/O
- Functionally equivalent to SY88927V and SY100EP16VS
- Variable output swing from 100mV to 700mV
- Guaranteed operation over –40°C to +85°C temperature range
- Tiny 8-pin MSOP (3×3mm) and SOIC packages
- SY89307 is functionally equivalent in an ultra-small 8-pin MLF™ (2×2mm) package



SY88933V
5V/3.3V 1.25Gbps High-Speed Limiting Post Amplifier

Key Features

- Up to 1.25Gbps operation
- 260ps max. rise/fall times
- Low noise
- TTL SD output with internal 6.75kΩ pull-up resistor
- Programmable chatter-free SD generation
- Differential PECL inputs for data
- Tiny 10-pin MSOP (3×3mm) package



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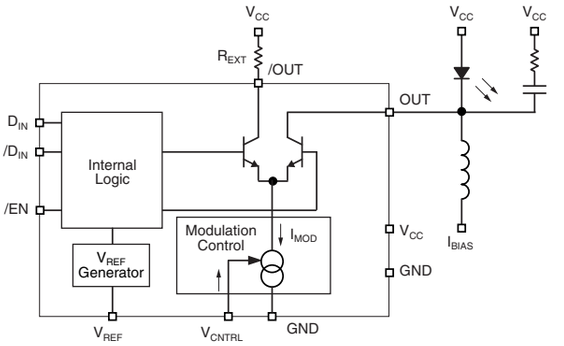
SY88932L
3.3V 3.2Gbps SONET/SDH Laser Driver with Output Disable

Key Features

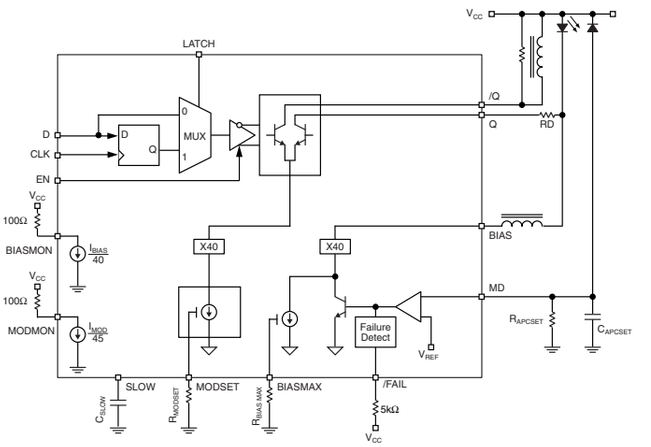
- Up to 3.2Gbps operation
- Modulation current to 60mA
- Rise/fall times 65ps typical
- Input 50Ω internally terminated to VCC
- TTL /EN with internal 75kΩ pull-down
- Designed for use with MIC3000 optical transceiver management
- Voltage programmable laser modulation current
- Single 3.3V power supply
- Operating temperature range of –40°C to 85°C
- Available in tiny 16-pin MLF™ package



SY88952L
5V/3.3V 2.5Gbps SDH/SONET Laser Driver with Automatic Power Control

Key Features

- Up to 2.5Gbps operation
- 50mA typical supply current
- Independent programmable laser modulation and bias current
- Bias current to 100mA and modulation current to 90mA
- Automatic average laser power control
- Bias and modulation current monitors
- TTL logic level disable input (Enable Control)
- 32-pin EPAD-MLF™ (5×5mm) package



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Analog Cross Reference

Allegro (Sprague)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
A8184		MIC5207	
A8187		MIC5207	
A8188		MIC5209	
UCN4807		MIC4807	
UCN5800	MIC5800		
UCN5801	MIC5801		
UCN5821	MIC5821		
UCN5822	MIC5822		
UCN5841	MIC5841		
UCN5842	MIC5842		
UCN5891	MIC5891		
UDN2981	MIC2981		
UDN2982	MIC2982		

Analog Devices

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
ADM705	MIC705		
ADM706/P/R/S/T	MIC706/P/R/S/T		
ADM707	MIC707		
ADM708/R/S/T	MIC708/R/S/T		
ADM809	MIC809		
ADM810	MIC810		
ADM811	MIC811		
ADM812	MIC812		
ADM1232	MIC1232		
ADM1810	MIC1810		
ADM1815	MIC1815		
ADM6315	MIC6315		
ADP3300		MIC5255/6	MIC5255/6 has better I_Q, and higher output current drive.
ADP3301		MIC5255/6	MIC5255/6 is in a much smaller package, has better I_Q, and higher output current drive.
ADP3302		MIC5250	MIC5250 is in a much smaller package, has better I_Q, and higher output current drive.
ADP3303		MIC5249	MIC5249 is in a much smaller package.
ADP3303A		MIC5239	MIC5239 has much better I_Q and wider input range.
ADP3307		MIC5255/MIC5256	MIC5255/6 has higher output current drive.
ADP3308	MIC5256		MIC5256 has higher output current drive.
ADP3309	MIC5256		MIC5256 has higher output current drive.
ADP3310		MIC5159	MIC5159 is in a much smaller package, wider input range, and lower power consumption.
ADP3330		MIC5235	MIC5235 has much better I_Q, wider input range, but lower output current drive.
ADP3331		MIC5235	MIC5235 has much better I_Q, wider input range, but lower output current drive.
ADP3333		MIC5239	MIC5239 has much better I_Q and wider input range.
ADP3334		MIC5239	MIC5239 has much better I_Q and wider input range.
ADP3335		MIC5239	MIC5239 has much better I_Q and wider input range.
ADP3336		MIC5239	MIC5239 has much better I_Q and wider input range.
ADP3338	MIC37138	MIC39100	Shares same package, different pin arrangement.

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Analog Devices (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
ADP3339	MIC37139	MIC37150/MIC49150	MIC37150/MIC49150 has lower output voltages, wider input range, enable pin and adjustable output voltage options.
ADP3342		MIC5248/MIC5258	MIC5248/MIC5258 is in a much smaller package, but has lower output current drive.
ADP3820		MIC79050	MIC79050 has integrated FET.
AD8022		MIC911	
AD8041		MIC914	
AD8055/6		MIC913/MIC914	
AD8057/8		MIC913/MIC911	
AD8061/2/3		MIC913/MIC910	
AD817/847		MIC910	

Advanced Analog Technology

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
AAT3220		MIC5255	MIC5255 has enable pin and noise reduction pin functions.
AAT3221	MIC5255/5247		MIC5255 has noise reduction pin function.
AAT3222		MIC5255	MIC5255 has noise reduction pin function.
AAT3215	MIC5255		MIC5255 has improved accuracy.
AAT3236	MIC5219	MIC5249	MIC5249 is in a slighly bigger package but comes with power-on-reset function.
AAT4280		MIC94060/1	
AAT3215	MIC5247/5255/5305	MIC94060/1	MIC5305 has higher PSRR and lower dropout.

Analog Microelectronics

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
AME1084		MIC29502	
AME1085		MIC29302	
AME1117		MIC39100/1/2	
AME8800		MIC5255	
AME8801	MIC5255, MIC5219		
AME8802	MIC5246		
AME8805/6		MIC5209	
AME8807	MIC5209		
AME8810		MIC5209	
AME8815		MIC39150/1	
AME8816	MIC39151		
AME8820		MIC5255	

Calogic

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
CLM1117		MIC39100	
CLM2805	MIC5255		
CLM2810		MIC39102	
CLM2815		MIC2915x/MIC3915x	
CLM2830		MIC2930x	
CLM2850		MIC2950x	
CLM2930/1		MIC5236	
CLM2950	MIC2950/1		
CLM5205	MIC5205		
CLM4420	MIC4420		
CLM4429	MIC4429		
CLM4426	MIC4426		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Calogic (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
CLM4427	MIC4427		
CLM4428	MIC4428		
LP2950	LP2950		
LP2951	LP2951		

Dallas Semiconductor (Maxim)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
DS1232	MIC1232		
DS1232LP	MIC1232		
DS1705	MIC705		
DS1706/P/R/S/T	MIC706/P/R/S/T		
DS1707	MIC707		
DS1708/R/S/T	MIC708/R/S/T		
DS1810	MIC1810		
DS1815	MIC1815		
DS1832	MIC1832		

EM Microelectronics – Marin S.A.

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
V6309		MIC809	
V6319		MIC810	

Fairchild Semiconductor

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
FAN1084		MIC2950x/MIC3950x	MIC2950x/MIC3950x has improved dropout performance.
FAN1086		MIC2915x/MIC3915x	MIC2915x/MIC3915x has improved dropout performance.
FAN1112		MIC3715x	MIC3715x has improved dropout performance, higher output current drive, and μCap capability.
FAN1117A		MIC3910x	MIC3910x has improved dropout performance.
FAN1581		MIC3750x, MIC29502	MIC3750x has improved dropout performance and μCap capability.
FAN1582		MIC3730x	MIC3730x has improved dropout performance and μCap capability.
FAN1585A		MIC3950x	MIC3950x has improved dropout performance.
FAN1587A		MIC3930x	MIC3930x has improved dropout performance.
FAN1589		MIC49150	MIC49150 has improved dropout performance and μCap capability.
FAN1616A		MIC5239	MIC5239 has wider input range, better I_Q performance, and μCap capability. Available in smaller package.
FAN2500	MIC5255		MIC5255 has higher output current drive and improved PSRR performance.
FAN2501	MIC5256		MIC5256 has higher output current drive and improved PSRR performance.
FAN2502	MIC5255		MIC5255 has improved PSRR performance.
FAN2503	MIC5256		MIC5256 has improved PSRR performance.
FAN2504		MIC5249	MIC5249 has improved PSRR performance and on-board power-on-reset function. In a slightly bigger package.
FAN2505		MIC5249	MIC5249 has improved PSRR performance, noise reduction pin, and on-board power-on-reset function. In a slightly bigger package.
FAN2508	MIC5255		MIC5255 has higher output current drive and improved PSRR performance.
FAN2509	MIC5256		MIC5256 has higher output current drive and improved PSRR performance.
FAN2510	MIC5255		MIC5255 has higher output current drive and improved PSRR performance.
FAN2511	MIC5256		MIC5256 has higher output current drive and improved PSRR performance.
FAN2512	MIC5255		MIC5255 has improved PSRR performance.
FAN2513	MIC5256		MIC5256 has improved PSRR performance.
FAN2514		MIC5249	MIC5249 has improved PSRR performance and on-board power-on-reset function. In a slightly bigger package.

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Fairchild Semiconductor (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
FAN2515		MIC5249	MIC5249 has improved PSRR performance, noise reduction pin, and on-board power-on-reset function. In a slightly bigger package.
FAN2518	MIC5255		MIC5255 has higher output current drive and improved PSRR performance.
FAN2519	MIC5256		MIC5256 has higher output current drive and improved PSRR performance.
FAN2558	MIC5252/5255/5238/5305		
FAN2559	MIC5252/5255/5238/5305		
FDG326P	MIC94052/3		MIC94052/3 have lower on-resistance.
FDG330P	MIC94052/3		MIC94052/3 have lower on-resistance.
ILC705	MIC705		
ILC706	MIC706		
ILC707	MIC707		
ILC708	MIC70		
ILC809	MIC809		
ILC810	MIC810		
ILC811	MIC811		
ILC812	MIC812		
ILC1232	MIC1232		
ILC1832	MIC1832		
ILC7010	MIC5213	MIC5255	MIC5255 is in a slightly bigger package with higher output current drive.
ILC7011	MIC5213	MIC5255	MIC5255 is in a slightly bigger package with higher output current drive.
ILC7062		MIC5239	MIC5239 has wider input range and much higher output current drive in a slightly bigger package.
ILC7070		MIC5235	MIC5235 has wider input range.
ILC7071	MIC5255		MIC5255 includes a noise reduction pin and higher output current drive.
ILC7080	MIC5255		MIC5255 has higher output current drive.
ILC7081	MIC5255		MIC5255 has higher output current drive.
ILC7082	MIC5255		
ILC7083	MIC5255		
ILC7280		MIC5250	
ILC7362		MIC5270	MIC5270 includes an enable function.
KA278Rxx		MIC2930x	MIC2930x has improved dropout performance and higher output current drive.
KA378Rxx		MIC2930x	MIC2930x has improved dropout performance.
KA76Lxx		MIC5236	MIC5236 has better I_Q performance, enable pin function, and smaller package.
KA78Rxx		MIC2915x	MIC2915x has improved dropout performance and higher output current drive.
KA78RHxx		MIC39100	MIC39100 has improved dropout performance and smaller package.
KA78RL00D	LP2951		
KA78RMxx	MIC5209		
LM2931A		MIC5236	
LP2951	LP2951/MIC2951		MIC2951 has improved performance.
RC1117		MIC39100	MIC39100 offers lower V_{OUT} and improved dropout performance.
RC1584		MIC2975x	MIC2975x offers improves dropout performance.
RC1585		MIC2950x	MIC2950x offers improves dropout performance.
RC1587		MIC2930x	MIC2930x offers improves dropout performance.
RC1616		MIC5209	
RC2951	LP2951/MIC2951		MIC2951 has improved performance.

IMP

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
IMP705	MIC705		
IMP706/P/R/S/T	MIC706/P/R/S/T		
IMP707	MIC707		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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IMP (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
IMP708/R/S/T	MIC708/R/S/T		
IMP809	MIC809		Minor spec. differences, see data sheets.
IMP810	MIC810		Minor spec. differences, see data sheets.
IMP811	MIC811		Minor spec. differences, see data sheets.
IMP812	MIC812		Minor spec. differences, see data sheets.
IMP1232LP	MIC1232		
IMP1810	MIC1810		
IMP1815	MIC1815		
IMP1832	MIC1832		

Infineon (Siemens)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
TDA5200		MICRF002/MICRF003	

International Rectifier

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
IRU3037(A)		MIC2193	

Intersil (elantec)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
EL2044		MIC910/MIC912	
EL2244/2444		MIC910/MIC912	
EL5210		MIC913	
EL7104		MIC4420	
EL7114		MIC4429	
EL7202		MIC4424	
EL7212		MIC4423	
EL7222		MIC4425	
EL7513		MIC2287, MIC2289	
ICL7555		MIC1555	
ICL7660		MIC2660	
ICL7667	MIC4426		
ISL6140	MIC2588-1		
ISL6150	MIC2588-2		
HIP1011D		MIC2590	MIC2590 supports IPMI.

Linear Technology

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LM185		LM4040/LM4041	
LM285		LM4040/LM4041	
LM385		LM4040/LM4041	
LT1071		MIC2171	
LT1072		MIC2172	
LT1083		MIC2975x/MIC2971x	MIC2975x has improved dropout performance.
LT1084		MIC2950x/MIC2951x	MIC2950x has improved dropout performance.
LT1085		MIC2930x/MIC2931x	MIC2930x has improved dropout performance.
LT1086		MIC2915x, MIC3715x	MIC2915x has improved dropout performance.
LT1117		MIC3910x	MIC3910x has improved dropout performance and smaller package options.
LT1120		MIC5236	MIC5236 has µCap capability, better I_Q performance, and smaller package options.
LT1120A		MIC5236	MIC5236 has µCap capability, better I_Q performance, and smaller package options.

Notes:

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Linear Technology (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LT1121		MIC5235/6	MIC5235/6 has μCap capability, better I_Q performance, and smaller package options.
LT1129		MIC5239 MIC3975	MIC5239 has slightly less output current drive in a much smaller package with μCap capability and better I_Q performance.
LT1160		MIC5022	
LT1171		MIC2171	
LT1172		MIC2172	
LT1188		MIC2505	
LT1232		MIC1232	
LT1241		MIC38C45/MIC38HC45	Improved alternative.
LT1242		MIC38C42/MIC38HC42	Improved alternative.
LT1243		MIC38C43/MIC38HC43	Improved alternative.
LT1244		MIC38C44/MIC38HC44	Improved alternative.
LT1245		MIC38C45/MIC38HC45	Improved alternative.
LT1265		MIC2179	
LT1301		MIC3172	
LT1303		MIC2570	
LT1307		MIC2571	
LT1521		MIC5239	MIC5239 has slightly more output current drive and includes an error flag function.
LT1528		MIC2930x	MIC2930x has improved dropout performance.
LT1529		MIC2930x	MIC2930x has improved dropout performance.
LT1573		MIC5159	MIC5159 comes in a smaller package and has μCap capability.
LT1575		MIC5159	MIC5159 comes in a smaller package and has μCap capability.
LT1580		MIC2975x	MIC2975x has improved dropout performance.
LT1584		MIC2975x/MIC2971x	MIC2975x has improved dropout performance.
LT1585		MIC2950x/MIC2951x	MIC2950x has improved dropout performance.
LT1585A		MIC2950x/MIC2951x	MIC2950x has improved dropout performance.
LT1587		MIC2930x/MIC2931x	MIC2930x has improved dropout performance.
LT1761	MIC5255		MIC5255 has slightly higher output current drive and better dropout performance.
LT1762		MIC5255	MIC5255 comes in a smaller package with better dropout performance.
LT1763		MIC5249	MIC5249 comes in a smaller package with a power-on-reset function, better dropout performance, and slightly lower output current drive.
LT1764	MIC3930x	MIC3730x	MIC3730x offers smaller package and μCap capability.
LT1806		MIC913/MIC911	
LT1809		MIC912	
LT1810		MIC913/MIC911	
LT1812		MIC913/MIC911	
LT1932		MIC2287	
LT1937	MIC2287BD5	MIC2287-xxBML	
LT1962		MIC5249	MIC5249 has power-on-reset function, better dropout performance.
LT1963	MIC3915x	MIC3715x	MIC3715x offers smaller package and μCap capability.
LT1964		MIC5270/5271	
LT3465		MIC2289	
LT4250L	MIC2588-2		
LT4250H	MIC2588-1		
LTC1155		MIC5016	
LTC1422	MIC2582		
LTC1530		MIC2169	MIC2169 offers a smaller solution.
LT1640L/AL	MIC2588-2		
LT1640H/AH	MIC2588-1		
LTC1642	MIC2085		
LTC1773		MIC2193	

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Linear Technology (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LTC3405/6		MIC2202	MIC2202 offers a smaller solution.
LTC4211		MIC2582/MIC2583/2583R	

Maxim

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
ICL7667	MIC4426		
MAX604		MIC5209	MIC5209 has noise reduction pin.
MAX613		MIC2558	
MAX614		MIC2557	
MAX626	MIC4426		
MAX627	MIC4427		
MAX628	MIC4428		
MAX663		MIC5235	MIC5235 comes in a smaller package.
MAX688		MIC5159	MIC5159 comes in a smaller package and has µCap capability.
MAX689		MIC5159	MIC5159 comes in a smaller package and has µCap capability.
MAX705	MIC705		
MAX706/P/R/S/T	MIC706/P/R/S/T		
MAX707	MIC707		
MAX708/R/S/T	MIC708/R/S/T		
MAX727		MIC4576	
MAX728		MIC4576	
MAX729		MIC4576	
MAX797		MIC2182	
MAX809	MIC809		
MAX810	MIC810		
MAX811	MIC811		
MAX812	MIC812		
MAX825	MIC2775		
MAX869		MIC2545A	
MAX882		MIC5239	MIC5239 comes in a smaller package with higher output current drive, and has µCap capability.
MAX883		MIC5239	MIC5239 comes in a smaller package with higher output current drive, and has µCap capability.
MAX884		MIC5239	MIC5239 comes in a smaller package with higher output current drive, and has µCap capability.
MAX890		MIC2544	
MAX891		MIC2544	
MAX892		MIC2544	
MAX893		MIC2544	
MAX894		MIC2546	
MAX895		MIC2546	
MAX1232	MIC1232		
MAX1561		MIC2287, MIC2289	
MAX1600		MIC2563	Improved alternative.
MAX1602		MIC2562	Improved alternative.
MAX1605		MIC2142	
MAX1607		MIC2025	Improved alternative.
MAX1615		MIC5233	MIC5233 comes with higher output current drive, and µCap capability.
MAX1616		MIC5233	MIC5233 comes with higher output current drive, and µCap capability.
MAX1658		MIC5239	MIC5239 comes in a smaller package with higher output current drive, and has µCap capability.

Notes:

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Maxim (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
MAX1659		MIC5239	MIC5239 comes in a smaller package with higher output current drive, and has μCap capability.
MAX1693		MIC2025	
MAX1694		MIC2025	
MAX1726		MIC5231	
MAX1735		MIC5270/5271	
MAX1792		MIC5249	MIC5249 has μCap capability but slightly lower output current drive.
MAX1806		MIC39101/MIC49150	MIC49150 has μCap capability.
MAX1818		MIC5216, MIC5219	
MAX1819		MIC5209	
MAX1820/1		MIC2202	MIC2202 offers a smaller solution.
MAX1848		MIC2287, MIC2289	
MAX1857		MIC5216/MIC5219	
MAX1966/7		MIC2169, MIC2199	
MAX4105		MIC913	
MAX4212		MIC913	
MAX4271/4370		MIC2582/MIC2583	
MAX4305		MIC913	
MAX4420	MIC4420		
MAX4426	MIC4426		
MAX4427	MIC4427		
MAX4428	MIC4428		
MAX4429	MIC4429		
MAX5911/5912		MIC2596/MIC2597	
MAX5920A	MIC2588-2		
MAX5920B	MIC2588-1		
MAX5921A	MIC2588-2		
MAX5921B	MIC2588-1		
MAX6306	MIC2774N		Minor spec. differences, see data sheets.
MAX6309	MIC2774L		Minor spec. differences, see data sheets.
MAX6312	MIC2774H		Minor spec. differences, see data sheets.
MAX6315	MIC6315		
MAX6319	MIC2775		
MAX8860		MIC5249	MIC5249 has power-on-reset.
MAX8863		MIC5255	MIC5255 also has noise reduction pin and μCap capability.
MAX8864		MIC5255	MIC5255 also has noise reduction pin and μCap capability.
MAX8865		MIC5250	MIC5250 also has noise reduction pin and μCap capability.
MAX8866		MIC5250	MIC5250 also has noise reduction pin and μCap capability.
MAX8867		MIC5255	
MAX8869		MIC3910x	MIC3910x comes in a smaller package.
MAX8873	MIC5255		MIC5255 also has noise reduction pin and μCap capability.
MAX8874	MIC5255		MIC5255 also has noise reduction pin and μCap capability.
MAX8875	MIC5256		
MAX8877	MIC5255		
MAX8878	MIC5255		
MAX8880		MIC5206	
MAX8881		MIC5206	
MAX8882		MIC5250	
MAX8883		MIC5250	
MAX8885	MIC5256		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
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Maxim (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
MAX8887	MIC5216		
MAX8888	MIC5219		
OPA2631		MIC911	
OPA2634		MIC910	
OPA2652		MIC912	
OPA631/2		MIC911	
OPA634/5		MIC910	
TSC426	MIC4426		
TSC427	MIC4427		

Microchip (Telcom)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
MCP100	MIC1815		Minor spec. differences, see data sheets.
MCP101	MIC1810		Minor spec. differences, see data sheets.
MCP809	MIC809		Minor spec. differences, see data sheets.
MCP810	MIC810		Minor spec. differences, see data sheets.
TC1014		MIC5207	
TC1015		MIC5207	
TC1054		MIC5206	
TC1055		MIC5206	
TC1070		MIC5207	
TC1071		MIC5207	
TC1072		MIC5206	
TC1073		MIC5206	
TC1185	MIC5245		
TC1186		MIC5206	
TC1187		MIC5207	
TC1232	MIC1232		
TC1270	MIC811		
TC1271	MIC812		
TC1272	MIC1810		
TC1275	MIC1815		
TC1410		MIC4416	
TC1411		MIC4416	
TC1413	MIC4429		Improved alternative.
TC1426	MIC4426		
TC1427	MIC4427		
TC1428	MIC4428		
TC18C43	MIC38C43/MIC38HC43		
TC18C46	MIC38C43/MIC38HC43		
TC28C43	MIC38C43/MIC38HC43		
TC28C46	MIC38C43/MIC38HC43		
TC38C43	MIC38C43/MIC38HC43		
TC38C46	MIC38C43/MIC38HC43		
TC426	MIC4426		
TC427	MIC4427		
TC428	MIC4428		
TC4420	MIC4420		
TC4421	MIC4421/MIC4421A		
TC4422	MIC4422/MIC4422A		
TC4423	MIC4423		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Microchip (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
TC4424	MIC4424		
TC4425	MIC4425		
TC4426	MIC4426		
TC4427	MIC4427		
TC4428	MIC4428		
TC4429	MIC4429		
TC4431		MIC4429	
TC4432		MIC4420	
TC4467	MIC4467		
TC4468	MIC4468		
TC4469	MIC4469		
TC55		MIC2954	
TCL1117		MIC2937	
TCL1580		MIC29712	
TCL1584		MIC29710	
TCL1585		MIC29510	
TCL1587		MIC29310	
TCM809	MIC809		
TCM810	MIC810		
TCN4040	LM4040		
TCN4041	LM4041		

Microsemi (Linfinity)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LX1552	MIC38C42/MIC38HC42		Improved alternative.
LX1553	MIC38C43/MIC38HC43		Improved alternative.
LX1554	MIC38C44/MIC38HC44		Improved alternative.
LX1555	MIC38C45/MIC38HC45		Improved alternative.
LX8020		MIC5201	
LX8117/A		MIC39100/1/2	
LX8117/B		MIC3915X	
LX8383		MIC29750	
LX8384		MIC29500	
LX8385		MIC29300	
LX8386		MIC29150	
LX8415		MIC5209	
LX8554		MIC2950X	
LX8584		MIC29502	
LX8585		MIC29510	
LX8586		MIC29710	
LX8587		MIC29300	
LX8610		MIC39100/1/2	
LX8630		MIC2930X	
LX8940	MIC29152		
LX8941		MIC2941	
SG2626	MIC4423		
SG2644	MIC4424		
SG3626	MIC4423		
SG3644	MIC4424		
SG3842	MIC38C42/MIC38HC42		Improved alternative.

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Microsemi (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
SG3843	MIC38C43/MIC38HC43		Improved alternative.
SG3844	MIC38C44/MIC38HC44		Improved alternative.
SG3845	MIC38C45/MIC38HC45		Improved alternative.

Mitel

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
KESRXxxx		MICRF002	

MPS

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
MP1523		MIC2287, MIC2289	

National Semiconductor

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
DS0026			
LM385			
LM555		MIC1555/MIC1557	
LM809	MIC809		
LM810	MIC810		
LM1084		MIC2951x	MIC2951x has improved dropout performance.
LM1085		MIC2931x	MIC2931x has improved dropout performance.
LM1086		MIC2915x	MIC2915x has improved dropout performance.
LM1117		MIC39100	MIC39100 has improved dropout performance.
LM2574	LM2574		
LM2575	LM2575		
LM2576	LM2576	MIC4685	
LM2594		MIC4574	
LM2595		MIC4575	
LM2596		MIC4576/MIC4685	
LM2618		MIC2202	MIC2202 offers a smaller solution.
LM2672		MIC4684	
LM2703/4		MIC2287, MIC2289	
LM2733		MIC2288	
LM2930		MIC2954	
LM2931		MIC2950/MIC2951	
LM2936		MIC5236	MIC5236 has higher output current drive.
LM2937		MIC5237	
LM2940	MIC2940	MIC39100, MIC2941A	
LM2940C	MIC2940		
LM2985	MIC5247/5255		
LM3940	MIC39100/MIC2940A		MIC39100 has improved dropout and offers lower V_{OUT}.
LM4040	LM4040		
LM4041	LM4041		
LM5528		MIC5258	
LM6161		MIC912/MIC911	
LM6171		MIC913/MIC911	
LM7121		MIC913/MIC912	
LM7171		MIC913/MIC912	
LM9070		MIC5249	MIC5249 comes in a smaller package and consumes less current.
LM9071		MIC5249	MIC5249 comes in a smaller package and consumes less current.

Notes:

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National Semiconductor (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LMC555		MIC1555	
LMC7101	LMC7101		
LMC7111	LMC7111		
LMC7211	LMC7211		
LMS1585A		MIC2950x/MIC2951x	MIC2950x has improved dropout performance.
LMS1587		MIC2930x/MIC2931x	MIC2930x has improved dropout performance.
LMS5213	MIC5213		
LMS8117A		MIC39100	MIC39100 has improved dropout performance.
LMV321		MIC6211	
LP2950	LP2950/MIC2950		MIC2950 has improved performance.
LP2954	MIC2954		
LP2954A	MIC2954		
LP2957		MIC5236	MIC5236 has µCap capability, better I_Q performance, and smaller package options.
LP2957A		MIC5236	MIC5236 has µCap capability, better I_Q performance, and smaller package options.
LP2960		MIC5239	MIC5239 has µCap capability, better I_Q performance, and smaller package options.
LP2966		MIC5250	
LP2967		MIC5250	
LP2980	MIC5255		MIC5255 has µCap capability, higher output current drive, and noise reduction pin.
LP2981	MIC5255		MIC5255 has µCap capability, higher output current drive, and noise reduction pin.
LP2982	MIC5255		MIC5255 has µCap capability, higher output current drive, and noise reduction pin.
LP2983	MIC5255		MIC5255 has noise reduction pin.
LP2985	MIC5255		MIC5255 has improved dropout performance.
LP2985LV	MIC5247		
LP2987	MIC5249		MIC5249 has noise reduction pin, higher output current drive, and smaller package.
LP2988	MIC5249		MIC5249 has higher output current drive, and smaller package.
LP2989		MIC5209/MIC5239	MIC5239 has much lower I_Q.
LP2989LV		MIC5239	MIC5239 has much lower I_Q.
LP2992		MIC5249	MIC5249 also has power-on-reset function is a slightly larger package.
LP3961		MIC39101	MIC39101 comes in a smaller package.
LP3962		MIC39151/MIC37151	MIC37151 comes in a smaller package.
LP3963		MIC39301/MIC37301	MIC37301 comes in a smaller package.
LP3964		MIC39102	MIC39102 comes in a smaller package.
LP3965		MIC29152/MIC37152	MIC37151 comes in a smaller package.
LP3966	MIC29302	MIC37302	MIC37302 comes in a smaller pakcage.
LP3981		MIC5249	MIC5249 also has power-on-reset function.
LP3985	MIC5255, MIC5305		MIC5305 has higher PSRR and lower I_{GND}.
LP3988	MIC5256		
LP3995	MIC5305		MIC5305 has higher PSRR and lower I_{GND}.
MM5450	MM5450		
MM5451	MM5451		
NHM0026	MIC4426		

ON Semiconductor

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
CS-2842	MIC38C42/MIC38HC42		Improved alternative.
CS-2843	MIC38C43/MIC38HC43		Improved alternative.
CS-3842	MIC38C42/MIC38HC42		Improved alternative.
CS-3843	MIC38C43/MIC38HC43		Improved alternative.
CS5201		MIC3910x	MIC3910x has improved dropout performance.
CS52015		MIC2915x	MIC2915x has improved dropout performance.
CS5203		MIC2930x	MIC2930x has improved dropout performance.

Notes:

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ON Semiconductor (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
CS5204		MIC2950x/MIC3950x/ /MIC3750x	MIC2950x/MIC3950x/MIC3750x has improved dropout performance. MIC3750x has µCap capability.
CS5205		MIC2950x	MIC2950x has improved dropout performance.
CS5206		MIC2975x	MIC2975x has improved dropout performance.
CS5207		MIC2975x	MIC2975x has improved dropout performance.
CS5207A		MIC2975x	MIC2975x has improved dropout performance.
CS5253		MIC3930x/MIC3730x	MIC3950x/MIC3750x has improved dropout performance. MIC3750x has µCap capability.
CS8101		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
CS8120		MIC5239	MIC5239 has lower I_Q performance, µCap capability and comes in a smaller package.
CS8221		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
CS8271		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
CS8311		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
CS8321		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
CS9201		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
CS9202		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
LM2575	LM2575		
LM2931		MIC5236	MIC5236 has lower I_Q performance, µCap capability and comes in a smaller package.
LP2950	LP2950		
LP2951	LP2951		
LT1585A		MIC2950x/3950x/ MIC3750x	MIC2950x/MIC3950x/MIC3750x has improved dropout performance. MIC3750x has µCap capability.
MAX809	MIC809		
MAX810	MIC810		
MAX811	MIC811		
MAX812	MIC812		
MAX8863		MIC5255	MIC5255 also has noise reduction pin and µCap capability.
MC33263		MIC5255	MIC5255 has improved dropout and I_Q performance.
MC33264		MIC5255	MIC5255 has improved dropout and comes in a smaller package.
MC33267		MIC5249	MIC5249 has slightly lower output current drive, has µCap capability, and comes in a much smaller package.
MC33269		MIC3910x	MIC3910x has improved dropout performance and smaller package options.
MC33275		MIC5219/MIC5209	MIC5219/MIC5209 has smaller package options.
MC33375		MIC5219/MIC5209	MIC5219/MIC5209 has smaller package options.
MC33761	MIC5255		MIC5255 has improved dropout performance.
MC33762		MIC5250	MIC5250 has improved dropout performance.
MC78BC00		MIC5159	MIC5159 has µCap capability.
MC78FC00		MIC5235	MIC5235 has µCap capability and comes in a smaller package.
MC78LC00		MIC5235	
MC78PC00	MIC5255		
NCP500	MIC5255		
NCP502		MIC5213	
NCP511	MIC5235		MIC5235 has better I_Q performance.
NCP512		MIC5213	
NCP551	MIC5235		
NCP552		MIC5235	
NCP553		MIC5235	
NCP561	MIC5235		
NCP562		MIC5235	
NCP563		MIC5235	
NCP1086		MIC2915x	MIC2915x has improved dropout performance.
NCP1117		MIC3910x	MIC3910x has improved dropout performance.

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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ON Semiconductor (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
NCP1232	MIC1232		
NCP1570		MIC2193	
NCP2860		MIC5219/MIC5216	
NCP4561		MIC5255	MIC5255 has improved dropout and I_Q performance.
UC2842	MIC38C42/MIC38HC42		Improved alternative.
UC2843	MIC38C43/MIC38HC43		Improved alternative.
UC2844	MIC38C44/MIC38HC44		Improved alternative.
UC2845	MIC38C45/MIC38HC45		Improved alternative.
UC3842	MIC38C42/MIC38HC42		Improved alternative.
UC3843	MIC38C43/MIC38HC43		Improved alternative.
UC3844	MIC38C44/MIC38HC44		Improved alternative.
UC3845	MIC38C45/MIC38HC45		Improved alternative.

Philips

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
UC2842	MIC38C42/MIC38HC42		Improved alternative.
UC2843	MIC38C43/MIC38HC43		Improved alternative.
UC2844	MIC38C44/MIC38HC44		Improved alternative.
UC2845	MIC38C45/MIC38HC45		Improved alternative.
UC78PC33		MIC5245	

Ricoh

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
RN5RT		MIC5235	MIC5235 has higher output current drive and µCap capability.
RN5RZ		MIC5255	MIC5255 has higher output current drive, µCap capability, noise reduction pin, and improved dropout performance.
R1110N	MIC5255		MIC5255 has µCap capability, noise reduction pin, and improved dropout performance.
R1111N	MIC5255		MIC5255 has µCap capability and improved dropout performance.
R1112N	MIC5255		MIC5255 has improved dropout performance.
R1120N		MIC5255	MIC5255 has improved dropout performance.
R1121N		MIC5255	MIC5255 has improved dropout performance.
R1122N		MIC5255	MIC5255 has improved dropout performance.
R1130X		MIC5249	MIC5249 includes power-on-reset function, improved dropout performance, and comes in a smaller package.
R5510H		MIC5249	MIC5249 includes programmable reset delay, improved dropout performance, and comes in a smaller package.
R5321D		MIC5250	MIC5250 has improved dropout performance and comes in a smaller package.
R1140Q		MIC5255	MIC5255 has improved dropout performance.
R1141Q		MIC5255	MIC5255 has improved dropout performance.
R1150H		MIC5249	MIC5249 comes in a smaller package.
R1151N		MIC5159	MIC5150 has µCap feature.
R1160X	MIC5252/5255		
R1170X		MIC3910x	
R5322N		MIC5250	MIC5250 has improved dropout performance.
R5323N		MIC221x, MIC5250	MIC221x has lower I_{GND} and better thermals. MIC5250 has improved dropout performance.

Samsung

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
KA3842	MIC38C42/MIC38HC42		Improved alternative.
KA3843	MIC38C43/MIC38HC43		Improved alternative.

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Samsung (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
KA3844	MIC38C44/MIC38HC44		Improved alternative.
KA3845	MIC38C45/MIC38HC45		Improved alternative.

Sanyo

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
S-1111	MIC5252		MIC5252 requires smaller C_{OUT} and has lower dropout.
S-1112			Improved alternative.

Seiko

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
S80230	MIC5203		
S80250	MIC5203		
S81215	MIC5203		
S81230	MIC5203		
S81233	MIC5203		
S81240	MIC5203		
S81250	MIC5203		
S81330	MIC5207		
S81340	MIC5207		
S81350	MIC5207		

Semtech

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
CS1202A		MIC3910x	MIC3910x has improved dropout performance, higher output current drive, and smaller package options.
EZ1083B		MIC29750/MIC29710	MIC29750/MIC29710 has improved dropout performance.
EZ1084BC		MIC29500/MIC29510	MIC29500/MIC29510 has improved dropout performance.
EZ1084C		MIC29500/MIC29510	MIC29500/MIC29510 has improved dropout performance.
EZ1084I		MIC29500/MIC29510	MIC29500/MIC29510 has improved dropout performance.
EZ1085BC		MIC29300/MIC29310	MIC29300/MIC29310 has improved dropout performance.
EZ1085C		MIC29300/MIC29310	MIC29300/MIC29310 has improved dropout performance.
EZ1085I		MIC29300/MIC29310	MIC29300/MIC29310 has improved dropout performance.
EZ1086BC		MIC29150	MIC29150 has improved dropout performance.
EZ1086C		MIC29150	MIC29150 has improved dropout performance.
EZ1086I		MIC29150	MIC29150 has improved dropout performance.
EZ1087		MIC29500/MIC29510	MIC29500/MIC29510 has improved dropout performance.
EZ1117		MIC3910x	MIC3910x has improved dropout performance and smaller package options.
EZ1117A		MIC3910x	MIC3910x has improved dropout performance and smaller package options.
EZ1583		MIC49150	MIC49150 has improved dropout performance, µCap capability and smaller package options.
EZ1584C		MIC29750/MIC29710	MIC29750/MIC29710 has improved dropout performance.
EZ1584I		MIC29750/MIC29710	MIC29750/MIC29710 has improved dropout performance.
EZ1585C		MIC29500/29510	MIC29500/MIC29510 has improved dropout performance.
EZ1585I		MIC29500/29510	MIC29500/MIC29510 has improved dropout performance.
EZ1587C		MIC393xx/29300/29310	MIC29300/MIC29310 has improved dropout performance.
EZ1587I		MIC29300/29310	MIC29300/MIC29310 has improved dropout performance.
EZ1588		MIC29300/29310	MIC29300/MIC29310 has improved dropout performance and higher output current drive.
LM2575	LM2575		
LM2576	LM2576		
LP2951A	MIC2951		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Semtech (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
SC1117		MIC3910x	MIC3910x has improved dropout performance and smaller package options.
SC112		MIC5255	MIC5255 has improved dropout performance.
SC1453	MIC5255		
SC1454		MIC5250	
SC1456		MIC5250	
SC1457	MIC5256		
SC1540		MIC5219/MIC5209	MIC5219/MIC5209 has better noise performance. MIC5219 is available in a smaller package.
SC1540A		MIC5209/MIC5239	MIC5209 has better noise performance. MIC5239 has better I_Q performance and comes in smaller package option.
SC1541		MIC39101/2	MIC39101/2 has improved dropout performance.
SC1551	MIC39151		MIC39151 has flag function rather than power-on-reset and improved dropout performance.
SC1552	MIC39301		MIC39301 has flag function rather than power-on-reset and improved dropout performance.
SC1563		MIC5219/MIC5239	MIC5239 has much lower I_Q performance and µCap capability.
SC1565		MIC3910x/MIC3715x	
SC1565	MIC3910x/MIC3915x	MIC3715x	MIC3715x has µCap capability and comes in a smaller high power package.
SC1566		MIC3930x/MIC3730x	MIC3730x comes in smaller package.
SC1566	MIC3930x	MIC3730x	MIC3730x has µCap capability and comes in a smaller high power package.
SC2982	MIC5255		MIC5255 has improved dropout performance, higher output current drive, and µCap capability.
SC5205	MIC5205/MIC5255		MIC5255 has improved dropout performance, and µCap capability.
SC8863		MIC5255	MIC5255 has improved dropout, I_Q, and noise performances.
SC5825	MIC2525		
SC5826	MIC2526		

SGS-Thompson

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
L4978D		MIC4684	Improved alternative.
LF120	MIC5209		
LF33	MIC5209		
LF50	MIC5209		
M5450	MM5450		
M5451	MM5450		
SGS2626	MIC4423		
SGS3626	MIC4423		
UC3842	MIC38C42/MIC38HC42		Improved alternative.
UC3843	MIC38C43/MIC38HC43		Improved alternative.
UC3844	MIC38C44/MIC38HC44		Improved alternative.
UC3845	MIC38C45/MIC38HC45		Improved alternative.

Siliconix

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
SI9175		MIC2202	MIC2202 offers a smaller solution.

Sipex

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
SP4403		MIC4827	
SP4405		MIC4826/7	
SP4412A		MIC4826/7	
SP4414		MIC4826/7	

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Sipex (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
SP4422A		MIC4826/7	
SP4423		MIC4826/7	
SP4424		MIC4826/7	
SP4425		MIC4826/7	
SP4428		MIC4826/7	
SP4438		MIC4826/7	
SP4439		MIC4826/7	
SP4480		MIC4826/7 (x2)	
SP4490		MIC4826/7 (x2)	
SP4491		MIC4826/7 (x2)	
SP4501		MIC4826/7	
SP6123		MIC2193	
SPX29150	MIC2915x		
SPX29300	MIC2930x, MIC3930x		
SPX2940	MIC2940A		
SPX3940A	MIC37100		MIC37100 requires ceramic cap as wll as tantalum.

ST Microelectronics

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LD1117		MIC37100-3.3BS	
LD4941		MIC2940	
LD1085		MIC3930x	

Supertex

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
HV826	MIC4826	MIC4827	MIC4827 Improved alternative.
HV857	MIC4827	MIC4827	
HV9110		MIC9130/1	
HV9112		MIC9130/1	
HV9113		MIC9130	
HV9605C		MIC2179	

Texas Instruments (Unitrode)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
LM2576	LM2576		
LT751M	MIC29152		
LT1072		MIC2172	
REG101	MIC5255		MIC5255 has higher output current drive and improved accuracy.
REG102	MIC5255		MIC5255 has improved accuracy and I_Q performance.
REG103		MIC5209	
REG104		MIC3910x	MIC3910x available in smaller package options.
REG113	MIC5219		MIC5219 has improved I_Q performance.
REG1117		MIC3910x	MIC3910x available in smaller package options and has higher output current drive and improved dropout performance.
REG1117A		MIC3910x	MIC3910x available in smaller package options and has improved dropout performance.
SN75518	MIC5818		
TL750Lxx		MIC5236	MIC5236 has much better I_Q performance and µCap capability.
TL751Lxx		MIC5236	MIC5236 has much better I_Q performance and µCap capability.
TL750Mxx	MIC2937		
TL751Mxx	MIC2937		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Texas Instruments (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
TL4810	MIC5810		
TLV2217	MIC5209		MIC5209 is available in smaller package options.
THS4001		MIC913/MIC923	
THS4031/2		MIC912/MIC922	
THS4041/2		MIC912	
THS4051/2		MIC911	
THS4061/2		MIC911	
THS4081/2		MIC911	
TP2330		MIC2584/MIC2583	
TPS2041/2051		MIC2025	
TPS2042/2052		MIC2026	
TPS2044/2054		MIC2027	
TPS2014		MIC2025-2	
TPS2015		MIC2025-2	
TPS2201		MIC2563A	
TPS2205		MIC2563A	
TPS2206		MIC2564A	
TPS2211		MIC2562A	
TPS2214		MIC2564A	
TPS2216		MIC2564A	
TPS2390		MIC2588-2	
TPS2398		MIC2588-2	
TPS2811		MIC4426	
TPS2812		MIC4427	
TPS2813		MIC4428	
TPS3705		MIC706	
TPS3707		MIC708	
TPS3809		MIC809	Minor spec differences, see data sheets.
TPS3825		MIC2775	Minor spec differences, see data sheets.
TPS71xx		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS71025		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS715xx		MIC5235/MIC5233	MIC5235/MIC5233 has higher output current drive and wider input range.
TPS71525		MIC5213	
TPS71Hxx		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS7201		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS721xx	MIC5235		MIC5235 has better I_Q performance and wider input range.
TPS2216		MIC2564A	
TPS2811		MIC4426	
TPS2812		MIC4427	
TPS2813		MIC4428	
TPS3705		MIC706	
TPS3707		MIC708	
TPS3809		MIC809	Minor spec differences, see data sheets.
TPS3825		MIC2775	Minor spec differences, see data sheets.
TPS400x		MIC2169	
TPS61042		MIC2287, MIC2289	
TPS6200x		MIC2202	
TPS71xx		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS71025		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS715xx		MIC5235/MIC5233	MIC5235/MIC5233 has higher output current drive and wider input range.
TPS71525		MIC5213	

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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Texas Instruments (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
TPS71Hxx		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS7201		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS721xx	MIC5235		MIC5235 has better I_Q performance and wider input range.
TPS722xx	MIC5235		MIC5235 has better I_Q performance, higher output current drive, and wider input range.
TPS72xx		MIC5216	MIC5216 is available in a smaller package and has better I_Q performance.
TPS725xx		MIC39101/MIC39102	MIC39101/MIC39102 are available in smaller packages.
TPS73xx		MIC5249	MIC5249 comes in a smaller package and has better I_Q performance.
TPS74xx		MIC5249	MIC5249 has higher output current drive, power-on-reset function, smaller package, and better accuracy.
TPS755xx	MIC3950x	MIC3750x	MIC3950x/MIC3750x has better accuracy and lower V_{IN} capability.
	MIC29502		MIC3750x has µCap capability.
TPS756xx	MIC3950x	MIC3750x	MIC3950x/MIC3750x has better accuracy and lower V_{IN} capability. MIC3750x has µCap capability.
TPS757xx	MIC3930x	MIC3730x	MIC3930x/MIC3730x has better accuracy and lower V_{IN} capability. MIC3750x has µCap capability.
TPS758xx	MIC3930x	MIC3730x	MIC3930x/MIC3730x has better accuracy and lower V_{IN} capability. MIC3750x has µCap capability.
TPS759xx		MIC2975x	MIC2975x has improved dropout performance.
TPS760xx	MIC5235		MIC5235 has better I_Q performance, higher output current drive, and µCap capbility.
TPS761xx	MIC5235		MIC5235 has better I_Q performance, higher output current drive, and µCap capbility.
TPS76201	MIC5235		MIC5235 has better I_Q performance, higher output current drive, and µCap capbility.
TPS763xx	MIC5235		MIC5235 has better I_Q performance and µCap capbility.
TPS764xx	MIC5255		MIC5255 has better dropout performance.
TPS765xx		MIC5236	MIC5236 has much better I_Q performance, wider input range, and smaller package option.
TPS766xx		MIC5239	MIC5239 has much better I_Q performance, wider input range, and smaller package option.
TPS769xx	MIC5235		
TPS770xx	MIC5235		
TPS771xx		MIC5249	MIC5249 has programmable delay function.
TPS772xx		MIC5256	MIC5256 has smaller package.
TPS773xx		MIC5249	MIC5249 has programmable delay function.
TPS774xx		MIC5249	MIC5249 has programmable delay function.
TPS776xx		MIC3975	MIC3975 has higher output current drive and µCap capability.
TPS778xx		MIC3975	MIC3975 has smaller package option and µCap capability.
TPS790xx	MIC5255		MIC5255 has higher output current drive and µCap capability.
TPS791xx	MIC5255		MIC5255 has higher output current drive.
TPS792xx	MIC5255		MIC5255 has higher output current drive.
TPS793xx	MIC5255		
TPS794xx		MIC5249	MIC5249 has higher output current drive and power on reset function.
TPS797xx		MIC5231/MIC5235	MIC5235 has higher output current drive.
UC2575	LM2575		
UC2576	LM2576		
UC2842	MIC38C42/MIC38HC42		Improved alternative.
UC2843	MIC38C43/MIC38HC43		Improved alternative.
UC2844	MIC38C44/MIC38HC44		Improved alternative.
UC2845	MIC38C45/MIC38HC45		Improved alternative.
UC3842	MIC38C42/MIC38HC42		Improved alternative.
UC3843	MIC38C43/MIC38HC43		Improved alternative.
UC3844	MIC38C44/MIC38HC44		Improved alternative.
UCC281		MIC3910x	
UCC381		MIC3910x	

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
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Texas Instruments (continued)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
UCC282	MIC29300	MIC2930x	
UCC383	MIC29300	MIC2930x	
UCC386		MIC5239	MIC5239 has higher output current drive and µCap capability.
UCC387		MIC5239	MIC5239 has higher output current drive and µCap capability.
UCC388		MIC5239	MIC5239 has higher output current drive and µCap capability.
UCC2800		MIC38C43/MIC38HC43	Smaller package available.
UCC2801		MIC38C45/MIC38HC45	
UCC2802		MIC38C42/MIC38HC42	
UCC2804		MIC38C44/MIC38HC44	
UCC2808	MIC3808/9	MIC3838/9	MIC3838/9 have improved functionality.
UCC3800		MIC38C43/MIC38HC43	Smaller package available.
UCC3801		MIC38C45/MIC38HC45	
UCC3802		MIC38C42/MIC38HC42	
UCC3804		MIC38C44/MIC38HC44	
UCC3808	MIC3808/9	MIC3838/9	MIC3838/9 have improved functionality.

Toko

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
TK11860		MIC2289	
TK111xxCS		MIC5255	MIC5255 has improved accuracy.
TK112xxCM		MIC5255	MIC5255 has improved accuracy.
TK113xxBM		MIC5255	MIC5255 has improved dropout and I_Q performance.
TK113xxBU		MIC5255	MIC5255 has improved dropout and I_Q performance.
TK715xxAS		MIC5235/MIC5233	MIC5235/MIC5233 has improved I_Q performance.
TK717xxS	MIC5255, MIC5305		MIC5305 has lower dropout and I_{GND} and higher PSRR.
TK740xxL		MIC5250	

Torex

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
XC6204	MIC5247, MIC5255		

Vishay (Siliconix)

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
Si9110/1/2/3		MIC9130/1	
Si9114		MIC9130/1	
Si9118/9		MIC9130/1	
Si9167/8		MIC2179	
Si1405	MIC94052/3		MIC94052/3 have lower on-resistance.
Si1417	MIC94052/3		MIC94052/3 have lower on-resistance.
Si9183	MIC5255		MIC5255 has lower I_{GND} and dropout.

Zetek

Part Number	Direct Cross[1]	Functional Cross[2]	Comments
ZXCM209	MIC810		
ZXCM210	MIC810		

Notes:

1. Direct cross parts are parametrically similar and are available in similar packages.
2. Functional cross parts are functionally similar, but have different specifications, and may have different packages.

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High Bandwidth Cross Reference

Fairchild Semiconductor

Part Number	Direct Cross	Functional Cross	Package
Super 300K™ Logic			
FSC100301	SY100S301		FC, JC, JCTR
FSC100302	SY100S302		FC, JC, JCTR
FSC100304	SY100S304		FC, JC, JCTR
FSC100307	SY100S307		FC, JC, JCTR
FSC100313	SY100S313		FC, JC, JCTR
FSC100314	SY100S314		FC, JC, JCTR
FSC100317	SY100S317		FC, JC, JCTR
FSC100318	SY100S318		FC, JC, JCTR
FSC100321	SY100S321		FC, JC, JCTR
FSC100322	SY100S322		FC, JC, JCTR
FSC100324	SY100S324		FC, JC, JCTR
FSC100325	SY100S325		FC, JC, JCTR
FSC100331	SY100S331		FC, JC, JCTR
FSC100336	SY100S336		FC, JC, JCTR
FSC100341	SY100S341		FC, JC, JCTR
FSC100350	SY100S350		FC, JC, JCTR
FSC100351	SY100S351		FC, JC, JCTR
FSC100355	SY100S355		FC, JC, JCTR
FSC100360	SY100S360		FC, JC, JCTR
FSC100363	SY100S363		FC, JC, JCTR
FSC100364	SY100S364		FC, JC, JCTR
FSC100366	SY100S366		FC, JC, JCTR
FSC100370	SY100S370		FC, JC, JCTR
FSC100371	SY100S371		FC, JC, JCTR
FSC100391	SY100S391		FC, JC, JCTR

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ON Semiconductor Index

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100E016FN	SY100E016JC		28-PLCC
MC100E016FNR2	SY100E016JC TR		28-PLCC Tape/Reel
MC100E101FN	SY100E101JC		28-PLCC
MC100E101FNR2	SY100E101JC TR		28-PLCC Tape/Reel
MC100E104FN	SY100E104JC		28-PLCC
MC100E104FNr2	SY100E104JC tr		28-PLCC Tape/Reel
MC100E107FN	SY100E107JC		28-PLCC
MC100E107FNR2	SY100E107JC TR		28-PLCC Tape/Reel
MC100E111FN	SY100E111AEJC		28-PLCC
MC100E111FNR2	SY100E111AEJC TR		28-PLCC Tape/Reel
MC100LVE111FN	SY100E111LEJC		28-PLCC
MC100LVE111FNR2	SY100E111LEJC TR		28-PLCC Tape/Reel
MC100E112FN	SY100E112JC		28-PLCC
MC100E112FNR2	SY100E112JC TR		28-PLCC Tape/Reel
MC100E116FN	SY100E116JC		28-PLCC
MC100E116FNR2	SY100E116JC TR		28-PLCC Tape/Reel
MC100E122FN	SY100E122JC		28-PLCC
MC100E122FNR2	SY100E122JC TR		28-PLCC Tape/Reel
MC100E131FN	SY100E131JC		28-PLCC
MC100E131FNR2	SY100E131JC TR		28-PLCC Tape/Reel
MC100E136FN	SY100E136JC		28-PLCC
MC100E136FNR2	SY100E136JC TR		28-PLCC Tape/Reel
MC100E137FN	SY100E137JC		28-PLCC
MC100E137FNR2	SY100E137JC TR		28-PLCC Tape/Reel
MC100E141FN	SY100E141JC		28-PLCC
MC100E141FNR2	SY100E141JC TR		28-PLCC Tape/Reel
MC100E142FN	SY100E142JC		28-PLCC
MC100E142FNR2	SY100E142JC TR		28-PLCC Tape/Reel
MC100E143FN	SY100E143JC		28-PLCC
MC100E143FNR2	SY100E143JC TR		28-PLCC Tape/Reel
MC100E150FN	SY100E150JC		28-PLCC
MC100E150FNR2	SY100E150JC TR		28-PLCC Tape/Reel
MC100E151FN	SY100E151JC		28-PLCC
MC100E151FNR2	SY100E151JC TR		28-PLCC Tape/Reel
MC100E154FN	SY100E154JC		28-PLCC
MC100E154FNR2	SY100E154JC TR		28-PLCC Tape/Reel
MC100E155FN	SY100E155JC		28-PLCC
MC100E155FNR2	SY100E155JC		28-PLCC Tape/Reel
MC100E156FN	SY100E156JC		28-PLCC
MC100E156FNR2	SY100E156JC TR		28-PLCC Tape/Reel
MC100E157FN	SY100E157JC		28-PLCC
MC100E157FNR2	SY100E157JC TR		28-PLCC Tape/Reel
MC100E158FN	SY100E158JC		28-PLCC
MC100E158FNR2	SY100E158JC TR		28-PLCC Tape/Reel
MC100E160FN	SY100E160JC		28-PLCC
MC100E160FNR2	SY100E160JC TR		28-PLCC Tape/Reel
MC100E163FN	SY100E163JC		28-PLCC
MC100E163FNR2	SY100E163JC TR		28-PLCC Tape/Reel
MC100E164FN	SY100E164JC		28-PLCC
MC100E164FNR2	SY100E164JC TR		28-PLCC Tape/Reel

Notes:

1. Pin-for-pin, plug-in replacement: electrical specifications and pinout are 100% compatible.
2. Pin-for-pin, functional replacement: Micrel replacement is pin-for-pin compatible, DC and AC parameters are compatible for most applications, but may not be 100% functionally compatible for all applications.

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100E166FN	SY100E166JC		28-PLCC
MC100E166FNR2	SY100E166JC TR		28-PLCC Tape/Reel
MC100E167FN	SY100E167JC		28-PLCC
MC100E167FNR2	SY100E167JC TR		28-PLCC Tape/Reel
MC100E171FN	SY100E171JC		28-PLCC
MC100E171FNR2	SY100E171JC TR		28-PLCC Tape/Reel
MC100E175FN	SY100E175JC		28-PLCC
MC100E175FNR2	SY100E175JC TR		28-PLCC Tape/Reel
MC100E193FN	SY100E193JC		28-PLCC
MC100E193FNR2	SY100E193JC TR		28-PLCC Tape/Reel
MC100E195FN	SY100E195JC		28-PLCC
MC100E195FNR2	SY100E195JC TR		28-PLCC Tape/Reel
MC100E196FN	SY100E196JC		28-PLCC
MC100E196FNR2	SY100E196JC TR		28-PLCC Tape/Reel
MC100E212FN	SY100E212JC		28-PLCC
MC100E212FNR2	SY100E212JC TR		28-PLCC Tape/Reel
MC100LVE222FA	SY100E222LTI		52-LQFP
MC100LVE222FAR2	SY100E222LTITR		52-LQFP Tape/Reel
MC100E241FN	SY100E241JC		28-PLCC
MC100E241FNR2	SY100E241JC TR		28-PLCC Tape/Reel
MC100E256FN	SY100E256JC		28-PLCC
MC100E256FNR2	SY100E256JC TR		28-PLCC Tape/Reel
MC100E310FN	SY100E310LJI		28-PLCC
MC100E310FNR2	SY100E310LJITR		28-PLCC Tape/Reel
MC100E336FN	SY100E336JC		28-PLCC
MC100E336FNR2	SY100E336JC TR		28-PLCC Tape/Reel
MC100E337FN	SY100E337JC		28-PLCC
MC100E337FNR2	SY100E337JC TR		28-PLCC Tape/Reel
MC100E404FN	SY100E404JC		28-PLCC
MC100E404FNR2	SY100E404JC TR		28-PLCC Tape/Reel
MC100E416FN	SY100E416JC		28-PLCC
MC100E416FNR2	SY100E416JC TR		28-PLCC Tape/Reel
MC100E417FN	SY100E417JC		28-PLCC
MC100E417FNR2	SY100E417JC TR		28-PLCC Tape/Reel
MC100E431FN	SY100E431JC		28-PLCC
MC100E431FNR2	SY100E431JC TR		28-PLCC Tape/Reel
MC100E445FN	SY100E445JC		28-PLCC
MC100E445FNR2	SY100E445JC TR		28-PLCC Tape/Reel
MC100E446FN	SY100E446JC		28-PLCC
MC100E446FNR2	SY100E446JC TR		28-PLCC Tape/Reel
MC100E451FN	SY100E451JC		28-PLCC
MC100E451FNR2	SY100E451JC TR		28-PLCC Tape/Reel
MC100E452FN	SY100E452JC		28-PLCC
MC100E452FNR2	SY100E452JC TR		28-PLCC Tape/Reel
MC100E457FN	SY100E457JC		28-PLCC
MC100E457FNR2	SY100E457JC TR		28-PLCC Tape/Reel
MC100EL01D	SY100EL01ZI		8-SOIC
MC100EL01DR2	SY100EL01ZI TR		8-SOIC Tape/Reel
MC100EL01DT		SY10EP01VKI	8-TSSOP/MSOP
MC100EL01DTR2		SY10EP01VKI TR	8-TSSOP/MSOP Tape/Reel

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100EL04D	SY100EL04ZI		8-SOIC
MC100EL04DR2	SY100EL04ZI TR		8-SOIC Tape/Reel
MC100EL04DT	NA		8-TSSOP/MSOP
MC100EL04DTR2	NA		8-TSSOP/MSOP
MC100EL05D	SY100EL05ZI		8-TSSOP/MSOP
MC100EL05DR2	SY100EL05ZI TR		8-TSSOP/MSOP
MC100EL05DT		SY10EP05KI	8-TSSOP/MSOP
MC100EL05DTR2		SY10EP05KI TR	8-MSOP/TSSOP Tape/Reel
MC100EL07D	SY100EL07ZI		8-SOIC
MC100EL07DR2	SY100EL07ZI TR		8-SOIC Tape/Reel
MC100EL07DT	NA		8-TSSOP/MSOP
MC100EL07DTR2	NA		8-TSSOP/MSOP
MC100EL11D	SY100EL11VZI		8-SOIC
MC100EL11DR2	SY100EL11VZI TR		8-SOIC Tape/Reel
MC100EL11DT		SY100EP11VKI	8-TSSOP/MSOP
MC100EL11DTR2		SY100EP11VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVEL11D	SY100EL11VZI		8-SOIC
MC100LVEL11DR2	SY100ELVZITR		8-SOIC Tape/Reel
MC100LVEL11DT		SY100EP11VKI	8-TSSOP/MSOP
MC100LVEL11DTR2		SY100EP11VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EL12D	SY100EL12VZI		8-SOIC
MC100EL12DR2	SY100EL12VZI TR		8-SOIC Tape/Reel
MC100LVEL12DT	NA		8-TSSOP/MSOP
MC100LVEL12DTR2	NA		8-TSSOP/MSOP Tape/Reel
MC100EL14DW	SY100EL14VZI		20-SOIC
MC100EL14DWR2	SY100EL14VZI TR		20-SOIC Tape/Reel
MC100LVEL14DW	SY100EL14VZI		20-SOIC
MC100LVEL14DWR2	SY100EL14VZI TR		20-SOIC Tape/Reel
MC100EL15D	SY100EL15ZI	SY100EL15LZI	16-SOIC
MC100EL15DR2	SY100EL15ZI TR	SY100EL15LZITR	16-SOIC Tape/Reel
MC100EL16D	SY100EL16VZI	SY88927VZC	8-SOIC
MC100EL16DR2	SY100EL16VZ TR	SY88927VZC TR	8-SOIC Tape/Reel
MC100EL16DT	SY100EL16VKI	SY88927VKC	8-TSSOP/MSOP
MC100EL16DTR2	SY100EL16VKI TR	SY88927VKC TR	8-TSSOP/MSOP Tape/Reel
MC100LVEL16D	SY100EL16VZI		8-SOIC
MC100LVEL16DR2	SY100EL16VZI TR		8-SOIC Tape/Reel
MC100LVEL16DT	SY100EL16VKI		8-TSSOP/MSOP
MC100LVEL16DTR2	SY100EL16VKI TR		8-TSSOP/MSOP Tape/Reel
MC100EL17DW	SY100EL17VZI		20-SOIC
MC100EL17DWR2	SY100EL17VZI TR		20-SOIC Tape/Reel
MC100LVEL17DW	SY100EL17VZI		20-SOIC
MC100LVEL17DWR2	SY100EL17VZI TR		20-SOIC Tape/Reel
MC100EL29DW	SY100EL29VZI		20-SOIC
MC100EL29DWR2	SY100EL29VZI TR		20-SOIC Tape/Reel
MC100LVEL29DW	SY100EL29VZI		20-SOIC
MC100LVEL29DWR2	SY100EL29VZI TR		20-SOIC Tape/Reel
MC100EL31D	SY100EL31VZI		8-SOIC
MC100EL31DR2	SY100EL31VZI TR		8-SOIC Tape/Reel
MC100EL31DT		SY10EP31VKI	8-TSSOP/MSOP
MC100EL31DTR2		SY10EP31VKI TR	8-TSSOP/MSOP Tape/Reel

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100EL31DTR2		SY10EP31VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EL32D	SY100EL32VZI		8-SOIC
MC100EL32DR2	SY100EL32VZI TR		8-SOIC Tape/Reel
MC100EL32DT		SY100EP32VKI	8-TSSOP/MSOP
MC100EL32DTR2		SY100EP32VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVEL32D	SY100EL32VZI		8-SOIC
MC100LVEL32DR2	SY100EL32VZI TR		8-SOIC Tape/Reel
MC100LVEL32DT		SY100EP32VKI	8-TSSOP/MSOP
MC100LVEL32DTR2		SY100EP32VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EL33D	SY100EL33ZI		8-SOIC
MC100EL33DR2	SY100EL33ZI TR		8-SOIC Tape/Reel
MC100EL33DT		SY100EP33VKI	8-TSSOP/MSOP
MC100EL33DTR2		SY100EP33VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVEL33D	SY100EL33LZI		8-SOIC
MC100LVEL33DR2	SY100EL33LZI TR		8-SOIC Tape/Reel
MC100EL34D	SY100EL34ZI (5V)		8-SOIC
MC100EL34DR2	SY100EL34ZI TR (5V)		8-SOIC Tape/Reel
MC100EL34D	SY100EL34LZI (3.3V)		8-SOIC
MC100EL34DR2	SY100EL34LZI TR (3.3V)		8-SOIC Tape/Reel
MC100EL35D	SY100EL35ZI		8-SOIC
MC100EL35DR2	SY100EL35ZI TR		8-SOIC Tape/Reel
MC100EL35DT	NA	NA	8-TSSOP/MSOP
MC100EL35DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC100EL38DW	SY100EL38ZI	SY100S838ZI	20-SOIC
MC100EL38DWR2	SY100EL38ZI TR	SY100S838ZI TR	20-SOIC Tape/Reel
MC100LVEL38DW	SY100EL38LZI	SY100S838LZI	20-SOIC
MC100LVEL38DWR2	SY100EL38LZI TR	SY100S838LZI TR	20-SOIC Tape/Reel
MC100EL39DW	SY100S839ZI		20-SOIC
MC100EL39DWR2	SY100S839ZI TR		20-SOIC Tape/Reel
MC100LVEL39DW	SY100S839LZI		20-SOIC
MC100LVEL39DWR2	SY100S839LZI TR		20-SOIC Tape/Reel
MC100EL51D	SY100EL51ZI		8-SOIC
MC100EL51DR2	SY100EL51ZI TR		8-SOIC Tape/Reel
MC100EL51DT		SY10EP51VKI	8-TSSOP/MSOP
MC100EL51DTR2		SY10EP51VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVEL51D		SY10EP51VZI	8-SOIC
MC100LVEL51DR2		SY10EP51VZI TR	8-SOIC Tape/Reel
MC100EL52D	SY100EL52ZI		8-SOIC
MC100EL52DR2	SY100EL52ZI TR		8-SOIC Tape/Reel
MC100EL52DT		SY10EP52VKI	8-TSSOP/MSOP
MC100EL52DTR2		SY10EP52VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EL56DW	SY100EL56VZI		20-SOIC
MC100EL56DWR2	SY100EL56VZI TR		20-SOIC Tape/Reel
MC100LVEL56DW	SY100EL56VZI		20-SOIC
MC100LVEL56DWR2	SY100EL56VZI TR		20-SOIC Tape/Reel
MC100EL57D	SY100EL57ZI	SY100EL57LZI	16-SOIC
MC100EL57DR2	SY100EL57ZI TR	SY100EL57LZI TR	16-SOIC Tape/Reel
MC100EL58D	SY100EL58ZI		8-SOIC
MC100EL58DR2	SY100EL58ZI TR		8-SOIC Tape/Reel
MC100EL58DT		SY100EP58VKI	8-TSSOP/MSOP

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100EL58DTR2		SY100EP58VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVEL58D		SY100EP58VZI	8-SOIC
MC100LVEL58DR2		SY100EP58VZI TR	8-SOIC Tape/Reel
MC100LVEL58DT		SY100EP58VKI	8-TSSOP/MSOP
MC100LVEL58DTR2		SY100EP58VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EL58DR2	SY100EL58ZI TR		8-SOIC Tape/Reel
MC100EL90DW	SY100EL90VZI		20-SOIC
MC100EL90DWR2	SY100EL90VZI TR		20-SOIC Tape/Reel
MC100LVEL90DW	SY100EL90VZI		20-SOIC
MC100LVEL90DWR2	SY100EL90VZI TR		20-SOIC Tape/Reel
MC100EL91DW	SY100EL91ZI		20-SOIC
MC100EL91DWR2	SY100EL91ZI TR		20-SOIC Tape/Reel
MC100LVEL91DW	SY100EL91LZI		20-SOIC
MC100LVEL91DWR2	SY100EL91LZI TR		20-SOIC Tape/Reel
MC100LVEL92DW	SY100EL92ZI		20-SOIC
MC100LVEL92DWR2	SY100EL92ZI TR		20-SOIC Tape/Reel
MC100ELT20D	SY100ELT20VZI		8-SOIC
MC100ELT20DR2	SY100ELT20VZI TR		8-SOIC Tape/Reel
MC100ELT20DT		SY100EPT20VKI	8-TSSOP/MSOP
MC100ELT20DTR2		SY100EPT20VKI TR	8-TSSOP/MSOP Tape/Reel
MC100ELT21D	SY100ELT21ZI		8-SOIC
MC100ELT21DR2	SY100ELT21ZI TR		8-SOIC Tape/Reel
MC100ELT21DT		SY100EPT21LKI	8-TSSOP/MSOP
MC100ELT21DTR2		SY100EPT21LKI TR	8-TSSOP/MSOP Tape/Reel
MC100ELT22D	SY100ELT22ZI		8-SOIC
MC100ELT22DR2	SY100ELT22ZI TR		8-SOIC Tape/Reel
MC100ELT22DT		SY100EPT22VKI	8-TSSOP/MSOP
MC100ELT22DTR2		SY100EPT22VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVELT22D	SY100ELT22LZI		8-SOIC
MC100LVELT22DR2	SY100ELT22LZI TR		8-SOIC Tape/Reel
MC100LVELT22DT		SY100EPT22VKI	8-TSSOP/MSOP
MC100LVELT22DTR2		SY100EPT22VKI TR	8-TSSOP/MSOP Tape/Reel
MC100ELT23D	SY100ELT23ZI		8-SOIC
MC100ELT23DR2	SY100ELT23ZI TR		8-SOIC Tape/Reel
MC100ELT23DT		SY100EPT23VKI	8-TSSOP/MSOP
MC100ELT23DTR2		SY100EPT23VKI TR	8-TSSOP/MSOP Tape/Reel
MC100LVELT23D	SY100ELT23LZI		8-SOIC
MC100LVELT23DR2	SY100ELT23LZI TR		8-SOIC Tape/Reel
MC100LVELT23DT		SY100EPT23VKI	8-TSSOP/MSOP
MC100LVELT23DTR2		SY100EPT23VKI TR	8-TSSOP/MSOP Tape/Reel
NB100ELT23LD	SY100ELT23LZI		8-SOIC
NB100ELT23LDR2	SY100ELT23LZI TR		8-SOIC Tape/Reel
MC100ELT24D	SY100ELT24ZI		8-SOIC
MC100ELT24DR2	SY100ELT24ZI TR		8-SOIC Tape/Reel
MC100ELT24DT		SY100EPT24VKI	8-TSSOP/MSOP
MC100ELT24DTR2		SY100EPT24VKI TR	8-TSSOP/MSOP Tape/Reel
MC100ELT25D	SY100ELT25ZI		8-SOIC
MC100ELT25DR2	SY100ELT25ZI TR		8-SOIC Tape/Reel
MC100ELT25DT	NA		8-TSSOP/MSOP
MC100ELT25DTR2	NA		8-TSSOP/MSOP Tape/Reel

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100ELT28D	SY100ELT28ZI		8-SOIC
MC100ELT28DR2	SY100ELT28ZITR		8-SOIC Tape/Reel
MC100ELT28DT	SY100ELT28KI		8-TSSOP/MSOP
MC100ELT28DTR2	SY100ELT28KITR		8-TSSOP/MSOP Tape/Reel
MC100EP11DT	SY100EP11UKI		8-TSSOP/MSOP
MC100EP11DTR2	SY100EP11UKI TR		8-TSSOP/MSOP Tape/Reel
MC100EP11D	SY100EP11UZI		8-SOIC
MC100EP11DR2	SY100EP11UZI TR		8-SOIC Tape/Reel
MC100LVEP11DT	SY100EP11UKI		8-TSSOP/MSOP
MC100LVEP11DTR2	SY100EP11UKI TR		8-TSSOP/MSOP Tape/Reel
MC100LVEP11D	SY100EP11UZI		8-SOIC
MC100LVEP11DR2	SY100EP11UZI TR		8-SOIC Tape/Reel
MC100EP14DT	SY100EP14UK4I		20-TSSOP
MC100EP14DTR2	SY100EP14UK4I TR		20-TSSOP Tape/Reel
MC100LVEP14DT	SY100EP14UK4I		20-TSSOP
MC100LVEP14DTR2	SY100EP14UK4I TR		20-TSSOP Tape/Reel
NA	SY100EP15VK4I		16-TSSOP
NA	SY100EP15VK4I TR		16-TSSOP Tape/Reel
MC100EP16DT	SY88927VKC	SY10EP16VKI	8-TSSOP/MSOP
MC100EP16DTR2	SY88927VKC TR	SY10EP16VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EP16D	SY88927VZC	SY10EP16VZI	8-SOIC
MC100EP16DR2	SY88927VZC TR	SY10EP16VZI TR	8-SOIC Tape/Reel
MC100EP16VSDT	SY100EP16VSKI		8-TSSOP/MSOP
MC100EP16VSDTR2	SY100EP16VSKI TR		8-TSSOP/MSOP Tape/Reel
MC100EPT20DT	SY100EPT20VKI		8-TSSOP/MSOP
MC100EPT20DTR2	SY100EPT20VKI TR		8-TSSOP/MSOP Tape/Reel
MC100EPT20D	SY100EPT20VZI		8-SOIC
MC100EPT20DR2	SY100EPT20VZI TR		8-SOIC Tape/Reel
MC100EPT21DT	SY100EPT21LKI		8-TSSOP/MSOP
MC100EPT21DTR2	SY100EPT21LKI TR		8-TSSOP/MSOP Tape/Reel
MC100EPT21D	SY100EPT21LZI		8-SOIC
MC100EPT21DR2	SY100EPT21LZI TR		8-SOIC Tape/Reel
MC100EPT22DT	SY100EPT22VKI		8-TSSOP/MSOP
MC100EPT22DTR2	SY100EPT22VKI TR		8-TSSOP/MSOP Tape/Reel
MC100EPT22D	SY100EPT22VZI		8-SOIC
MC100EPT22DR2	SY100EPT22VZI TR		8-SOIC Tape/Reel
MC100EPT23DT	SY100EPT23LKI		8-TSSOP/MSOP
MC100EPT23DTR2	SY100EPT23LKI TR		8-TSSOP/MSOP Tape/Reel
MC100EPT23D	SY100EPT23LZI		8-SOIC
MC100EPT23DR2	SY100EPT23LZI TR		8-SOIC Tape/Reel
NA	SY100EPT28LKI		8-TSSOP/MSOP
NA	SY100EPT28LKI TR		8-TSSOP/MSOP Tape/Reel
NA	SY100EPT28LZI		8-SOIC
NA	SY100EPT28LZI TR		8-SOIC Tape/Reel
MC100EP32DT	SY100EP32VKI		8-TSSOP/MSOP
MC100EP32DTR2	SY100EP32VKI TR		8-TSSOP/MSOP Tape/Reel
MC100EP32D	SY100EP32VZI		8-SOIC
MC100EP32DR2	SY100EP32VZI TR		8-SOIC Tape/Reel
MC100EP33DT	SY100EP33VKI		8-TSSOP/MSOP
MC100EP33DTR2	SY100EP33VKI TR		8-TSSOP/MSOP Tape/Reel

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100EP33D	SY100EP33VZI		8-SOIC
MC100EP33DR2	SY100EP33VZI TR		8-SOIC Tape/Reel
MC100EP51DT	NA	SY10EP51VKI	8-TSSOP/MSOP
MC100EP51DTR2	NA	SY10EP51VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EP51D	NA	SY10EP51VZI	8-SOIC
MC100EP51DR2	NA	SY10EP51VZI TR	8-SOIC Tape/Reel
MC100EP52DT	NA	SY10EP52VKI	8-TSSOP/MSOP
MC100EP52DTR2	NA	SY10EP52VKI TR	8-TSSOP/MSOP Tape/Reel
MC100EP52D	NA	SY10EP52VZI	8-SOIC
MC100EP52DR2	NA	SY10EP52VZI TR	8-SOIC Tape/Reel
MC100EP56DT	SY100EP56VK4I		20-TSSOP
MC100EP56DTR2	SY100EP56VK4I TR		20-TSSOP Tape/Reel
MC100EP56DW	SY100EP52VZI		8-SOIC
MC100EP56DWR2	SY100EP52VZI TR		8-SOIC Tape/Reel
MC100EP57DT	SY100EP57VK4I		20-TSSOP
MC100EP57DTR2	SY100EP57VK4I TR		20-TSSOP Tape/Reel
MC100EP57DW	NA	SY100EL57VZI	20-SOIC
MC100EP57DWR2	NA	SY100EL57VZI TR	20-SOIC Tape/Reel
MC100EP58DT	SY100EP58VKI		8-TSSOP/MSOP
MC100EP58DTR2	SY100EP58VKI TR		8-TSSOP/MSOP Tape/Reel
MC100EP58D	SY100EP58VZI		8-SOIC
MC100EP58DR2	SY100EP58VZI TR		8-SOIC Tape/Reel
MC100EP111FA	SY100EP111UTI		32-TQFP
MC100EP111FAR2	SY100EP111UTI TR|		32-TQFP Tape/Reel
MC100LVEP111FA	SY100EP111UTI		32-TQFP
MC100LVEP111FAR2	SY100EP111UTI TR|		32-TQFP Tape/Reel
MC100EP139DW	SY100S839VZI		20-SOIC
MC100EP139DWR2	SY100S839VZI TR		20-SOIC Tape/Reel
MC100EP139DT	NA	NA	20-TSSOP
MC100EP139DTR2	NA	NA	20-TSSOP Tape/Reel
MC100EP140D	SY100EP140LZI		8-SOIC
MC100EP140DR2	SY100EP140LZI TR		8-SOIC Tape/Reel
MC100EP210FA	SY100EP210UTI		32-TQFP
MC100EP210FAR2	SY100EP210UTI TR|		32-TQFP Tape/Reel
MC100EP195FA	SY100EP195VTI		32-TQFP
MC100EP195FAR2	SY100EP195VTI TR|		32-TQFP Tape/Reel
MC100EP196FA	SY100EP196VTI		32-TQFP
MC100EP196FAR2	SY100EP196VTI TR|		32-TQFP Tape/Reel
MC100H600FN	SY100H600JC		28-PLCC
MC100H600FNR2	SY100H600JCTR		28-PLCC Tape/Reel
MC100H601FN	SY100H601JC		28-PLCC
MC100H601FNR2	SY100H601JCTR		28-PLCC Tape/Reel
MC100H602FN	SY100H602JC		28-PLCC
MC100H602FNR2	SY100H602JCTR		28-PLCC Tape/Reel
MC100H603FN	SY100H603JC		28-PLCC
MC100H603FNR2	SY100H603JCTR		28-PLCC Tape/Reel
MC100H641FN	SY100H641JC		28-PLCC
MC100H641FNR2	SY100H641JCTR		28-PLCC Tape/Reel
MC100H643FN	SY100H643JC		28-PLCC
MC100H643FNR2	SY100H643JCTR		28-PLCC Tape/Reel

Notes:

1. Pin-for-pin, plug-in replacement: electrical specifications and pinout are 100% compatible.
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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC100H646FN	SY100H646LJC		28-PLCC
MC100H646FNR2	SY100H646LJCTR		28-PLCC Tape/Reel
MC10E016FN	SY10E016JC		28-PLCC
MC10E016FNR2	SY10E016JC TR		28-PLCC Tape/Reel
MC10E101FN	SY10E101JC		28-PLCC
MC10E101FNR2	SY10E101JC TR		28-PLCC Tape/Reel
MC10E104FN	SY10E104JC		28-PLCC
MC10E104FNR2	SY100E104JC TR		28-PLCC Tape/Reel
MC10E107FN	SY10E107JC		28-PLCC
MC10E107FNR2	SY10E107JC TR		28-PLCC Tape/Reel
MC10E111FN	SY10E111AEJC		28-PLCC
MC10E111FNR2	SY10E111AEJC TR		28-PLCC Tape/Reel
MC10LVE111FN	SY10E111LEJC		28-PLCC
MC10LVE111FNR2	SY10E111LEJC TR		28-PLCC Tape/Reel
MC10E112FN	SY10E112JC		28-PLCC
MC10E112FNR2	SY10E112JC TR		28-PLCC Tape/Reel
MC10E116FN	SY10E116JC		28-PLCC
MC10E116FNR2	SY10E116JC TR		28-PLCC Tape/Reel
MC10E122FN	SY10E122JC		28-PLCC
MC10E122FNR2	SY10E122JC TR		28-PLCC Tape/Reel
MC10E131FN	SY10E131JC		28-PLCC
MC10E131FNR2	SY10E131JC TR		28-PLCC Tape/Reel
MC10E136FN	SY10E136JC		28-PLCC
MC10E136FNR2	SY10E136JC TR		28-PLCC Tape/Reel
MC10E137FN	SY10E137JC		28-PLCC
MC10E137FNR2	SY10E137JC TR		28-PLCC Tape/Reel
MC10E141FN	SY10E141JC		28-PLCC
MC10E141FNR2	SY10E141JC TR		28-PLCC Tape/Reel
MC10E142FN	SY10E142JC		28-PLCC
MC10E142FNR2	SY10E142JC TR		28-PLCC Tape/Reel
MC10E143FN	SY10E143JC		28-PLCC
MC10E143FNR2	SY10E143JC TR		28-PLCC Tape/Reel
MC10E150FN	SY10E150JC		28-PLCC
MC10E150FNR2	SY10E150JC TR		28-PLCC Tape/Reel
MC10E151FN	SY10E151JC		28-PLCC
MC10E151FNR2	SY10E151JC TR		28-PLCC Tape/Reel
MC10E154FN	SY10E154JC		28-PLCC
MC10E154FNR2	SY10E154JC TR		28-PLCC Tape/Reel
MC10E155FN	SY10E155JC		28-PLCC
MC10E155FNR2	SY10E155JC TR		28-PLCC Tape/Reel
MC10E156FN	SY10E156JC		28-PLCC
MC10E156FNR2	SY10E156JC TR		28-PLCC Tape/Reel
MC10E157FN	SY10E157JC		28-PLCC
MC10E157FNR2	SY10E157JC TR		28-PLCC Tape/Reel
MC10E158FN	SY10E158JC		28-PLCC
MC10E158FNR2	SY10E158JC TR		28-PLCC Tape/Reel
MC10E160FN	SY10E160JC		28-PLCC
MC10E160FNR2	SY10E160JC TR		28-PLCC Tape/Reel
MC10E163FN	SY10E163JC		28-PLCC
MC10E163FNR2	SY10E163JC TR		28-PLCC Tape/Reel

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC10E164FN	SY10E164JC		28-PLCC
MC10E164FNR2	SY10E164JC TR		28-PLCC Tape/Reel
MC10E166FN	SY10E166JC		28-PLCC
MC10E166FNR2	SY10E166JC TR		28-PLCC Tape/Reel
MC10E167FN	SY10E167JC		28-PLCC
MC10E167FNR2	SY10E167JC TR		28-PLCC Tape/Reel
MC10E171FN	SY10E171JC		28-PLCC
MC10E171FNR2	SY10E171JC TR		28-PLCC Tape/Reel
MC10E175FN	SY10E175JC		28-PLCC
MC10E175FNR2	SY10E175JC TR		28-PLCC Tape/Reel
MC10E193FN	SY10E193JC		28-PLCC
MC10E193FNR2	SY10E193JC TR		28-PLCC Tape/Reel
MC10E195FN	SY10E195JC		28-PLCC
MC10E195FNR2	SY10E195JC TR		28-PLCC Tape/Reel
MC10E196FN	SY10E196JC		28-PLCC
MC10E196FNR2	SY10E196JC TR		28-PLCC Tape/Reel
MC10E197FN	SY10E197JC		28-PLCC
MC10E197FNR2	SY10E197JCTR		28-PLCC Tape/Reel
MC10E212FN	SY10E212JC		28-PLCC
MC10E212FNR2	SY10E212JC TR		28-PLCC Tape/Reel
MC10E241FN	SY10E241JC		28-PLCC
MC10E241FNR2	SY10E241JC TR		28-PLCC Tape/Reel
MC10E256FN	SY10E256JC		28-PLCC
MC10E256FNR2	SY10E256JC TR		28-PLCC Tape/Reel
MC10E336FN	SY10E336JC		28-PLCC
MC10E336FNR2	SY10E336JC TR		28-PLCC Tape/Reel
MC10E337FN	SY10E337JC		28-PLCC
MC10E337FNR2	SY10E337JC TR		28-PLCC Tape/Reel
MC10E404FN	SY10E404JC		28-PLCC
MC10E404FNR2	SY10E404JC TR		28-PLCC Tape/Reel
MC10E416FN	SY10E416JC		28-PLCC
MC10E416FNR2	SY10E416JC TR		28-PLCC Tape/Reel
MC10E417FN	SY10E417JC		28-PLCC
MC10E417FNR2	SY10E417JC TR		28-PLCC Tape/Reel
MC10E431FN	SY10E431JC		28-PLCC
MC10E431FNR2	SY10E431JC TR		28-PLCC Tape/Reel
MC10E445FN	SY10E445JC		28-PLCC
MC10E445FNR2	SY10E445JC TR		28-PLCC Tape/Reel
MC10E446FN	SY10E446JC		28-PLCC
MC10E446FNR2	SY10E446JC TR		28-PLCC Tape/Reel
MC10E451FN	SY10E451JC		28-PLCC
MC10E451FNR2	SY10E451JC TR		28-PLCC Tape/Reel
MC10E452FN	SY10E452JC		28-PLCC
MC10E452FNR2	SY10E452JC TR		28-PLCC Tape/Reel
MC10E457FN	SY10E457JC		28-PLCC
MC10E457FNR2	SY10E457JC TR		28-PLCC Tape/Reel
MC10EL01DR2	SY10EL01ZI TR		8-SOIC Tape/Reel
MC10EL04DT	NA	NA	8-TSSOP/MSOP
MC10EL04DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC10EL04D	SY10EL04ZI		8-SOIC

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC10EL04DR2	SY10EL04ZI TR		8-SOIC Tape/Reel
MC10EL05DT	NA	NA	8-TSSOP/MSOP
MC10EL05DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC10EL05D	SY10EL05ZI		8-SOIC
MC10EL05DR2	SY10EL05ZI TR		8-SOIC Tape/Reel
MC10EL07DT	NA	SY10EP05VKI	8-TSSOP/MSOP
MC10EL07DTR2	NA	SY10EP05VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL07D	SY10EL07ZI		8-SOIC
MC10EL07DR2	SY10EL07ZI TR		8-SOIC Tape/Reel
MC10EL11D	SY10EL11VZI		8-SOIC
MC10EL11DR2	SY10EL11VZI TR		8-SOIC Tape/Reel
MC10EL11DT		SY10EP11UKI	8-TSSOP/MSOP
MC10EL11DTR2		SY10EP11UKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL12DT	NA	NA	8-TSSOP/MSOP
MC10EL12DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC10EL12D	SY10EL12ZI		8-SOIC
MC10EL12DR2	SY10EL12ZI TR		8-SOIC Tape/Reel
MC10EL15D	SY10EL15ZI		16-SOIC
MC10EL15DR2	SY10EL15ZI TR		16-SOIC Tape/Reel
MC10EL16D	SY10EL16VZI		8-SOIC
MC10EL16DR2	SY10EL16VZI TR		8-SOIC Tape/Reel
MC10EL16DT	SY10EL16VKI		8-TSSOP/MSOP
MC10EL16DTR2	SY10EL16VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EL31DT	NA	SY10EP31VKI	8-TSSOP/MSOP
MC10EL31DTR2	NA	SY10EP31VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL31D	SY10EL31ZI		8-SOIC
MC10EL31DR2	SY10EL31ZI TR		8-SOIC Tape/Reel
MC10EL32DT	NA	SY10EP32VKI	8-TSSOP/MSOP
MC10EL32DTR2	NA	SY10EP32VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL32D	SY10EL32VZI		8-SOIC
MC10EL32DR2	SY10EL32VZI TR		8-SOIC Tape/Reel
MC10EL33DT	NA	SY10EP33VKI	8-TSSOP/MSOP
MC10EL33DTR2	NA	SY10EL33VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL33D	SY10EL33ZI		8-SOIC
MC10EL33DR2	SY10EL33ZITR		8-SOIC Tape/Reel
MC10EL34D	SY10EL34ZI		16-SOIC
MC10EL34DR2	SY10EL34ZITR		16-SOIC Tape/Reel
MC10EL35DT	NA	NA	8-TSSOP/MSOP
MC10EL35DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC10EL35D	SY10EL35ZI		8-SOIC
MC10EL35DR2	SY10EL35ZI TR		8-SOIC Tape/Reel
NA	SY10EL38ZI		8-SOIC
NA	SY10EL38ZI TR		8-SOIC Tape/Reel
MC10EL51DT	NA	SY10EP51VKI	8-TSSOP/MSOP
MC10EL51DTR2	NA	SY10EP51VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL51D	SY10EL51ZI		8-SOIC
MC10EL51DR2	SY10EL51ZITR		8-SOIC Tape/Reel
MC10EL52DT	NA	SY10EP52VKI	8-TSSOP/MSOP
MC10EL52DTR2	NA	SY10EP52VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL52D	SY10EL52ZI		8-SOIC

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC10EL52DR2	SY10EL52ZI TR		8-SOIC Tape/Reel
MC10EL57D	SY10EL57ZI		16-SOIC
MC10EL57DR2	SY10EL57ZITR		16-SOIC Tape/Reel
MC10EL58DT	NA	SY10EP58VKI	8-TSSOP/MSOP
MC10EL58DTR2	NA	SY10EP58VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL58D	SY10EL58ZI		8-SOIC
MC10EL58DR2	SY10EL58ZI TR		8-SOIC Tape/Reel
MC10EL89DT	NA	SY10EP89VKI	8-TSSOP/MSOP
MC10EL89DTR2	NA	SY10EP89VKI TR	8-TSSOP/MSOP Tape/Reel
MC10EL89D	SY10EL89ZI		8-SOIC
MC10EL89DR2	SY10EL89ZI TR		8-SOIC Tape/Reel
MC10SX1189D	SY10EL1189ZI		16-pin SOIC
MC10SX1189DR2	SY10EL1189ZI TR		16-pin SOIC Tape/Reel
MC10ELT20DT	NA	SY10EPT20VKI	8-TSSOP/MSOP
MC10ELT20DTR2	NA	SY10EPT20VKI TR	8-TSSOP/MSOP Tape/Reel
MC10ELT20D	SY10ELT20VZI		8-SOIC
MC10ELT20DR2	SY10ELT20VZI TR		8-SOIC Tape/Reel
MC10ELT21DT	NA	NA	8-TSSOP/MSOP
MC10ELT21DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC10ELT21D	SY10ELT21ZI		8-SOIC
MC10ELT21DR2	SY10ELT21ZI TR		8-SOIC Tape/Reel
MC10ELT22DT	NA	NA	8-TSSOP/MSOP
MC10ELT22DTR2	NA	NA	8-TSSOP/MSOP Tape/Reel
MC10ELT22D	SY10ELT22ZI		8-SOIC
MC10ELT22DR2	SY10ELT22ZI TR		8-SOIC Tape/Reel
NA	SY10ELT23ZI		8-SOIC
NA	SY10ELT23ZI TR		8-SOIC Tape/Reel
MC10ELT28D	SY10ELT28ZI		8-SOIC
MC10ELT28DR2	SY10ELT28ZITR		8-SOIC Tape/Reel
MC10ELT28DT	SY10ELT28KI		8-TSSOP/MSOP
NA	SY10ELT28KITR		8-TSSOP/MSOP Tape/Reel
MC10EP01DT	SY10EP01VKI		8-TSSOP/MSOP
MC10EP01DTR2	SY10EP01VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP01D	SY10EP01VZI		8-SOIC
MC10EP01DR2	SY10EP01VZITR		8-SOIC Tape/Reel
MC10EP05DT	SY10EP05VKI		8-TSSOP/MSOP
MC10EP05DTR2	SY10EP05VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP05D	SY10EP05VZI		8-SOIC
MC10EP05DR2	SY10EP05VZI TR		8-SOIC Tape/Reel
MC10EP08DT	SY10EP08VKI		8-TSSOP/MSOP
MC10EP08DTR2	SY10EP08VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP08D	SY10EP08VZI		8-SOIC
MC10EP08DR2	SY10EP08VZI TR		8-SOIC Tape/Reel
MC10EP11DT	SY10EP11UKI		8-TSSOP/MSOP
MC10EP11DTR2	SY10EP11UKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP11D	SY10EP11UZI		8-SOIC
MC10EP11DR2	SY10EP11UZI TR		8-SOIC Tape/Reel
MC10LVEP11DT	SY10EP11UKI		8-TSSOP/MSOP
MC10LVEP11DTR2	SY10EP11UKI TR		8-TSSOP/MSOP Tape/Reel
MC10LVEP11D	SY10EP11UZI		8-SOIC

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC10LVEP11DR2	SY10EP11UZI TR		8-SOIC Tape/Reel
MC10EP16DT	SY10EP16VKI		8-TSSOP/MSOP
MC10EP16DTR2	SY10EP16VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP16D	SY10EP16VZI		8-SOIC
MC10EP16DR2	SY10EP16VZI TR		8-SOIC Tape/Reel
MC10EPT20DT	SY10EPT20VKI		8-TSSOP/MSOP
MC10EPT20DTR2	SY10EPT20VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EPT20D	SY10EPT20VZI		8-SOIC
MC10EPT20DR2	SY10EPT20VZI TR		8-SOIC Tape/Reel
MC10EPT28DT	SY10EPT28LKI		8-TSSOP/MSOP
MC10EPT28DTR2	SY10EPT28LKI TR		8-TSSOP/MSOP Tape/Reel
MC10EPT28D	SY10EPT28LZI		8-SOIC
MC10EPT28DR2	SY10EPT28LZI TR		8-SOIC Tape/Reel
MC10EP31D	SY10EP31VZI		8-SOIC
MC10EP31DR2	SY10EP31VZITR		8-SOIC Tape/Reel
MC10EP31DT	SY10EP31VKI		8-TSSOP/MSOP
MC10EP31DTR2	SY10EP31VKITR		8-TSSOP/MSOP Tape/Reel
MC10EP32DT	SY10EP32VKI		8-TSSOP/MSOP
MC10EP32DTR2	SY10EP32VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP32D	SY10EP32VZI		8-SOIC
MC10EP32DR2	SY10EP32VZI TR		8-SOIC Tape/Reel
MC10EP33DT	SY10EP33VKI		8-TSSOP/MSOP
MC10EP33DTR2	SY10EP33VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP33D	SY10EP33VZI		8-SOIC
MC10EP33DR2	SY10EP33VZI TR		8-SOIC Tape/Reel
MC10EP51DT	SY10EP51VKI		8-TSSOP/MSOP
MC10EP51DTR2	SY10EP51VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP51D	SY10EP51VZI		8-SOIC
MC10EP51DR2	SY10EP51VZI TR		8-SOIC Tape/Reel
MC10EP52DT	SY10EP52VKI		8-TSSOP/MSOP
MC10EP52DTR2	SY10EP52VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP52D	SY10EP52VZI		8-SOIC
MC10EP52DR2	SY10EP52VZI TR		8-SOIC Tape/Reel
NA	SY10EP53VZI		8-SOIC
NA	SY10EP53VZI TR		8-SOIC Tape/Reel
MC10EP58DT	SY10EP58VKI		8-TSSOP/MSOP
MC10EP58DTR2	SY10EP58VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP58D	SY10EP58VZI		8-SOIC
MC10EP58DR2	SY10EP58VZI TR		8-SOIC Tape/Reel
MC10EP89DT	SY10EP89VKI		8-TSSOP/MSOP
MC10EP89DTR2	SY10EP89VKI TR		8-TSSOP/MSOP Tape/Reel
MC10EP89D	SY10EP89VZI		8-SOIC
MC10EP89DR2	SY10EP89VZI TR		8-SOIC Tape/Reel
MC10H350FN	SY10H350JC		28-PLCC
MC10H350FNR2	SY10H350JC TR		28-PLCC Tape/Reel
MC10H351FN	SY10H351JC		28-PLCC
MC10H351FNR2	SY10H351JC TR		28-PLCC Tape/Reel
MC10H352FN	SY10H352JC		28-PLCC
MC10H352FNR2	SY10H352JC TR		28-PLCC Tape/Reel
MC10H600FN	SY10H600JC		28-PLCC

Notes:

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ON Semiconductor Index (continued)

On Semiconductor	Micrel (Pin-for-Pin) Plug-In Replacement[1]	Micrel (Pin-for-Pin) Functional Equivalent[2]	Package
MC10H600FNR2	SY10H600JC TR		28-PLCC Tape/Reel
MC10H601FN	SY10H601JC		28-PLCC
MC10H601FNR2	SY10H601JC TR		28-PLCC Tape/Reel
MC10H602FN	SY10H602JC		28-PLCC
MC10H602FNR2	SY10H602JC TR		28-PLCC Tape/Reel
MC10H603FN	SY10H603JC		28-PLCC
MC10H603FNR2	SY10H603JC TR		28-PLCC Tape/Reel
MC10H606FN	SY10H606JC		28-PLCC
MC10H606FNR2	SY10H606JC TR		28-PLCC Tape/Reel
MC10H607FN	SY10H607JC		28-PLCC
MC10H607FNR2	SY10H607JC TR		28-PLCC Tape/Reel
MC10H641FN	SY10H641JC		28-PLCC
MC10H641FNR2	SY10H641JC TR		28-PLCC Tape/Reel
MC10H646FN	SY10H646LJC		28-PLCC
MC10H646FNR2	SY10H646LJC TR		28-PLCC Tape/Reel
MC12429FN		SY89429AJC (Ref In) or VJC (XTAL In)	28-PLCC
MC12429FNR2		SY89429AJC TR (Ref In) or VJC TR(XTAL In)	28-PLCC Tape/Reel
MC12429FA	NA	NA	32-TQFP
MC12429FAR2	NA	NA	32-TQFP
MC12429FN		SY89430AJC (Ref In) or VJC (XTAL In)	28-PLCC
MC12429FNR2		SY89430AJC TR (Ref In) or VJC TR(XTAL In)	28-PLCC Tape/Reel
MC12430FA	NA	NA	32-TQFP
MC12430FAR2	NA	NA	32-TQFP
MC12430FN		SY89430AJC (Ref In) or VJC (XTAL In)	28-PLCC
MC12430FNR2		SY89430AJC TR (Ref In) or VJC TR(XTAL In)	28-PLCC Tape/Reel
MC100EP809FA	SY89809LTC		32-TQFP
MC100EP809FAR2	SY89809LTC TR		32-TQFP Tape/Reel

Notes:

1. Pin-for-pin, plug-in replacement: electrical specifications and pinout are 100% compatible.
2. Pin-for-pin, functional replacement: Micrel replacement is pin-for-pin compatible, DC and AC parameters are compatible for most applications, but may not be 100% functionally compatible for all applications.

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Packaging for Automatic Handling — Tape & Reel

General Description

Tape & Reel

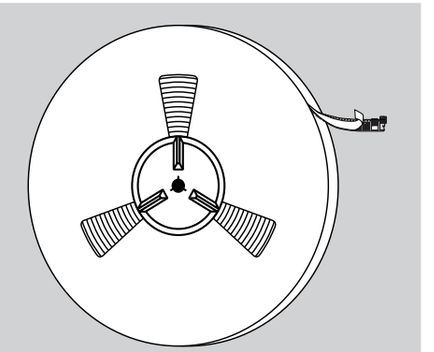
Surface mount and TO-92 devices are available in tape and reel packaging. Surface mount components are retained in an embossed carrier tape by a cover tape. TO-92 device leads are secured to a backing tape by a cover tape. The tape is spooled on standard size reels.

Tape & Reel Standards

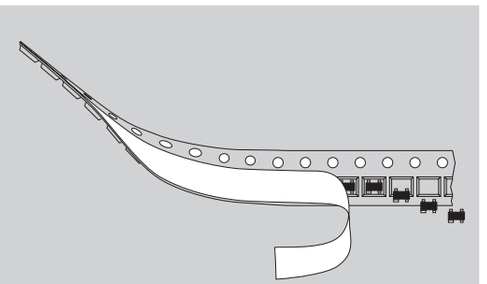
Embossed tape and reel packaging conforms to ANSI/EIA-481-C-2003 with exception of SOT-23, SC-70, TSOT, SOT-143 and SOT-223.

Pricing

Contact the factory for price adder and availability.



Typical 13" Reel for Surface Mount Components



Carrier and Cover Tape

Packages Available in Tape & Reel[1]

Part Number[2]	Package Description	HBW (Max.) Qty/ Reel	Analog (Std.) Qty/ Reel	Reel Diameter (in.)	Carrier Tape Width (mm)	Carrier Tape Pitch (mm)
*MICxxxxx***M** TR *SYxxxxxxxxxx* TR	SOIC-8	3,000	2,500	13"	12	8
	SOIC-14	—	2,500	13"	16	8
	SOIC-16	3,000	2,500	13"	16	8
*MICxxxx***WM** TR *MICxxxx***WME** TR *SYxxxxxxxxxx* TR	Wide SOIC-8	—	1,000	13"	16	12
	Wide SOIC-14	—	1,000	13"	16	12
	Wide SOIC-16	1,000	1,000	13"	16	12
	Wide SOIC-18	—	1,000	13"	24	16
	Wide SOIC-20	1,000	1,000	13"	24	12
	Wide SOIC-24	1,000	1,000	13"	24	12
	Wide SOIC-28 Wide EPAD-SOIC-28	1,000 1,000	1,000 1,000	13" 13"	32 32	16 16
*MICxxxx***MME** TR *MICxxxx***MM** TR *SYxxxxxxxxxx* TR	EPAD-MSOP-8 MSOP-8 (MM8™)	2,500 2,500	— 2,500	13" 13"	12 12	8 8
	EPAD-MSOP-10 MSOP-10	2,500 2,500	— 2,500	13" 13"	12 12	8 8
*MICxxxx***SM** TR	SSOP-16	—	1,000	13"	16	12
	SSOP-20	—	1,000	13"	16	12
	SSOP-24	—	1,000	13"	16	12
	SSOP-28	—	1,000	13"	16	12
KSxxxx TR	SSOP-48	—	1,000	13"	32	16

Notes:

1. Other packages available. Contact factory.
2. MICxxxxx = base part number. Example: MIC2557BM TR or SYxxxxxxxxxx = base part number. Example: SY100EP140LZI TR.

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Packages Available in Tape & Reel[1]

Part Number[2]	Package Description	HBW (Max.) Qty/ Reel	Analog (Std.) Qty/ Reel	Reel Diameter (in.)	Carrier Tape Width (mm)	Carrier Tape Pitch (mm)
*MICxxxx***QSE** TR *MICxxxx***QS** TR	EPAD-QSOP-16 QSOP-16	2,500 —	— 2,500	13" 13"	12 12	8 8
	QSOP-20	—	2,500	13"	12	8
*MICxxxx***TS** TR *SYxxxxxxxxxx* TR	TSSOP-8	—	2,500	13"	12	8
	TSSOP-14	—	2,500	13"	12	8
	TSSOP-16	2,500	2,500	13"	12	8
*MICxxxx***TSE** TR	EPAD-TSSOP-20 TSSOP-20	— 2,500	2,500 2,500	13" 13"	16 16	8 8
	TSSOP-24	—	2,500	13"	16	8
	TSSOP-28	—	2,500	13"	16	8
*MICxxxxx***V** TR *SYxxxxxxxxxx* TR	PLCC-20	1,000	1,000	13"	16	12
	PLCC-28	750	750	13"	24	16
	PLCC-44	500	500	13"	32	24
*MICxxxxx***C3** TR, TX	SC-70-3	—	3,000	7"	8	4
*MICxxxxx***C4** TR	SC-70-4	—	3,000	7"	8	4
*MICxxxxx***C5** TR	SC-70-5	—	3,000	7"	8	4
*MICxxxxx***C6** TR, TX	SC-70-6	—	3,000	7"	8	4
*MICxxxxx***M4** TR *MICxxxx***U**[3]	SOT-143 SOT-143	— —	3,000 3,000	7" 7"	8 8	4 4
*MICxxxxx***M3** TR *MICxxxx***U**[3]	SOT-23-3 SOT-23-3	— —	3,000 3,000	7" 7"	8 8	4 4
*MICxxxxx***M5** TR, TX *MICxxxx***U**[3]	SOT-23-5 SOT-23-5	— —	3,000 3,000	7" 7"	8 8	4 4
*MICxxxxx***M6** TR	SOT-23-6	—	3,000	7"	8	4
*MICxxxxx***M8** TR	SOT-23-8	—	3,000	7"	8	4
*MICxxxxx***S** TR	SOT-223	—	2,500	13"	16	12
*MICxxxxx***D** TR, TX	TSOT-5	—	3,000	7"	8	4
*MICxxxxx***U** TR	TO-263-3	—	750	13"	24	16
	TO-263-5	—	750	13"	24	16
*MICxxxxx***Z** TR	TO-92-3	—	2,000	14¼"[4]	—	1/2"
SYxxxxxxxxxx TR *MICxxxxx***TQE** TR *MICxxxxx***TQ** TR	EPAD-TQFP-32 TQFP-32	2,000 2,000	— —	13" 13"	16 16	12 12
	TQFP-48	2,000	2,000	13"	16	12
SYxxxxxxxxxx TR	EPAD-TQFP-64	1,500	—	13"	24	16
*MICxxxxx***LQ** TR	LQFP-44	—	1,000	13"	24	16
SYxxxxxxxxxx TR	LQFP-52	1,000	—	13"	24	16
*MICxxxxx***R** TR	S-PAK-03	—	750	13"	24	12
	S-PAK-05	—	750	13"	24	12
	S-PAK-07	—	750	13"	24	12

Notes:
1. Other packages available. Contact factory.
2. MICxxxxx = base part number. Example: MIC2557BM TR or SYxxxxxxxxxx = base part number. Example: SY100EP140LZI TR.
3. Former Electronic Technology Corp. voltage supervisors. MICxxxx = base part number + voltage option designator (if needed) + timeout or tolerance designator (if needed). Example: MIC809LU.
4. Cardboard reel.

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Packages Available in Tape & Reel[1]

Part Number[2]	Package Description	HBW (Max.) Qty/ Reel	Analog (Std.) Qty/ Reel	Reel Diameter (in.)	Carrier Tape Width (mm)	Carrier Tape Pitch (mm)
*MICxxxxx***ML** TR[5] *SYxxxxxxxxxx* TR	MLF22D-06	—	5,000	13”	8	4
	MLF22D-08	5,000	5,000	13”	8	4
	MLF33D-10	—	5,000	13”	12	8
	MLF33Q-16	5,000	5,000	13”	12	8
	MLF44D-08	—	5,000	13”	12	8
	MLF44D-12	—	5,000	13”	12	8
	MLF44Q-16	—	5,000	13”	12	8
	MLF44Q-24	5,000	5,000	13”	12	8
	MLF55Q-32	5,000	5,000	13”	12	8

Notes:
1. Other packages available. Contact factory.
2. MICxxxxx = base part number. Example: MIC2557BM TR or SYxxxxxxxxxx = base part number. Example: SY100EP140LZI TR.
5. MLFxyz-nn
   x = package body dimensions (mm) in X direction.
   y = package body dimensions (mm) in Y direction.
   z = Q or D (Quad or Dual–leads on 4 or 2 sides of the package).
   nn = # of leads.

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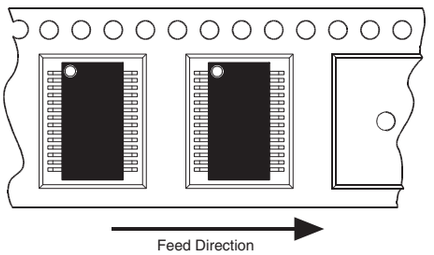
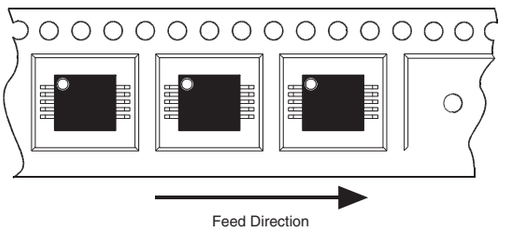
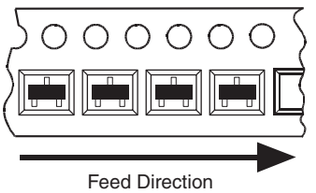
Package Orientation



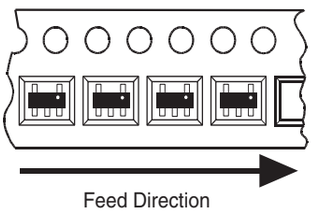
Typical SOIC, WSOIC, SOP, SSOP, TSSOP, EPAD-TSSOP, QSOP, EPAD-QSOP (All Lead Counts)



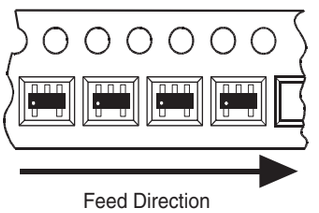
Typical MSOP-8, EPAD-MSOP-8, MSOP-10, EPAD-MSOP-10



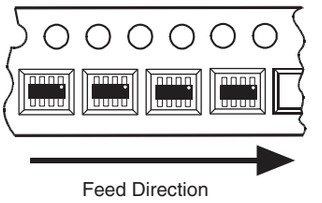
Typical SOT-23-3 and SC-70-3 (1)



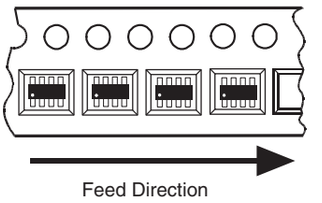
Typical SOT-23-5, TSOT-5, SC-70-5 (1) (TR)



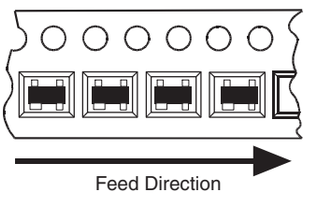
Typical SOT-23-5, TSOT-5, SC-70-5 (TX)



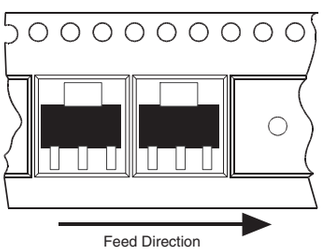
Typical SOT-23-6, SC-70-6, SOT-23-8 (1) (TR)



Typical SOT-23-6, SC-70-6, SOT-23-8 (1) (TX)



Typical SOT-143 (1)



Typical SOT-223 (1)

Note:
1. Orientation of device in carrier tape pocket does not conform to ANSI/EIA-481-C-2003.

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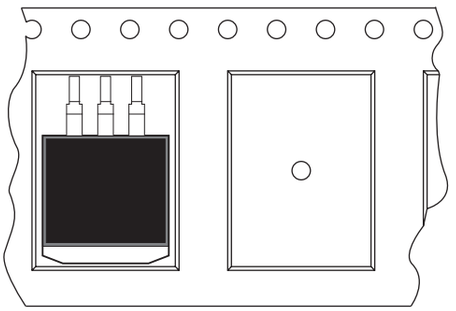
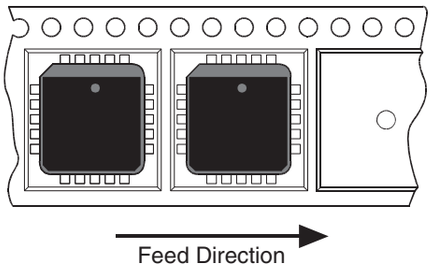
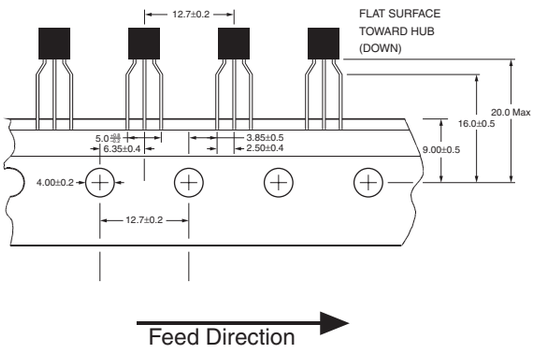
Package Orientation



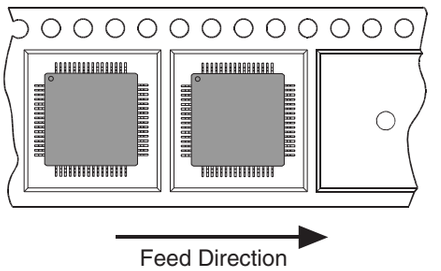
Typical TO-263, S-PAK



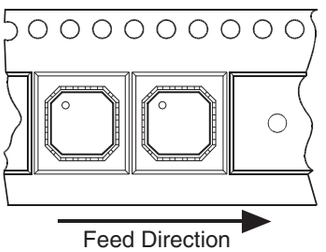
Typical PLCC



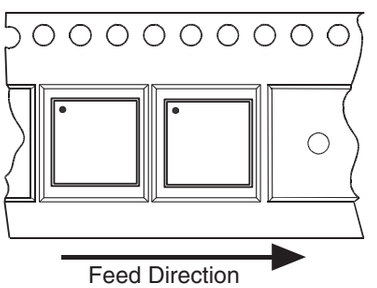
Typical TO-92-3



Typical TQFP, EPAD-TQFP, LQFP



Typical MLF™ (punched)



Typical MLF™ (sawn)

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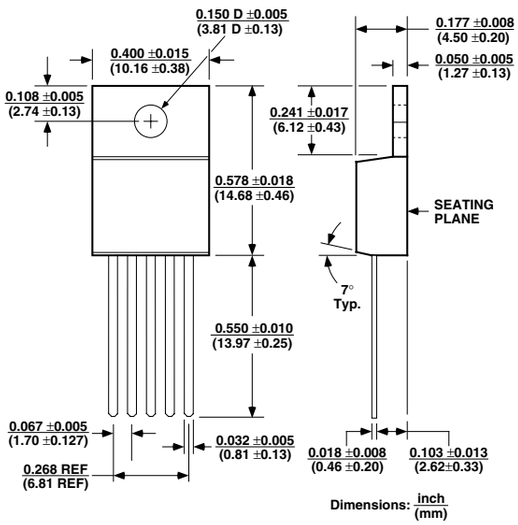
Lead Bend Options — 5-Lead TO-220 Package

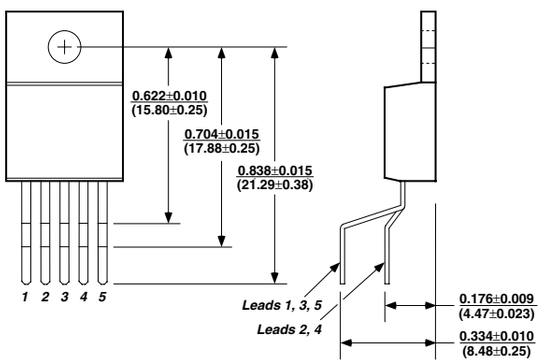
Part Number	Package	Replaces National Semi.
MICxxxxyT-L2	5-lead TO-220	TA05B (-LB02), T05C(1)
MICxxxxyT-L3	5-lead TO-220	T05D (-LB-03), T05B(1)

Note:
1. Leads not trimmed after bending.

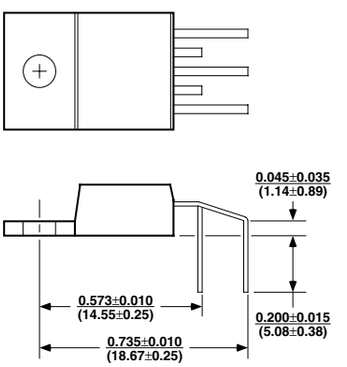
1000-piece minimum order.
Contact factory for price adder and availability.



5-lead TO-220 Basic Dimensions



TO-220 Vertical Lead Bend Option (L3)



TO-220 Horizontal Lead Bend Option (L2)

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Die Distribution

Micrel die is distributed by:

NORTH AMERICA — DIE DISTRIBUTION ONLY

Chip Supply, Inc.
7225 Orange Blossom Trail
Orlando, FL 32810-2696
USA
Tel: + 1 (407) 298-7100
Fax: + 1 (407) 290-0164

ES Components, Inc.
108 Pratts Junction Rd.
Sterling, MA 01564
USA
Tel: + 1 (978) 422-7641
Fax: + 1 (978) 422-0011

EUROPE — DIE DISTRIBUTION ONLY

Chip Supply, Inc.
5 Queen Street
Oldham OL1 1RD
United Kingdom
Tel: + 44 (1616) 336627
Fax: + 44 (1616) 260380

Die Technology, Ltd.
Corbrook Road
Chatterton
Oldham
Lancashire, OL9 9SD
United Kingdom
Tel: + 44 (0) 1603-788967
Fax: + 44 (0) 1604-788920

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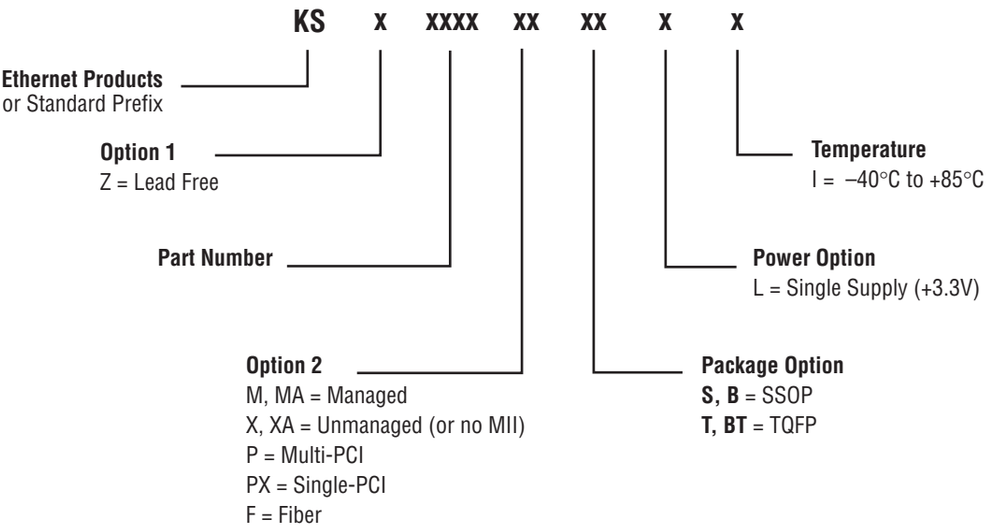
Ethernet Part Identification



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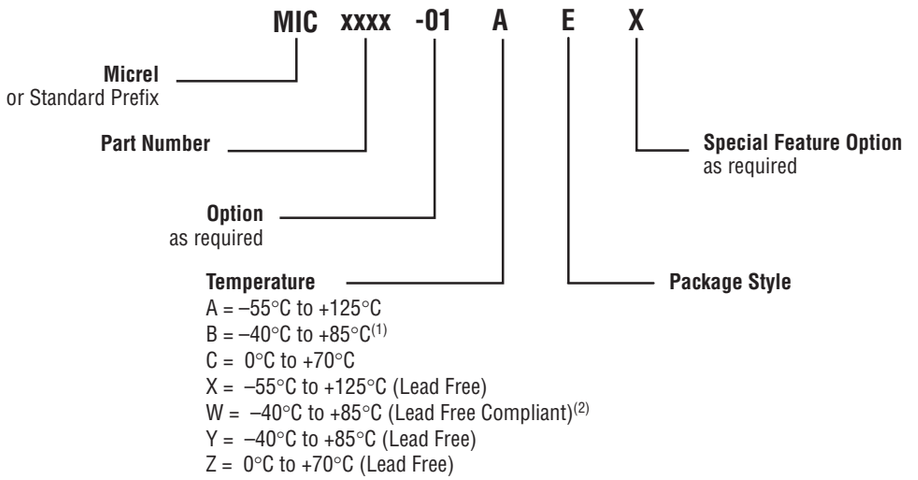
Analog Part Identification

Micrel Analog Standard



Notes:

1. Typically industrial grade power products rate the junction temperature up to +125°C. Refer to the data sheet.
2. Applicable to TO-220, TO-263, SOT-223, WSOIC, S-PAK packages using 85% lead plus lead alloy die attach material.

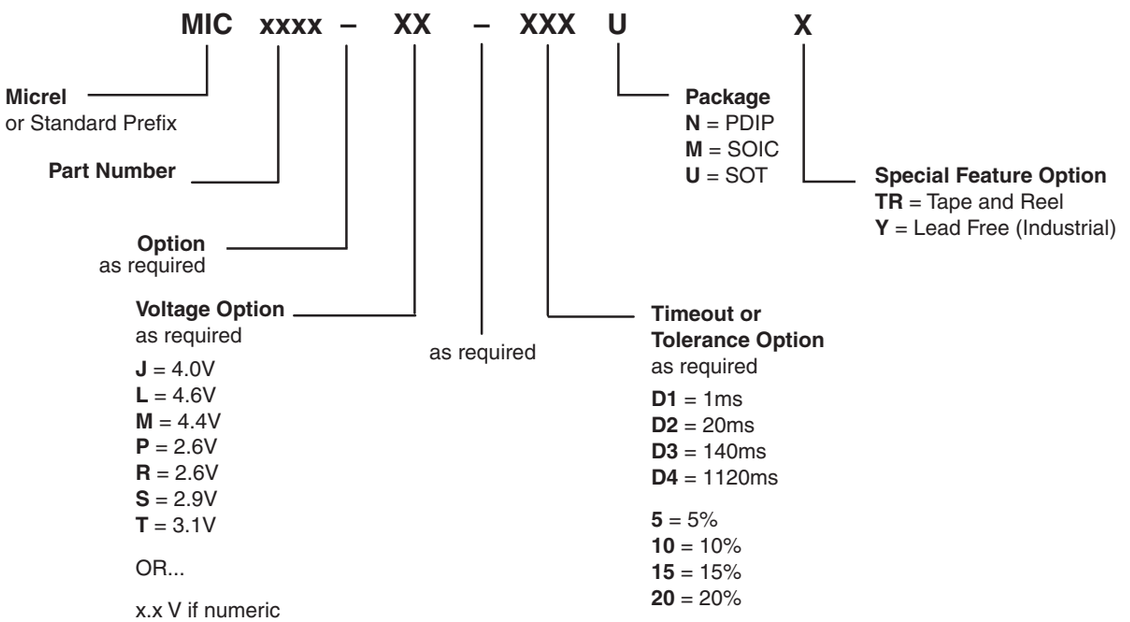
C3= SC70-3
C4 = SC70-4
C5 = SC70-5
C6 = SC70-6
D5 = Thin SOT-23-5
J = Ceramic DIP
LQ = LQFP (Low Profile QFP)
M = 150 mil SOIC
ML = MLF™

MM = MSOP
MME = EPAD-MSOP
M3 = SOT-23-3
M4 = SOT-143
M5 = SOT-23-5
M6 = SOT-23-6
M8 = SOT-23-8
N = Plastic DIP

QS = QSOP
QSE = EPAD-QSOP
R = SPAK
S = SOT-223
SM = SSOP
T = TO-220
TS = TSSOP
TSE = EPAD-TSSOP

TQ = TQFP
TQE = EPAD-TQFP
U = TO-263
V = PLCC
WM = 300 mil Wide SOIC
WME = 300 mil Wide EPAD-SOIC
WT = TO-247
Z = TO-92

Industry Standard Voltage Supervisors



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Analog Marking Information

Teeny™, IttyBitty®, and TinyFET® Part Identification

Teeny™ SC-70, IttyBitty®, TinyFET®, and other SOT-143, or SOT-23 packaged devices use abbreviated markings for identification because of their small size.

Mark	Part Number	Description	Note
A11	MIC6211BM5	IttyBitty® Op Amp	
A12	LMC7101BIM5	Low-Power Operational Amplifier	
A12A	LMC7101AIM5	[Improved Precision] Low-Power Op Amp	
A13	MIC7111BM5	2.4V IttyBitty® Rail-to-Rail Input/Output Op Amp	
A14	MIC7211BM5	IttyBitty® Rail-to-Rail Input Comparator	Push-pull output
A15	MIC7221BM5	IttyBitty® Rail-to-Rail Input Comparator	Open-drain output
A16	MIC7201BM5	GainBlock™ Difference Amplifier	
A17	MIC7300BM5	High-Output Drive Rail-to-Rail Op Amp	
A21	MIC910BM5	135MHz Low-Power SOT-23-5 Op Amp	
A22	MIC911BM5	105MHz Low-Power SOT-23-5 Op Amp	
A23	MIC912BM5	200MHz Low-Power SOT-23-5 Op Amp	
A24	MIC913BM5	350MHz Low-Power SOT-23-5 Op Amp	
A26	MIC914BM5	160MHz Low-Power SOT-23-5 Op Amp	
A30	MIC918BC5	51MHz Low-Power SOT-23-5/SC-70 Op Amp	
A31	MIC919BC5	27MHz Low-Power SOT-23-5/SC-70 Op Amp	
A32	MIC860BC5	Teeny™ Ultra Low-Power Op Amp	
A33	MIC861BC5	Teeny™ Ultra Low-Power Op Amp	
A34	MIC862BM8	Dual Ultra Low-Power Op Amp SOT-23-8	
A35	MIC863BM8	Dual Ultra Low-Power Op Amp SOT-23-8	
A37	MIC920BC5	80MHz Low-Power SC-70 Op Amp	
A38	MIC921BC5	45MHz Low-Power SC-70 Op Amp	
A39	MIC922BC5	230MHz Low-Power SC-70 Op Amp	
A40	MIC923BC5	410MHz Low-Power SC-70 Op Amp	
A51	MIC6251BM5	IttyBitty® Instrumentation Amplifier	+2, +1, –1 gain amp.
A52	MIC6252BM5	IttyBitty® Instrumentation Amplifier	+0.5, +1 gain amp.,avg. value amp.
B10	MIC6270BM5	IttyBitty® Comparator	
B11	MIC833BM5	Latched Comparator with Reference	
B12	MIC834BM5	Comparator with Reference	
B13	MIC841HBC5	Comparator with Reference in SC70-5	
B14	MIC841LBC5	Comparator with Reference in SC70-5	
B15	MIC841NBC5	Comparator with Reference in SC70-5	
B16	MIC842HBC5	Comparator with Reference in SC70-5	
B17	MIC842LBC5	Comparator with Reference in SC70-5	
B18	MIC842NBC5	Comparator with Reference in SC70-5	
C10	MIC2660BM5	IttyBitty® Charge Pump	
D10	MIC4416BM4	IttyBitty® Low-Side MOSFET Driver	Non-inverting
D11	MIC4417BM4	IttyBitty® Low-Side MOSFET Driver	Inverting
ML10	MIC4416BM4	IttyBitty® Low-Side MOSFET Driver	
F10	MIC2514BM5	IttyBitty® Integrated High-Side Switch	
H10	MIC5018BM4	IttyBitty® High-Side MOSFET Driver	Non-inverting
MH10	MIC5018BM4	IttyBitty® High-Side MOSFET Driver	
IJ	ETC/MIC809JU	Microprocessor Reset Circuit	4.00V
IL	ETC/MIC809LU…	Microprocessor Reset Circuit	4.63V
IM	ETC/MIC809MU…	Microprocessor Reset Circuit	4.38V
IR	ETC/MIC809RU…	Microprocessor Reset Circuit	2.63V
IS	ETC/MIC809SU…	Microprocessor Reset Circuit	2.93V
IT	ETC/MIC809TU…	Microprocessor Reset Circuit	3.08V
JJ	ETC/MIC810JU…	Microprocessor Reset Circuit	
JL	ETC/MIC810LU…	Microprocessor Reset Circuit	4.63V
JM	ETC/MIC810MU…	Microprocessor Reset Circuit	4.38V
JR	ETC/MIC810RU…	Microprocessor Reset Circuit	2.63V
JS	ETC/MIC810SU…	Microprocessor Reset Circuit	2.93V
JT	ETC/MIC810TU…	Microprocessor Reset Circuit	3.08V
KJ	ETC/MIC811JU	Microprocessor Reset Circuit	4.00V
KL	ETC/MIC811LU…	Microprocessor Reset Circuit	4.63V
KM	ETC/MIC811MU…	Microprocessor Reset Circuit	4.38V
KR	ETC/MIC811RU…	Microprocessor Reset Circuit	2.63V
KS	ETC/MIC811SU…	Microprocessor Reset Circuit	2.93V
KS	MIC811SUY	Microprocessor Reset Circuit	
KT	ETC/MIC811TU…	Microprocessor Reset Circuit	3.08V
LAN	MIC5213-1.8BC5	Teeny™ SC-70 µCap LDO Regulator	
LAM	MIC5213-2.5BC5	Teeny™ SC-70 µCap LDO Regulator	
LAQ	MIC5213-2.6BC5	Teeny™ SC-70 µCap LDO Regulator	
LAL	MIC5213-2.7BC5	Teeny™ SC-70 µCap LDO Regulator	
LAJ	MIC5213-2.8BC5	Teeny™ SC-70 µCap LDO Regulator	
LAG	MIC5213-3.0BC5	Teeny™ SC-70 µCap LDO Regulator	
LAE	MIC5213-3.3BC5	Teeny™ SC-70 µCap LDO Regulator	
LAD	MIC5213-3.6BC5	Teeny™ SC-70 µCap LDO Regulator	
LAB	MIC5213-5.0BC5	Teeny™ SC-70 µCap LDO Regulator	

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Analog Marking Information

Mark	Part Number	Description	Note
LA28	MIC5203-2.8BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output (also see LK)
LA30	MIC5203-3.0BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA33	MIC5203-3.3BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA36	MIC5203-3.6BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA38	MIC5203-3.8CM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA40	MIC5203-4.0BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA45	MIC5203-4.5BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA47	MIC5203-4.7BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LA50	MIC5203-5.0BM4	80mA Low-Dropout Regulator (SOT-143)	Fixed output
LBAA	MIC5205BM5	150mA Low-Dropout Regulator	Adjustable output
KBAA	MIC5205YM5	150mA Low-Dropout Regulator	Fixed output
LB38	MIC5205-3.8BM5	150mA Low-Dropout Regulator	Fixed output
LB40	MIC5205-4.0BM5	150mA Low-Dropout Regulator	Fixed output
LB25	MIC5205-2.5BM5	150mA Low-Dropout Regulator	Fixed output
KB25	MIC5205-2.5YM5	150mA Low-Dropout Regulator	Fixed output
LB27	MIC5205-2.7BM5	150mA Low-Dropout Regulator	Fixed output
LB2J	MIC5205-2.85BM5	150mA Low-Dropout Regulator	Fixed output
LB28	MIC5205-2.8BM5	150mA Low-Dropout Regulator	Fixed output
LB29	MIC5205-2.9BM5	150mA Low-Dropout Regulator	Fixed output
LB30	MIC5205-3.0BM5	150mA Low-Dropout Regulator	Fixed output
LB31	MIC5205-3.1BM5	150mA Low-Dropout Regulator	Fixed output
LB32	MIC5205-3.2BM5	150mA Low-Dropout Regulator	Fixed output
LB33	MIC5205-3.3BM5	150mA Low-Dropout Regulator	Fixed output
LB36	MIC5205-3.6BM5	150mA Low-Dropout Regulator	Fixed output
LB38	MIC5205-3.8BM5	150mA Low-Dropout Regulator	Fixed output
LB40	MIC5205-4.0BM5	150mA Low-Dropout Regulator	Fixed output
LB48	MIC5205-4.8BM5	150mA Low-Dropout Regulator	Fixed output
LB50	MIC5205-4.0BM5	150mA Low-Dropout Regulator	Fixed output
LDAA	MIC5206BM5	150mA Low-Noise LDO Regulator	Adjustable output
LD25	MIC5206-2.5BM5	150mA Low-Noise LDO Regulator	Fixed output
LD27	MIC5206-2.7BM5	150mA Low-Noise LDO Regulator	Fixed output
LD2J	MIC5206-2.85BM5	150mA Low-Noise LDO Regulator	Fixed output
LD29	MIC5206-2.9BM5	150mA Low-Noise LDO Regulator	Fixed output
LD30	MIC5206-3.0BM5	150mA Low-Noise LDO Regulator	Fixed output
LD32	MIC5206-3.2BM5	150mA Low-Noise LDO Regulator	Fixed output
LD33	MIC5206-3.3BM5	150mA Low-Noise LDO Regulator	Fixed output
LD34	MIC5206-3.4BM5	150mA Low-Noise LDO Regulator	Fixed output
LD36	MIC5206-3.6BM5	150mA Low-Noise LDO Regulator	Fixed output
LD38	MIC5206-3.8BM5	150mA Low-Noise LDO Regulator	Fixed output
LD40	MIC5206-4.0BM5	150mA Low-Noise LDO Regulator	Fixed output
LD41	MIC5206-4.15BM5	150mA Low-Noise LDO Regulator	Fixed output
LD50	MIC5206-5.0BM5	150mA Low-Noise LDO Regulator	Fixed output
LEAA	MIC5207BM5	180mA Low-Noise LDO Regulator	Adjustable output
LE13	MIC5207-1.3BM5	180mA Low-Noise LDO Regulator	Fixed output
LE18	MIC5207-1.8BM5	180mA Low-Noise LDO Regulator	Fixed output
LE25	MIC5207-2.5BM5	180mA Low-Noise LDO Regulator	Fixed output
LE28	MIC5207-2.8BM5	180mA Low-Noise LDO Regulator	Fixed output
LE29	MIC5207-2.9BM5	180mA Low-Noise LDO Regulator	Fixed output
LE30	MIC5207-3.0BM5	180mA Low-Noise LDO Regulator	Fixed output
LE31	MIC5207-3.1BM5	180mA Low-Noise LDO Regulator	Fixed output
LE32	MIC5207-3.2BM5	180mA Low-Noise LDO Regulator	Fixed output
LE33	MIC5207-3.3BM5	180mA Low-Noise LDO Regulator	Fixed output
LE36	MIC5207-3.6BM5	180mA Low-Noise LDO Regulator	Fixed output
LE38	MIC5207-3.8BM5	180mA Low-Noise LDO Regulator	Fixed output
LE40	MIC5207-4.0BM5	180mA Low-Noise LDO Regulator	Fixed output
LE50	MIC5207-5.0BM5	180mA Low-Noise LDO Regulator	Fixed output
NE18	MIC5207-1.8BD5	180mA Low-Noise LDO Regulator	Fixed output
LFBB	MIC5211-1.8BM6	Dual 50mA LDO Voltage Regulator	Fixed output, special code
LFCC	MIC5211-2.5BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFDD	MIC5211-2.7BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFEE	MIC5211-2.8BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFGG	MIC5211-3.0BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFLL	MIC5211-3.3BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFQQ	MIC5211-3.6BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFXX	MIC5211-5.0BM5	Dual 50mA LDO Voltage Regulator	Fixed output
LFBC	MIC5211-1.8/2.5BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFBL	MIC5211-1.8/3.3BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFCL	MIC5211-2.5/3.3BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LFLX	MIC5211-3.3/5.0BM6	Dual 50mA LDO Voltage Regulator	Fixed output
LGAA	MIC5219BM5	500mA-Peak Output LDO Regulator	Adjustable output
LG25	MIC5219-2.5BM5	500mA-Peak Output LDO Regulator	Fixed output
LG18	MIC5219-1.8BM5	500mA-Peak Output LDO Regulator	Fixed output
LG30	MIC5219-3.0BM5	500mA-Peak Output LDO Regulator	Fixed output
LG31	MIC5219-3.0BM5	500mA-Peak Output LDO Regulator	Fixed output
LG33	MIC5219-3.3BM5	500mA-Peak Output LDO Regulator	Fixed output
LG36	MIC5219-3.6BM5	500mA-Peak Output LDO Regulator	Fixed output
LG50	MIC5219-5.0BM5	500mA-Peak Output LDO Regulator	Fixed output
LG26	MIC5219-2.6BM5	500mA-Peak Output LDO Regulator	Fixed output
LG27	MIC5219-2.7BM5	500mA-Peak Output LDO Regulator	Fixed output
LG2J	MIC5219-2.85BM5	500mA-Peak Output LDO Regulator	Fixed output
LG28	MIC5219-2.8BM5	500mA-Peak Output LDO Regulator	Fixed output
LG29	MIC5219-2.9BM5	500mA-Peak Output LDO Regulator	Fixed output

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Analog Marking Information

Mark	Part Number	Description	Note
LHAA	MIC5216BM5	500mA-Peak Output LDO Regulator	Adjustable output
LH25	MIC5216-2.5BM5	500mA-Peak Output LDO Regulator	Fixed output
LH30	MIC5216-3.0BM5	500mA-Peak Output LDO Regulator	Fixed output
LH33	MIC5216-3.3BM5	500mA-Peak Output LDO Regulator	Fixed output
LH36	MIC5216-3.6BM5	500mA-Peak Output LDO Regulator	Fixed output
LH38	MIC5216-3.8BM5	500mA-Peak Output LDO Regulator	Fixed output
LH40	MIC5216-4.0BM5	500mA-Peak Output LDO Regulator	Fixed output
LH50	MIC5216-5.0BM5	500mA-Peak Output LDO Regulator	Fixed output
LK26	MIC5203-2.6BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output (also see LA)
LK28	MIC5203-2.8BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK30	MIC5203-3.0BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK33	MIC5203-3.3BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK36	MIC5203-3.6BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK38	MIC5203-3.8BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK40	MIC5203-4.0BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK45	MIC5203-4.5BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK47	MIC5203-4.7BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LK50	MIC5203-5.0BM5	80mA Low-Dropout Regulator (SOT-23-5)	Fixed output
LLAA	MIC5270BM5	IttyBitty® Negative Low-Dropout Regulator	Adjustable output
LL30	MIC5270-3.0BM5	IttyBitty® Negative Low-Dropout Regulator	Fixed output
LL41	MIC5270-4.1BM5	IttyBitty® Negative Low-Dropout Regulator	Fixed output
LL50	MIC5270-5.0BM5	IttyBitty® Negative Low-Dropout Regulator	Fixed output
LM2H	MIC5231-2.75BM5	Micropower µCap LDO Regulator	Fixed output
LM30	MIC5231-3.0BM5	Micropower µCap LDO Regulator	Fixed output
LM33	MIC5231-3.3BM5	Micropower µCap LDO Regulator	Fixed output
LM50	MIC5231-5.0BM5	Micropower µCap LDO Regulator	Fixed output
LN12	MIC5258-1.2BM5	150mA µCap CMOS LDO Regulator w/Power Good	Fixed output
KN12	MIC5258-1.2YM5	150mA µCap CMOS LDO Regulator w/Power Good	Fixed output
LS20	MIC5245-2.0BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS21	MIC5245-2.1BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS22	MIC5245-2.2BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS23	MIC5245-2.3BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS25	MIC5245-2.5BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS26	MIC5245-2.6BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS27	MIC5245-2.7BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS28	MIC5245-2.8BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS2J	MIC5245-2.85BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS30	MIC5245-3.0BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS31	MIC5245-3.1BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS32	MIC5245-3.2BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS33	MIC5245-3.3BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS35	MIC5245-3.5BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LS50	MIC5245-5.0BM5	150mA IttyBitty® CMS LDO Regulator	Fixed output
LT15	MIC5246-1.5BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT21	MIC5246-2.1BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT25	MIC5246-2.5BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT26	MIC5246-2.6BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT27	MIC5246-2.7BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT2J	MIC5246-2.85BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT28	MIC5246-2.85BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT30	MIC5246-3.0BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT31	MIC5246-3.1BM5	150mA µCap CMOS LDO Regulator	Fixed output
LT33	MIC5246-3.3BM5	150mA µCap CMOS LDO Regulator	Fixed output
LU15	MIC5247-1.5BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU16	MIC5247-1.6BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU1J	MIC5247-1.85BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU18	MIC5247-1.8BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU20	MIC5247-2.0BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU21	MIC5247-2.1BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU22	MIC5247-2.2BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LU24	MIC5247-2.4BM5	150mA Low-Voltage µCap Linear Regulator	Fixed output
NU18	MIC5247-1.8BD5	150mA Low-Voltage µCap Linear Regulator	Fixed output
NU20	MIC5247-2.0BD5	150mA Low-Voltage µCap Linear Regulator	Fixed output
LV12	MIC5248-1.2BM5	150mA µCap CMOS LDO Regulator with Power Good	Fixed output
KV12	MIC5248-1.2YM5	150mA µCap CMOS LDO Regulator with Power Good	Fixed output
NW25	MIC5255-2.5BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW25	MIC5255-2.5BM5	150mA Low Noise µCap CMOS LDO	Fixed output
KW25	MIC5255-2.5YM5	150mA Low Noise µCap CMOS LDO	Fixed output
NW26	MIC5255-2.6BM5	150mA Low Noise µCap CMOS LDO	Fixed output
LW26	MIC5255-2.6BM5	150mA Low Noise µCap CMOS LDO	Fixed output
LW2H	MIC5255-2.75BM5	150mA Low Noise µCap CMOS LDO	Fixed output
NW27	MIC5255-2.7BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW27	MIC5255-2.7BM5	150mA Low Noise µCap CMOS LDO	Fixed output
NW2J	MIC5255-2.85BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW2J	MIC5255-2.85BM5	150mA Low Noise µCap CMOS LDO	Fixed output
NW28	MIC5255-2.8BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW28	MIC5255-2.8BM5	150mA Low Noise µCap CMOS LDO	Fixed output
NW29	MIC5255-2.9BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW29	MIC5255-2.9BM5	150mA Low Noise µCap CMOS LDO	Fixed output

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Analog Marking Information

Mark	Part Number	Description	Note
NW30	MIC5255-3.0BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW30	MIC5255-3.0BM5	150mA Low Noise µCap CMOS LDO	Fixed output
LW31	MIC5255-3.1BM5	150mA Low Noise µCap CMOS LDO	Fixed output
LW32	MIC5255-3.2BM5	150mA Low Noise µCap CMOS LDO	Fixed output
NW33	MIC5255-3.3BD5	150mA Low Noise µCap CMOS LDO	Fixed output
LW33	MIC5255-3.3BM5	150mA Low Noise µCap CMOS LDO	Fixed output
LX26	MIC5256-2.6BM5	150mA µCap LDO with Error Flag	Fixed output
LX27	MIC5256-2.7BM5	150mA µCap LDO with Error Flag	Fixed output
LX28	MIC5256-2.8BM5	150mA µCap LDO with Error Flag	Fixed output
LX2J	MIC5256-2.85BM5	150mA µCap LDO with Error Flag	Fixed output
LX29	MIC5256-2.9BM5	150mA µCap LDO with Error Flag	Fixed output
LX30	MIC5256-3.0BM5	150mA µCap LDO with Error Flag	Fixed output
LX31	MIC5256-3.1BM5	150mA µCap LDO with Error Flag	Fixed output
LX33	MIC5256-3.3BM5	150mA µCap LDO with Error Flag	Fixed output
NX2J	MIC5256-2.85BD5	150mA µCap LDO with Error Flag	Fixed output
LZxx	MIC5159-x.xBM6	Programmable Current-Limit µCap LDO Regulator Controller	Fixed output
LZAA	MIC5159-BM6	Programmable Current-Limit µCap LDO Regulator Controller	Adjustable output
L2AA	MIC5235-BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Adjustable output
L215	MIC5235-1.5BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L218	MIC5235-1.8BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L225	MIC5235-2.5BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L227	MIC5235-2.7BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L230	MIC5235-3.0BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L233	MIC5235-3.3BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L250	MIC5235-5.0BM5	Ultra-Low Quiescent Current, 150mA µCap LDO Regulator	Fixed output
L3AA	MIC5233-BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Adjustable output
L318	MIC5233-1.8BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Fixed output
L325	MIC5233-2.5BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Fixed output
L318	MIC5233-1.8BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Fixed output
L330	MIC5233-3.0BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Fixed output
L333	MIC5233-3.3BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Fixed output
L350	MIC5233-5.0BM5	High Input Voltage, Low I_0 µCap LDO Regulator	Fixed output
L409	MIC5238-0.9BM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L410	MIC5238-1.0BM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L411	MIC5238-1.1BM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L411	MIC5238-1.1YM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L412	MIC5238-1.2BM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L413	MIC5238-1.3BM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L413	MIC5238-1.3YM5	Ultra-Low Quiesent Current, 150mA µCap LDO Regulator	
L5xx	MIC5268	150mA µCap CMOS LDO Regulator w/Power Good	
L512	MIC5268-1.2BM5	150mA µCap CMOS LDO Regulator w/Power Good	
L618	MIC5252-1.8BM5	150mA Low Noise µCap CMOS LDO	
L625	MIC5252-2.5BM5	150mA Low Noise µCap CMOS LDO	
L628	MIC5252-2.8BM5	150mA Low Noise µCap CMOS LDO	
L62J	MIC5252-2.85BM5	150mA Low Noise µCap CMOS LDO	
L630	MIC5252-3.0BM5	150mA Low Noise µCap CMOS LDO	
L64H	MIC5252-4.75BM5	150mA Low Noise µCap CMOS LDO	
618	MIC5252-1.8BML	150mA Low Noise µCap CMOS LDO	
625	MIC5252-2.5BML	150mA Low Noise µCap CMOS LDO	
62J	MIC5252-2.85BML	150mA Low Noise µCap CMOS LDO	
628	MIC5252-2.8BML	150mA Low Noise µCap CMOS LDO	
630	MIC5252-3.0BML	150mA Low Noise µCap CMOS LDO	
64H	MIC5252-4.75BML	150mA Low Noise µCap CMOS LDO	
L8xx	MIC5305	µCap 80mA Low-Dropout Regulator	
N8xx	MIC5305 (D5)	µCap 80mA Low-Dropout Regulator	
N815	MIC5305-1.5BD5	µCap 80mA Low-Dropout Regulator	
N818	MIC5305-1.8BD5	µCap 80mA Low-Dropout Regulator	
N82J	MIC5305-2.85BD5	µCap 80mA Low-Dropout Regulator	
NAA	MIC5305BD5	µCap 80mA Low-Dropout Regulator	Adjustable
815	MIC5305-1.5BML	µCap 80mA Low-Dropout Regulator	
818	MIC5305-1.8BML	µCap 80mA Low-Dropout Regulator	
825	MIC5305-2.5BML	µCap 80mA Low-Dropout Regulator	
826	MIC5305-2.6BML	µCap 80mA Low-Dropout Regulator	
827	MIC5305-2.7BML	µCap 80mA Low-Dropout Regulator	
828	MIC5305-2.8BML	µCap 80mA Low-Dropout Regulator	
829	MIC5305-2.9BML	µCap 80mA Low-Dropout Regulator	
830	MIC5305-3.0BML	µCap 80mA Low-Dropout Regulator	
LL	ETC/MIC812LU…	Microprocessor Reset Circuit	4.63V
LM	ETC/MIC812MU…	Microprocessor Reset Circuit	4.38V
LR	ETC/MIC812RU…	Microprocessor Reset Circuit	2.63V
LS	ETC/MIC812SU…	Microprocessor Reset Circuit	2.93V
LT	ETC/MIC812TU…	Microprocessor Reset Circuit	3.08V
NA	ETC/MIC1810-5U	Microprocessor Reset Circuit	4.62V
NB	ETC/MIC1810-10U	Microprocessor Reset Circuit	4.37V
NC	ETC/MIC1810-15U	Microprocessor Reset Circuit	4.12V
ND	ETC/MIC1815-10U	Microprocessor Reset Circuit	2.88V
NE	ETC/MIC1815-20U	Microprocessor Reset Circuit	2.55V
NR	ETC/MIC6315-26D3U	Open-Drain µP Reset Circuit	2.63V, 140ms

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Analog Marking Information

Mark	Part Number	Description	Note
NS	ETC/MIC6315-26D4U	Open-Drain µP Reset Circuit	2.63V, 1100ms
NT	ETC/MIC8115TU	Microprocessor Reset Circuit	
NU	ETC/MIC6315-31D3U	Open-Drain µP Reset Circuit	3.08V, 140ms
NV	ETC/MIC8114TU	Microprocessor Reset Circuit	
NW	ETC/MIC6315-40D2U	Open-Drain µP Reset Circuit	
NX	ETC/MIC6315-46D3U	Open-Drain µP Reset Circuit	4.63V, 140 ms
NY	ETC/MIC6315-26D2U	Open-Drain µP Reset Circuit	2.63V, 20ms
NZ	ETC/MIC6315-46D4U	Open-Drain µP Reset Circuit	4.63V, 1100ms
PA	ETC/MIC6334-22D3U		
P30	MIC94030BM4	TinyFET® P-Channel MOSFET	
P31	MIC94031BM4	TinyFET® P-Channel MOSFET	With gate pull-up resistor
P50	MIC94050	4-Terminal P-Channel MOSFET	
P51	MIC94051	4-Terminal P-Channel MOSFET	
P52	MIC94052	84mW P-Channel MOSFET	
P53	MIC94053	84mW P-Channel MOSFET	
P54	MIC94060	100mΩ Smart Load Switch	
P55	MIC94061	100mΩ Smart Load Switch	
R***ab***	LM4040***bl***M3-***x.x***	Precision Micropower Shunt Voltage Reference	
	LM4041***bl***M3-***x.x***	***x.x***: output voltage (volts)	
		a: voltage code ***b***: tolerance code	
R1D	LM4040DIM3-1.2		
RAD	LM4041DIM3-ADJ		
RBxx	MIC4043BM4	Low-Voltage Secondary-Side Shunt Regulator	
SAxx	MIC2141BM5	Micropower Boost Converter	
SBxx	MIC2142BM5	Micropower Boost Converter	
SGXX	MIC2287 (D5)	1.2MHz PWM White LED Driver with Output Overvoltage Protection	
SGAA	MIC2287BD5	1.2MHz PWM White LED Driver with Output Overvoltage Protection	
SLX	MIC2287 (ML)	1.2MHz PWM White LED Driver with Output Overvoltage Protection	
SLA	MIC2287-15BML	1.2MHz PWM White LED Driver with Output Overvoltage Protection	
SLB	MIC2287-24BML	1.2MHz PWM White LED Driver with Output Overvoltage Protection	
SLC	MIC2287-34BML	1.2MHz PWM White LED Driver with Output Overvoltage Protection	
SHxx	MIC2288 (D5)	1A 1.2MHz PWM Boost Converter	
SHAA	MIC2288BD5	1A 1.2MHz PWM Boost Converter	
SJX	MIC2288 (ML)	1A 1.2MHz PWM Boost Converter	
SJA	MIC2288BML	1A 1.2MHz PWM Boost Converter	
SMxx	MIC2289 (D5)	(2×2mm) White LED Driver with Internal Schotty Diode and Output Overvoltage Protection	
SNX	MIC2289 (ML)	(2×2mm) White LED Driver with Internal Schotty Diode and Output Overvoltage Protection	
SNA	MIC2289-15BML	(2×2mm) White LED Driver with Internal Schotty Diode and Output Overvoltage Protection	
SNB	MIC2289-24BML	(2×2mm) White LED Driver with Internal Schotty Diode and Output Overvoltage Protection	
SNC	MIC2289-34BML	(2×2mm) White LED Driver with Internal Schotty Diode and Output Overvoltage Protection	
SPxx	MIC2290 (D5)	1.2MHz PWM Boost Converter with Internal Schotty Diode	
SRx	MIC2290 (ML)	1.2MHz PWM Boost Converter with Internal Schotty Diode	
SRC	MIC2290BML	1.2MHz PWM Boost Converter with Internal Schotty Diode	
SSxx	MIC2291 (D5)	1.2A PWM Boost Regulator Photo Flash LED Driver	
SSAA	MIC2291BD5	1.2A PWM Boost Regulator Photo Flash LED Driver	
STx	MIC2291 (ML)	1.2A PWM Boost Regulator Photo Flash LED Driver	
STA	MIC2291-15BML	1.2A PWM Boost Regulator Photo Flash LED Driver	
STC	MIC2291-34BML	1.2A PWM Boost Regulator Photo Flash LED Driver	
SUxx	MIC2292 (D5)	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SWx	MIC2292 (ML)	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SWA	MIC2292-15BML	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SWC	MIC2292-34BML	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SYxx	MIC2293 (D5)	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SZx	MIC2293 (ML)	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SZA	MIC2293-15BML	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
SZC	MIC2293-34BML	High Frequency PWM White LED Driver with Internal Schotty Diode and Overvoltage Protection	
TA00	MIC280-0BM6	Precision Thermal Supervisor	
TA01	MIC280-1BM6	Precision Thermal Supervisor	
TA02	MIC280-2BM6	Precision Thermal Supervisor	
TA03	MIC280-3BM6	Precision Thermal Supervisor	
TA04	MIC280-4BM6	Precision Thermal Supervisor	
TA05	MIC280-5BM6	Precision Thermal Supervisor	
TA06	MIC280-6BM6	Precision Thermal Supervisor	
TA07	MIC280-7BM6	Precision Thermal Supervisor	
TB00	MIC281-0BM6	Low Cost Thermal Sensor	
TB01	MIC281-1BM6	Low Cost Thermal Sensor	
TB02	MIC281-2BM6	Low Cost Thermal Sensor	
TB03	MIC281-3BM6	Low Cost Thermal Sensor	
TB04	MIC281-4BM6	Low Cost Thermal Sensor	
TB05	MIC281-5BM6	Low Cost Thermal Sensor	
TB06	MIC281-6BM6	Low Cost Thermal Sensor	
TB07	MIC281-7BM6	Low Cost Thermal Sensor	
T10	MIC1555BM5	IttyBitty® Timer/Oscillator	
T11	MIC1557BM5	IttyBitty® Oscillator	

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Analog Marking Information

Mark	Part Number	Description	Note
UDL	MIC2753-LBM5	Power Supply Supervisor	Active high
UDM	MIC2753-NMB5	Power Supply Supervisor	
UDR	MIC2753-RBM5	Power Supply Supervisor	
UDS	MIC2753-SBM5	Power Supply Supervisor	
UDT	MIC2753-5BM5	Power Supply Supervisor	
UEL	MIC2754-LBM5	Power Supply Supervisor	Active low
UEM	MIC2754-MBM5	Power Supply Supervisor	
UER	MIC2754-RBM5	Power Supply Supervisor	
UES	MIC2754-SBM5	Power Supply Supervisor	
UET	MIC2754-TBM5	Power Supply Supervisor	
UFx	MIC2778	Voltage Monitor with Adjustable Hysteresis	
UFA	MIC2778-1BM5	Voltage Monitor with Adjustable Hysteresis	
UFB	MIC2778-2BM5	Voltage Monitor with Adjustable Hysteresis	
UHx	MIC2774H	Dual Micro-Power Low Voltage Supervisor	
UH17	MIC2777H-17BM5	Dual Micro-Power Low Voltage Supervisor	
UH22	MIC2777H-22BM5	Dual Micro-Power Low Voltage Supervisor	
UH23	MIC2777H-23BM5	Dual Micro-Power Low Voltage Supervisor	
UH25	MIC2777H-25BM5	Dual Micro-Power Low Voltage Supervisor	
UH26	MIC2777H-26BM5	Dual Micro-Power Low Voltage Supervisor	
UH28	MIC2777H-28BM5	Dual Micro-Power Low Voltage Supervisor	
UH29	MIC2777H-29BM5	Dual Micro-Power Low Voltage Supervisor	
UH31	MIC2777H-31BM5	Dual Micro-Power Low Voltage Supervisor	
UH44	MIC2777H-44BM5	Dual Micro-Power Low Voltage Supervisor	
UH46	MIC2777H-46BM5	Dual Micro-Power Low Voltage Supervisor	
UIx	MIC2774L	Dual Micro-Power Low Voltage Supervisor	
UI17	MIC2777L-17BM5	Dual Micro-Power Low Voltage Supervisor	
UI22	MIC2777L-22BM5	Dual Micro-Power Low Voltage Supervisor	
UI23	MIC2777L-23BM5	Dual Micro-Power Low Voltage Supervisor	
UI25	MIC2777L-25BM5	Dual Micro-Power Low Voltage Supervisor	
UI26	MIC2777L-26BM5	Dual Micro-Power Low Voltage Supervisor	
UI28	MIC2777L-28BM5	Dual Micro-Power Low Voltage Supervisor	
UI29	MIC2777L-29BM5	Dual Micro-Power Low Voltage Supervisor	
UI31	MIC2777L-31BM5	Dual Micro-Power Low Voltage Supervisor	
UI44	MIC2777L-44BM5	Dual Micro-Power Low Voltage Supervisor	
UI46	MIC2777L-46BM5	Dual Micro-Power Low Voltage Supervisor	
UG17	MIC2777N-17BM5	Dual Micro-Power Low Voltage Supervisor	
UG22	MIC2777N-22BM5	Dual Micro-Power Low Voltage Supervisor	
UG23	MIC2777N-23BM5	Dual Micro-Power Low Voltage Supervisor	
UG25	MIC2777N-25BM5	Dual Micro-Power Low Voltage Supervisor	
UG26	MIC2777N-26BM5	Dual Micro-Power Low Voltage Supervisor	
UG28	MIC2777N-28BM5	Dual Micro-Power Low Voltage Supervisor	
UG29	MIC2777N-29BM5	Dual Micro-Power Low Voltage Supervisor	
UG31	MIC2777N-31BM5	Dual Micro-Power Low Voltage Supervisor	
UG44	MIC2777N-44BM5	Dual Micro-Power Low Voltage Supervisor	
UG46	MIC2777N-46BM5	Dual Micro-Power Low Voltage Supervisor	
UJ17	MIC2775-17BM5	Micro-Power Voltage Supervisor	
UJ22	MIC2775-22BM5	Micro-Power Voltage Supervisor	
UJ23	MIC2775-23BM5	Micro-Power Voltage Supervisor	
UJ25	MIC2775-25BM5	Micro-Power Voltage Supervisor	
UJ26	MIC2775-26BM5	Micro-Power Voltage Supervisor	
UJ28	MIC2775-28BM5	Micro-Power Voltage Supervisor	
UJ29	MIC2775-29BM5	Micro-Power Voltage Supervisor	
UJ31	MIC2775-31BM5	Micro-Power Voltage Supervisor	
UJ44	MIC2775-44BM5	Micro-Power Voltage Supervisor	
UJ46	MIC2775-46BM5	Micro-Power Voltage Supervisor	
ULAA	MIC2776HBM5	Micro-Power Low Voltage Supervisor	
UMx	MIC2776L	Micro-Power Low Voltage Supervisor	
UMAA	MIC2776LBM5	Micro-Power Low Voltage Supervisor	
UKx	MIC2776N	Micro-Power Low Voltage Supervisor	
UKAA	MIC2776NBM5	Micro-Power Low Voltage Supervisor	
UN17	MIC2777-17BM5	Dual Micro-Power Low Voltage Supervisor	
UN22	MIC2777-22BM5	Dual Micro-Power Low Voltage Supervisor	
UN23	MIC2777-23BM5	Dual Micro-Power Low Voltage Supervisor	
UN25	MIC2777-25BM5	Dual Micro-Power Low Voltage Supervisor	
UN26	MIC2777-26BM5	Dual Micro-Power Low Voltage Supervisor	
UN28	MIC2777-28BM5	Dual Micro-Power Low Voltage Supervisor	
UN29	MIC2777-29BM5	Dual Micro-Power Low Voltage Supervisor	
UN31	MIC2777-31BM5	Dual Micro-Power Low Voltage Supervisor	
UN44	MIC2777-44BM5	Dual Micro-Power Low Voltage Supervisor	
UN46	MIC2777-46BM5	Dual Micro-Power Low Voltage Supervisor	
UPA1	MIC2779H-1BM5	Voltage Monitor with Adjustable Hysteresis	
UPA2	MIC2779H-2BM5	Voltage Monitor with Adjustable Hysteresis	
UPBx	MIC2779L	Voltage Monitor with Adjustable Hysteresis	
UPB1	MIC2779L-1BM5	Voltage Monitor with Adjustable Hysteresis	
UPB2	MIC2779L-2BM5	Voltage Monitor with Adjustable Hysteresis	

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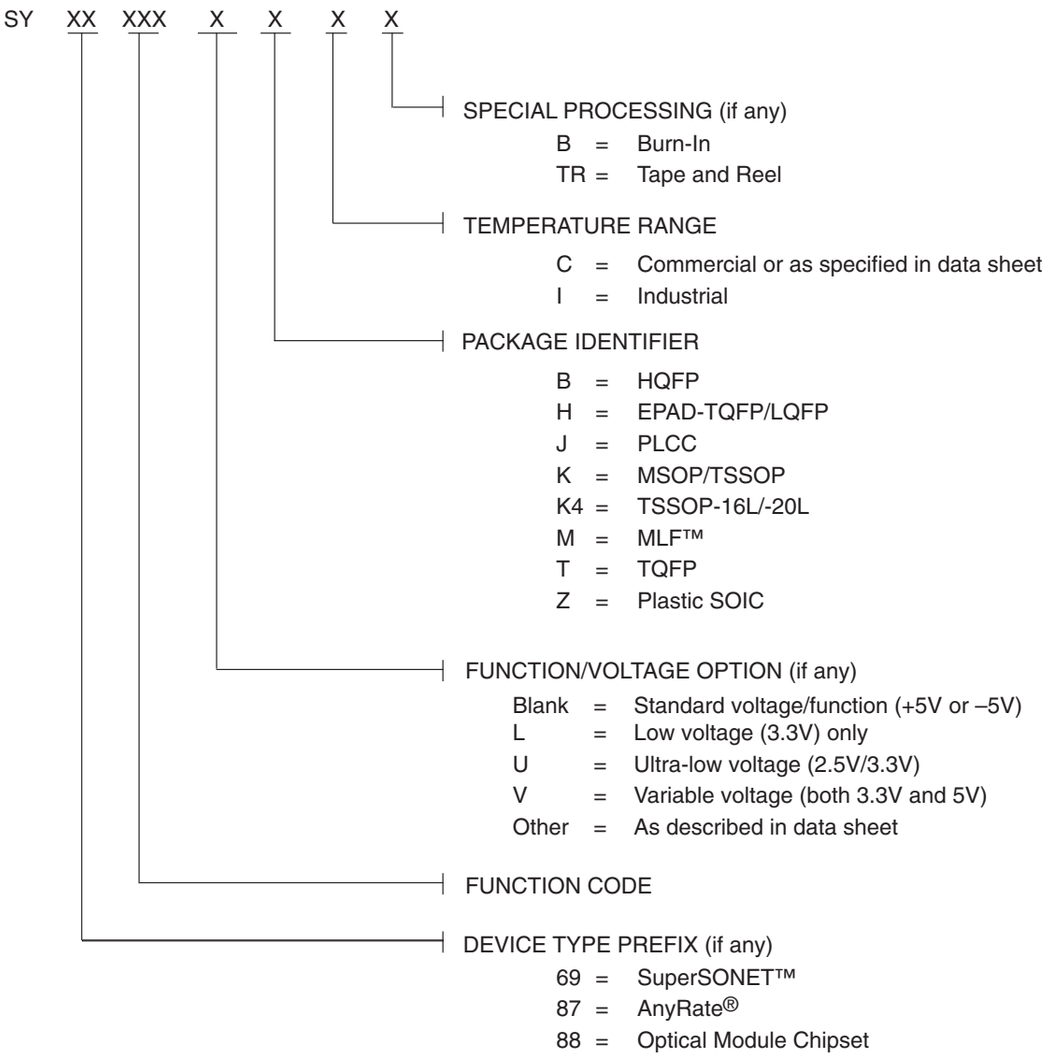
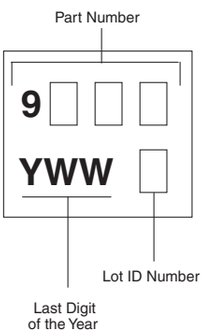
Communication Part Identification



Fiber Optic Module Chipset Marking Information

SY888xx Family
SY889xx Family



For packages:
8 and 10-pin MSOP (3×3mm)
16-pin MLF™

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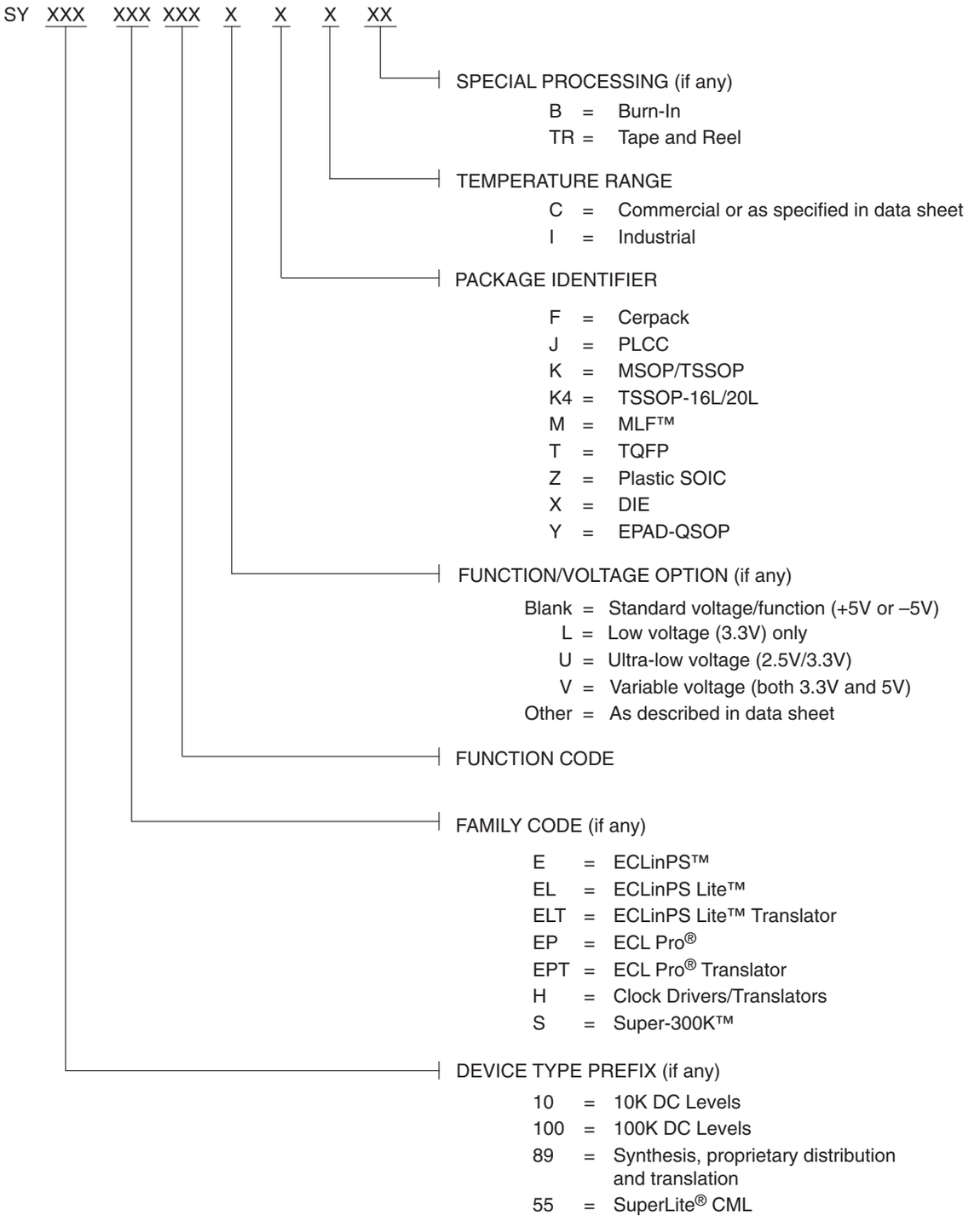
Precision Edge™ Part Identification



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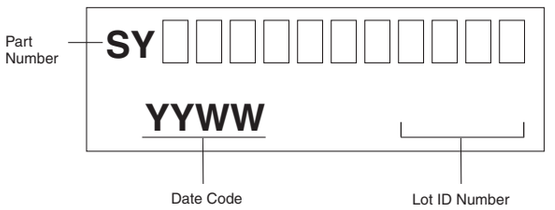
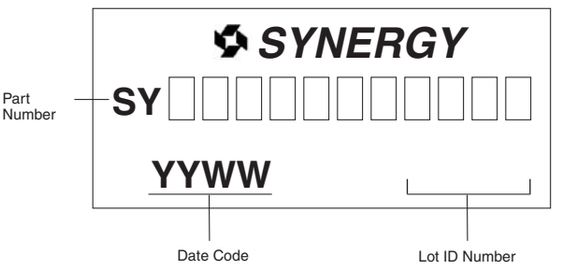
ECLinPS™ Marking Instructions



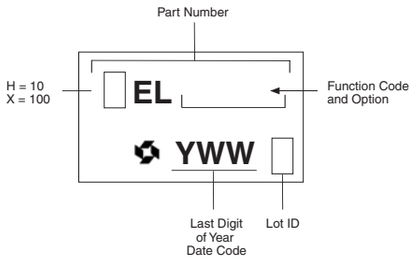
For packages:
16-pin SOIC (0.150” wide)



For packages:
20 and 28-pin SOIC (0.300” wide)

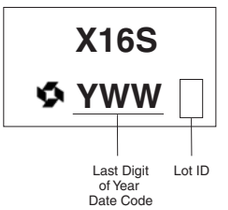
ECLinPS Lite™ Marking Instructions

SY10/100EL16



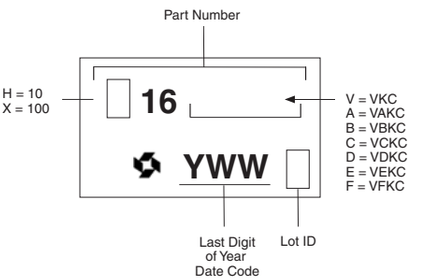
For packages:
8-pin SOIC (0.150” wide)
For both EL and ELT devices

SY10/100EL16VS



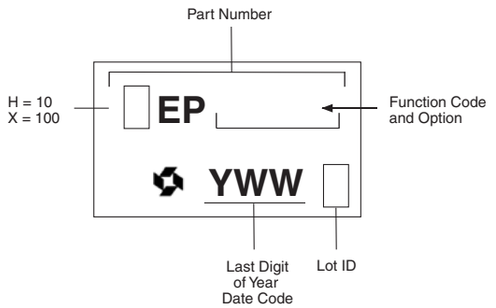
For packages:
8 and 16-pin SOIC (0.150” wide)
8 and 10-pin MSOP (3×3mm)

SY10/100EL16VA-VF

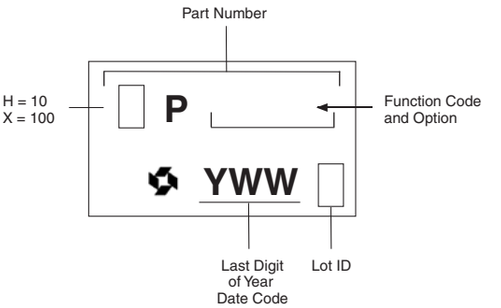


For packages:
8 and 16-pin SOIC (0.150” wide)
8 and 10-pin MSOP (3×3mm)

ECL Pro® Marking Instructions



For packages:
8-pin SOIC (0.150” wide)
For both EP and EPT devices



For packages:
8 and 10-pin MSOP (3×3mm)
For both EP and EPT devices

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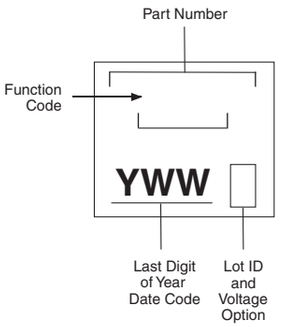
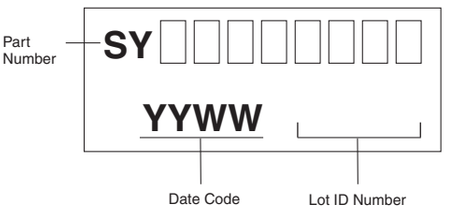
SuperLite® Marking Instructions

SY55xxx



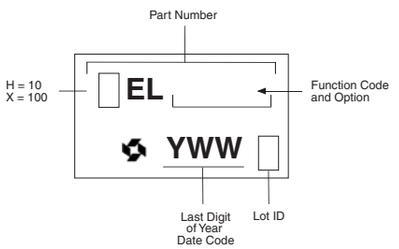
For packages:
10-pin MSOP (3×3mm)
16-pin QSOP

Super-300K™ Marking Instructions

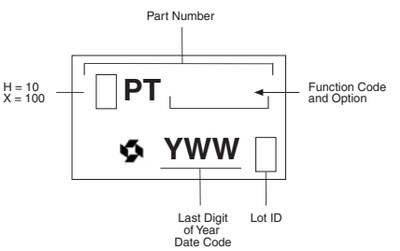


For packages:
24-pin Cerpack and 28-pin PLCC
16-pin SOIC (.150” wide)
20 and 28-pin SOIC (0.300” wide)

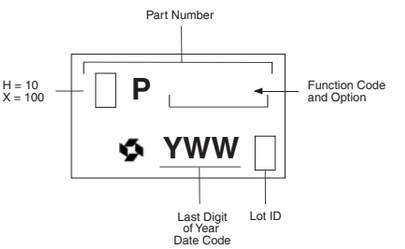
Translator Marking Information



For packages:
8-pin SOIC (0.150” wide)
ELT devices



For packages:
8-pin SOIC (0.150” wide)
EPT devices



For packages:
8-pin MSOP (3×3mm)
EPT devices

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Worldwide Representatives and Distributors

Worldwide Sales Offices

Corporate Office	2180 Fortune Dr.	San Jose, CA 95131	Tel: (408) 944-0800	Fax: (408) 944-0970
Eastern Area Sales Office	93 Branch St.	Medford, NJ 08055	Tel: (609) 654-0078	Fax: (609) 654-0989
Central Area Sales Office	722 S. Denton Tap, Suite 130	Coppel, TX 75019	Tel: (972) 393-2533	Fax: (972) 393-2540
Western Area Sales Office	2180 Fortune Dr.	San Jose, CA 95131	Tel: (408) 944-0800	Fax: (408) 944-0970
Micrel Semiconductor Asia Ltd.	4F, KTB Bldg., 826-14, Yeoksam-dong	Kangnam-ku, Seoul 135-080, Korea	Tel: 82 (2) 3466-3000	Fax: 82 (2) 3466-2999
Micrel Semiconductor, Taiwan	4F, No. 18, Lane 321, Yang-Guang St., Nei-Hu Chu	Taipei 11475, Taiwan, R.O.C.	Tel: + 866 (2) 8751-0600	Fax: +866 (2) 8751-0746
Micrel Semiconductor, China	Rm 712, Bldg. B, Int'l Chamber of Commerce Mansion, Fuhua Rd. 1, Futian Dist., Shenzhen	P.R. China 518048	Tel: + 86-755-8302-7618	Fax: + 86-755-8302-7637
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Wester Europe Sales Office	10 Avenue du Quebec, Villebon - B.P. 116	91944 Courtaboeuf Cedex, France	Tel: + 33 (0) 1.60.92.41.90	Fax: + 33 (0) 1.60.92.41.89
Europe Technical Center	1st Floor, 3 Lockside Place, Mill Lane	Newbury, Berks, United Kingdom RG 145QS	Tel: + 44 (1635) 524455	Fax: + 44 (1635) 524466
Micrel Semiconductor, New Zealand	Office 2, CML Building, 2 Perry Street	Masterton, New Zealand	Tel: + 64-6-378-9799	Fax: + 64-6-378-9599

U.S. Sales Representatives

Alaska	Rep.	contact factory			Tel: (408) 944-0800	
Alabama	Rep.	Southbridge	650 Sun Temple Dr., Suite 101, P.O. Box 1246	Madison, AL 35758	Tel: (256) 461-1990	Fax: (256) 461-4047
Arizona	Rep.	Bager Electronics	2100 South Rural Rd.	Tempe, AZ 85282	Tel: (480) 968-7406	Fax: (480) 968-8375
California (North)	Rep.	I-Squared Sales, Inc.	224 Airport Parkway, Suite 150	San Jose, CA 95110	Tel: (408) 988-3400	Fax: (408) 988-3400
California (South)	Rep.	Bager Electronics	17220 Newhope St., Suite 209	Fountain Valley, CA 92708	Tel: (714) 957-3367	Fax: (714) 546-2654
California (South)	Rep.	Bager Electronics	6324 Variel Ave., Suite 314	Woodland Hills, CA 91367	Tel: (818) 712-0011	Fax: (818) 712-0160
California (South)	Rep.	Bager Electronics	543 Encinitas Blvd., Suite 101	Encinitas, CA 92024	Tel: (760) 632-8816	Fax: (760) 632-8810
Colorado	Rep.	Lange Sales, Inc.	1500 West Canal Ct., Suite 100, Bldg. A	Littleton, CO 80120	Tel: (303) 795-3600	Fax: (303) 795-0373
Connecticut	Rep.	Datcom Technologies	3208 Whitney Ave., Suite 1F	Hamden, CT 06518	Tel: (203) 288-7005	Fax: (203) 281-4233
Delware	Rep.	Matrix Sales, Inc.	30 Washington Ave. B2	Haddonfield, NJ 08033	Tel: (856) 795-8833	Fax: (856) 795-0038
Florida	Rep.	QXI/Alliance Inc.	905 E. M. Luther King Jr. Drive, Suite 460	Tarpon Springs, FL 34689	Tel: (727) 682-9200	Fax: (727) 682-9300
Georgia	Rep.	Southbridge	426 Bethesda School Rd.	Lawrenceville, GA 30044	Tel: (770) 923-9883	Fax: (770) 923-2242
Hawaii	Rep.	Bager Electronics	543 Encinitas Blvd., Suite 101	Encinitas, CA 92024	Tel: (760) 632-8816	Fax: (760) 632-8810
Idaho (North)	Rep.	Cascade Technical Sales	25 Central Way, Suite 200	Kirkland, WA 98033	Tel: (425) 822-7299	Fax: (425) 822-7479
Idaho (South)	Rep.	Lange Sales, Inc.	772 East 3300 South, Suite 205	Salt Lake City, UT 84106	Tel: (801) 487-0843	Fax: (801) 484-5408
Illinois (North)	Rep.	Sumer, Inc.	1675 Hicks Rd.	Rolling Meadows, IL 60008	Tel: (847) 991-8500	Fax: (847) 991-0474
Illinois (South)	Rep.	IRI of Kansas	101 Clark, Suite 200	St. Charles, MO 63301	Tel: (636) 916-1179	Fax: (636) 916-3381
Illinois (Rock Island County)	Rep.	J.R. Sales Engineering	1930 St. Andrews, NE	Cedar Rapids, IA 52402	Tel: (319) 393-2232	Fax: (319) 393-0109
Indiana	Rep.	Technology Marketing Corp.	1526 East Greyhound Pass	Carmel, IN 46032	Tel: (317) 844-8462	Fax: (317) 573-5472
Indiana	Rep.	Technology Marketing Corp.	4630-10 West Jefferson Blvd.	Fort Wayne, IN 46804	Tel: (260) 432-5553	Fax: (260) 432-5555
Iowa	Rep.	J.R. Sales Engineering	1930 St. Andrews, NE	Cedar Rapids, IA 52402	Tel: (319) 393-2232	Fax: (319) 393-0109
Kentucky	Rep.	Technology Marketing Corp.	1460 Newtown Pike, Suite F	Lexington, KY 40511	Tel: (859) 253-1808	Fax: (859) 253-1662
Maine	Rep.	CTC Associates	12 Southwest Park	Westwood, MA 02090	Tel: (781) 320-1818	Fax: (781) 320-8282
Maryland	Rep.	Avtek Associates, Inc.	8955 Guilford Rd., Suite 140	Columbia, MD 21046	Tel: (410) 381-4600	Fax: (410) 381-4700
Massachusetts	Rep.	CTC Associates	12 Southwest Park	Westwood, MA 02090	Tel: (781) 320-1818	Fax: (781) 320-8282
Michigan	Rep.	Technology Marketing Corp.	43120 Utica Road, Suite 300	Sterling Heights, MI 48314	Tel: (586) 731-3016	Fax: (586) 731-9652
Minnesota	Rep.	Sumer, Inc.	1675 Hicks Rd.	Rolling Meadows, IL 60008	Tel: (847) 991-8500	Fax: (847) 991-0474
Mississippi	Rep.	Southbridge	220 Horizon Dr., Suite 201	Raleigh, NC 27615	Tel: (919) 846-5888	Fax: (919) 846-0408
Missouri	Rep.	IRI of Kansas	101 Clark, Suite 200	St. Charles, MO 63301	Tel: (636) 916-1179	Fax: (636) 916-3381
Montana	Rep.	Lange Sales, Inc.	1500 West Canal Ct., Suite 100, Bldg. A	Littleton, CO 80120	Tel: (303) 795-3600	Fax: (303) 795-0373
Nebraska	Rep.	IRI of Kansas	101 Clark, Suite 200	St. Charles, MO 63301	Tel: (636) 916-1179	Fax: (636) 916-3381
Nevada (North)	Rep.	I-Squared Sales, Inc.	224 Airport Parkway, Suite 150	San Jose, CA 95110	Tel: (408) 988-3400	Fax: (408) 988-3400
Nevada (Clark County)	Rep.	Bager Electronics	2100 South Rural Rd.	Tempe, AZ 85282	Tel: (480) 968-7406	Fax: (480) 968-8375
New Hampshire	Rep.	CTC Associates	12 Southwest Park	Westwood, MA 02090	Tel: (781) 320-1818	Fax: (781) 320-8282
New Jersey (North)	Rep.	Harwood Associates	355H River Rd.	Nutley, NJ 07110	Tel: (201) 865-4411	Fax: (973) 622-0565
New Jersey (South)	Rep.	Matrix Sales, Inc.	30 Washington Ave. B2	Haddonfield, NJ 08033	Tel: (856) 795-8833	Fax: (856) 795-0038
New Mexico	Rep.	Bager Electronics	2100 South Rural Rd.	Tempe, AZ 85282	Tel: (480) 968-7406	Fax: (480) 968-8375
New York (Metro)	Rep.	Harwood Associates	25 High St.	Huntington, NY 11743	Tel: (631) 673-1900	Fax: (631) 673-2848
New York (Upstate)	Rep.	CTC Associates	12 Southwest Park	Westwood, MA 02090	Tel: (781) 320-1818	Fax: (781) 320-8282
North Carolina	Rep.	Southbridge	220 Horizon Dr., Suite 201	Raleigh, NC 27615	Tel: (919) 846-5888	Fax: (919) 846-0408
North Dakota	Rep.	Sumer, Inc.	1675 Hicks Rd.	Rolling Meadows, IL 60008	Tel: (847) 991-8500	Fax: (847) 991-0474
Ohio	Rep.	Technology Marketing Corp.	7775 Cooper Rd., Suite 3	Cincinnati, OH 45242	Tel: (513) 984-6720	Fax: (513) 936-6515
Ohio	Rep.	Technology Marketing Corp.	One Independence Pl., 4807 Rockside Rd., Suite 200	Cleveland, OH 44131	Tel: (216) 520-0150	Fax: (216) 520-0190
Oregon	Rep.	Cascade Technical Sales	1260 NW Waterhouse Ave., Suite 180	Beaverton, OR 97006	Tel: (503) 645-9660	Fax: (503) 645-6363
Pennsylvania (West)	Rep.	Technology Marketing Corp.	One Independence Pl., 4807 Rockside Rd., Suite 200	Cleveland, OH 44131	Tel: (216) 520-0150	Fax: (216) 520-0190
Pennsylvania (East)	Rep.	Matrix Sales, Inc.	30 Washington Ave. B2	Haddonfield, NJ 08033	Tel: (856) 795-8833	Fax: (856) 795-0038
Puerto Rico	Rep.	QXI/Alliance Inc.	905 E. M. Luther King Jr. Drive, Suite 460	Tarpon Springs, FL 34689	Tel: (727) 682-9200	Fax: (727) 682-9300
Rhode Island	Rep.	CTC Associates	12 Southwest Park	Westwood, MA 02090	Tel: (781) 320-1818	Fax: (781) 320-8282
South Carolina	Rep.	Southbridge	220 Horizon Dr., Suite 201	Raleigh, NC 27615	Tel: (919) 846-5888	Fax: (919) 846-0408
South Dakota	Rep.	Sumer, Inc.	1675 Hicks Rd.	Rolling Meadows, IL 60008	Tel: (847) 991-8500	Fax: (847) 991-0474
Tennessee	Rep.	Southbridge	220 Horizon Dr., Suite 201	Raleigh, NC 27615	Tel: (919) 846-5888	Fax: (919) 846-0408
Texas	Rep.	Micrel Central Area Sales Office	722 S. Denton Tap, Suite 130	Coppel, TX 75019	Tel: (972) 393-2533	Fax: (972) 393-2370
Texas (El Paso County)	Rep.	Bager Electronics	2100 South Rural Rd.	Tempe, AZ 85282	Tel: (480) 968-7406	Fax: (480) 968-8375
Texas (Houston)	Rep.	Shaw Electronics	16606 St. Johns Wood	Tomball, TX 77377	Tel: (281) 257-2814	
Utah	Rep.	Lange Sales, Inc.	772 East 3300 South, Suite 205	Salt Lake City, UT 84106	Tel: (801) 487-0843	Fax: (801) 484-5408
Vermont	Rep.	CTC Associates	12 Southwest Park	Westwood, MA 02090	Tel: (781) 320-1818	Fax: (781) 320-8282
Virginia	Rep.	Avtek Associates, Inc.	8955 Guilford Rd., Suite 140	Columbia, MD 21046	Tel: (410) 381-4600	Fax: (410) 381-4700
Washington	Rep.	Cascade Technical Sales	25 Central Way, Suite 200	Kirkland, WA 98033	Tel: (425) 822-7299	Fax: (425) 822-7479
Washington D.C.	Rep.	Avtek Associates, Inc.	8955 Guilford Rd., Suite 140	Columbia, MD 21046	Tel: (410) 381-4600	Fax: (410) 381-4700
West Virginia	Rep.	Technology Marketing Corp.	One Independence Pl., 4807 Rockside Rd., Suite 200	Cleveland, OH 44131	Tel: (216) 520-0150	Fax: (216) 520-0190
Wisconsin	Rep.	Sumer, Inc.	13555 Bishops Ct.	Brookfield, WI 53005	Tel: (262) 784-6641	Fax: (262) 784-1436
Wyoming	Rep.	Lange Sales, Inc.	1500 West Canal Ct., Suite 100, Bldg. A	Littleton, CO 80120	Tel: (303) 795-3600	Fax: (303) 795-0373

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Alabama	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Alabama	Dist.	Arrow Electronics Inc.	4930 G Corporate Dr.	Huntsville, AL 35805	Tel: (800) 777-2776	
Alabama	Dist.	FAI	6767 Old Madison Pike, Suite 400A	Huntsville, AL 35806	Tel: (256) 971-1324	Fax: (256) 971-0050
Alabama	Dist.	Future Electronics	6767 Old Madison Pike, Suite 400A	Huntsville, AL 35806	Tel: (256) 971-2010	Fax: (256) 922-0004
Alabama	Dist.	Newark Electronics	150 West Park Loop	Huntsville, AL 35806	Tel: (256) 837-9091	Fax: (256) 837-1288
Alabama	Dist.	Nu Horizons Electronics	4835 University Square, Suite 8	Huntsville, AL 35816	Tel: (256) 722-9330	Fax: (256) 722-9348
Arizona	Dist.	Arrow Electronics Inc.	1406 West 14th St., Suite 101	Tempe, AZ 85281	Tel: (800) 777-2776	Fax: (480) 966-4826
Arizona	Dist.	FAI	4636 East University Dr., Suite 145	Phoenix, AZ 85034	Tel: (480) 731-4661	Fax: (480) 731-9866
Arizona	Dist.	Future Electronics	4636 East University Dr., Suite 245	Phoenix, AZ 85034	Tel: (480) 968-7140	Fax: (480) 968-0334
Arizona	Dist.	Newark Electronics	1600 West Broadway Rd.	Tempe, AZ 85282	Tel: (480) 966-6340	Fax: (480) 966-8146
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California (North)	Dist.	Arrow Electronics Inc.	1680 McCandless Dr., Bldg. 3	Milpitas, CA 95035	Tel: (408) 453-1200	Fax: (408) 441-4504
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California (North)	Dist.	FAI	3009 Douglas Blvd., Suite 215	Roseville, CA 95661	Tel: (916) 782-7882	Fax: (916) 782-9388
California (North)	Dist.	FAI	2220 O'Toole Ave.	San Jose, CA 95131	Tel: (408) 434-0369	Fax: (408) 434-9599
California (North)	Dist.	Future Electronics	3009 Douglas Blvd., Suite 210	Roseville, CA 95661	Tel: (916) 783-7877	Fax: (916) 783-7988
California (North)	Dist.	Future Electronics	2220 O'Toole Ave.	San Jose, CA 95131	Tel: (408) 434-1122	Fax: (408) 433-0822
California (North)	Dist.	Newark Electronics	3600 West Bayshore Rd.	Palo Alto, CA 94303	Tel: (650) 812-6300	Fax: (650) 812-6333
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California (North)	Dist.	Nu Horizons Electronics	1220 Melody Lane, Suite 110	Roseville, CA 95678	Tel: (916) 783-5500	Fax: (916) 783-3066
California (North)	Dist.	Nu Horizons Electronics	2070 Ringwood Ave.	San Jose, CA 95131	Tel: (408) 434-0800	Fax: (408) 434-0935
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Colorado	Dist.	Future Electronics	1819 Denver West Dr., Bldg. 26, Suite 350	Golden, CO 80401	Tel: (303) 277-0023	Fax: (303) 277-0722
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Connecticut	Dist.	Future Electronics	Westgate Office Center, 700 West Johnson Ave.	Cheshire, CT 06410	Tel: (203) 250-0083	Fax: (203) 250-0081
Connecticut	Dist.	Newark Electronics	34 Jerome Ave.	Bloomfield, CT 06002	Tel: (860) 243-1731	Fax: (860) 242-3949
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Florida	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Florida	Dist.	Arrow Electronics Inc.	650 South Northlake Blvd., Suite 400	Almonte Springs, FL 32701	Tel: (800) 777-2776	Fax: (407) 339-0139
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Florida	Dist.	FAI	525 Technology Park, Suite 125	Lake Mary, FL 32746	Tel: (407) 333-3177	Fax: (407) 333-3277
Florida	Dist.	FAI	1400 East Newport Center Dr., Suite 200	Deerfield Beach, FL 33442	Tel: (954) 428-9494	Fax: (954) 428-9477
Florida	Dist.	FAI	2200 Tall Pines Dr., Suite 108	Largo, FL 34641	Tel: (727) 530-1665	Fax: (727) 530-7609
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Florida	Dist.	Newark Electronics	1080 Woodcock Rd.	Orlando, FL 32803	Tel: (407) 896-8350	Fax: (407) 896-7348
Florida	Dist.	Newark Electronics	5601 Mariner St.	Tampa, FL 33609	Tel: (813) 287-1578	Fax: (813) 286-2572
Florida	Dist.	Nu Horizons Electronics	600 South North Lake Blvd., Suite 270	Altamonte Springs, FL 32701	Tel: (407) 831-8008	Fax: (407) 831-8862
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Georgia	Dist.	Arrow Electronics Inc.	4250E River Green Pkwy., Suite E	Duluth, GA 30196	Tel: (800) 777-2776	Fax: (770) 476-1493
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Georgia	Dist.	Nu Horizons Electronics	100 Pinnacle Way, Suite 155	Norcross, GA 30071	Tel: (770) 416-8666	Fax: (770) 416-9060
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Illinois	Dist.	Active Electronics	1776 West Golf Rd.	Mount Prospect, IL 60056	Tel: (847) 640-7713	
Illinois	Dist.	Arrow Electronics Inc.	1162 Springlake Dr.	Itasca, IL 60143	Tel: (800) 777-2776	Fax: (630) 250-0916
Illinois	Dist.	FAI	3100 West Higgins Rd., Suite 115	Hoffman Estates, IL 60195	Tel: (800) 283-1899	Fax: (847) 843-1163
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Illinois	Dist.	Newark Electronics	110 South Alpine Rd.	Rockford, IL 61108	Tel: (815) 229-0225	Fax: (815) 229-2587
Illinois	Dist.	Newark Electronics	1012 North St.	Springfield, IL 62704	Tel: (217) 787-9972	Fax: (217) 787-7740
Illinois	Dist.	Nu Horizons Electronics	500 East Remington Rd., Suite 104	Schaumburg, IL 60173	Tel: (847) 519-0700	Fax: (847) 519-7710
Indiana	Dist.	Arrow Electronics Inc.	7108 Lakeview Pkwy. West Dr.	Indianapolis, IN 46268	Tel: (800) 777-2776	Fax: (317) 570-1344
Indiana	Dist.	FAI	8520 Allison Pointe Blvd., Suite 310	Indianapolis, IN 46250	Tel: (317) 913-1376	Fax: (317) 913-1377
Indiana	Dist.	Future Electronics	8520 Allison Pointe Blvd., Suite 310	Indianapolis, IN 46250	Tel: (317) 913-1355	Fax: (317) 913-1375
Indiana	Dist.	Newark Electronics	4410 Executive Blvd.	Fort Wayne, IN 46808	Tel: (219) 484-0766	Fax: (219) 482-4751
Indiana	Dist.	Newark Electronics	50 East 91st St.	Indianapolis, IN 46240	Tel: (317) 844-0047	Fax: (317) 844-0165
Iowa	Dist.	Newark Electronics	2550 Middle Rd.	Bettendorf, IA 52722	Tel: (319) 359-3711	Fax: (319) 359-5638
Kansas	Dist.	Arrow Electronics Inc.	9801 Legler Dr.	Lenexa, KS 66219	Tel: (800) 777-2776	Fax: (913) 752-2612
Kansas	Dist.	FAI	10977 Granada Ln., Suite 210	Overland Park, KS 66211	Tel: (913) 338-4400	Fax: (913) 338-3412
Kansas	Dist.	Future Electronics	10977 Granada Ln., Suite 210	Overland Park, KS 66211	Tel: (913) 498-1531	Fax: (913) 498-1786
Kansas	Dist.	Newark Electronics	6811 West 63rd St.	Overland Park, KS 66202	Tel: (913) 677-0727	Fax: (913) 677-2725
Kentucky	Dist.	Newark Electronics	3600 Chamberlain Ln.	Louisville, KY 40241	Tel: (502) 423-0280	Fax: (502) 425-3741
Louisiana	Dist.	Newark Electronics	3525 North Causeway Blvd.	Metairie, LA 70002	Tel: (504) 838-9771	Fax: (504) 833-9461
Maine	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Maryland	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Maryland	Dist.	Arrow Electronics Inc.	9800J Patuxent Woods Dr.	Columbia, MD 21046	Tel: (800) 777-2776	Fax: (410) 309-0898
Maryland	Dist.	FAI	Int'l Tower, 2nd Floor, 857 Elkridge Landing Rd.	Linthicum Heights, MD 21090	Tel: (410) 314-1133	Fax: (410) 314-1132
Maryland	Dist.	Future Electronics	Int'l Tower, 2nd Floor, 857 Elkridge Landing Rd.	Linthicum Heights, MD 21090	Tel: (410) 314-1111	Fax: (410) 314-1110
Maryland	Dist.	Newark Electronics	7272 Park Circle Dr.	Hanover, MD 21076	Tel: (410) 712-6922	Fax: (410) 712-6932
Maryland	Dist.	Nu Horizons Electronics	8965 Guilford Rd., Suite 100	Columbia, MD 21046	Tel: (410) 995-6330	Fax: (410) 995-6332
Massachusetts	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Massachusetts	Dist.	Active Electronics	11 Cummings Park	Woburn, MA 01801	Tel: (781) 932-0050	
Massachusetts	Dist.	Arrow Electronics Inc.	35 Upton Dr.	Wilmington, MA 01887	Tel: (800) 777-2776	Fax: (978) 694-1724
Massachusetts	Dist.	FAI	41 Main St.	Bolton, MA 01740	Tel: (978) 779-3111	Fax: (978) 779-3199
Massachusetts	Dist.	Future Electronics	41 Main St.	Bolton, MA 01740	Tel: (978) 779-3000	Fax: (978) 779-3050
Massachusetts	Dist.	Newark Electronics	59 Composite Way	Lowell, MA 01851	Tel: (978) 551-4300	Fax: (978) 551-4329
Massachusetts	Dist.	Newark Electronics	65 Boston Post Rd. West	Marlborough, MA 01752	Tel: (508) 229-2200	Fax: (508) 229-2222
Massachusetts	Dist.	Nu Horizons Electronics	2 Corporation Way, Suite 240	Peabody, MA 01960	Tel: (978) 532-7666	Fax: (978) 532-7667
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Michigan	Dist.	Arrow Electronics Inc.	44720 Helm St.	Plymouth, MI 48170	Tel: (800) 777-2776	Fax: (734) 455-6656
Michigan	Dist.	FAI	39340 Country Club Dr., Suite 100	Farmington Hills, MI 48331	Tel: (248) 553-4276	Fax: (248) 553-1030
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Michigan	Dist.	Future Electronics	39340 Country Club Dr., Suite 100	Farmington Hills, MI 48331	Tel: (248) 489-1179	Fax: (248) 489-1030
Michigan	Dist.	Future Electronics	4595 Broadmoor, SE, Suite 280	Grand Rapids, MI 49512	Tel: (616) 698-6800	Fax: (616) 698-6821
Michigan	Dist.	Newark Electronics	900 East Paris Ave., SE	Grand Rapids, MI 49546	Tel: (616) 954-6700	Fax: (616) 954-6713
Michigan	Dist.	Newark Electronics	4600 Fashion Square Blvd.	Saginaw, MI 48604	Tel: (517) 799-0480	Fax: (517) 799-7722
Michigan	Dist.	Newark Electronics	550 Stephenson Hwy.	Troy, MI 48083	Tel: (248) 583-2899	Fax: (248) 583-1092
Minnesota	Dist.	Arrow Electronics Inc.	7697 Anagram Dr.	Eden Prairie, MN 55344	Tel: (800) 777-2776	Fax: (612) 828-5399
Minnesota	Dist.	FAI	18882 Lake Dr. East	Chanhassen, MN 55317	Tel: (612) 294-0404	Fax: (612) 294-0416
Minnesota	Dist.	Future Electronics	18882 Lake Dr. East	Chanhassen, MN 55317	Tel: (612) 934-9100	Fax: (612) 934-6700
Minnesota	Dist.	Newark Electronics	2021 Hennipin Ave.	Minneapolis, MN 55413	Tel: (612) 331-6350	Fax: (612) 331-1504
Minnesota	Dist.	Nu Horizons Electronics	10907 Valley View Rd.	Eden Prairie, MN 55344	Tel: (952) 942-9030	Fax: (952) 942-9144
Mississippi	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Mississippi	Dist.	Newark Electronics	795 Woodlands Pkwy.	Ridgeland, MS 39157	Tel: (601) 956-3834	Fax: (601) 957-1240
Missouri	Dist.	Arrow Electronics Inc.	2380 Schuetz Rd.	St. Louis, MO 63146	Tel: (800) 777-2776	Fax: (314) 567-1164
Missouri	Dist.	FAI	12125 Woodcrest Executive Dr., Suite 208	St. Louis, MO 63141	Tel: (314) 542-9922	Fax: (314) 542-9655
Missouri	Dist.	Future Electronics	12125 Woodcrest Executive Dr., Suite 206	St. Louis, MO 63141	Tel: (314) 469-6805	Fax: (314) 469-7226
Missouri	Dist.	Newark Electronics	2258 Schuetz Rd.	St. Louis, MO 63146	Tel: (314) 991-0400	Fax: (314) 991-6945
Nebraska	Dist.	Newark Electronics	11128 John Galt Blvd.	Omaha, NE 68137	Tel: (402) 592-2423	Fax: (402) 592-0508
Nevada	Dist.	FAI	5250 Neil Rd., Suite 106	Reno, NV 89502	Tel: (775) 826-2500	Fax: (775) 826-2664
New Hampshire	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
New Jersey	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
New Jersey	Dist.	Active Electronics	Heritage Square, 1871 Route 70	Cherryhill, NJ 08034	Tel: (609) 424-7070	
New Jersey	Dist.	Arrow Electronics Inc.	26 Chapin Rd., Unit 1112	Pine Brook, NJ 07058	Tel: (800) 777-2776	Fax: (973) 227-9246
New Jersey	Dist.	FAI	2000 Crawford Pl., Suite 900	Mt. Laurel, NJ 08054	Tel: (973) 331-1133	Fax: (973) 331-1329
New Jersey	Dist.	Future Electronics	2000 Crawford Pl., Suite 900	Mt. Laurel, NJ 08054	Tel: (856) 787-9600	Fax: (856) 787-9616
New Jersey	Dist.	Future Electronics	1259 Route 46 East	Parsippany, NJ 07054	Tel: (973) 299-0400	Fax: (973) 299-1377
New Jersey	Dist.	Newark Electronics	197 Hwy. 18 South	East Brunswick, NJ 08816	Tel: (732) 937-6600	Fax: (732) 937-6667
New Jersey	Dist.	Nu Horizons Electronics	18000 Horizon Way, Suite 200	Mt. Laurel, NJ 08054	Tel: (609) 231-0900	Fax: (609) 231-9510
New Jersey	Dist.	Nu Horizons Electronics	39 U.S. Route 46	Pine Brook, NJ 07058	Tel: (973) 882-8300	Fax: (973) 882-8398
New Mexico	Dist.	Newark Electronics	8205 Spain, NE	Albuquerque, NM 87109	Tel: (505) 828-1878	Fax: (505) 828-9761
New York	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
New York	Dist.	Active Electronics	3075 Veteran's Memorial	Ronkonkoma, NY 11779	Tel: (516) 471-5400	
New York	Dist.	Arrow Electronics Inc.	25 Hub Dr.	Melville, NY 11747	Tel: (800) 777-2776	Fax: (516) 391-4280
New York	Dist.	Arrow Electronics Inc.	77 Schmitt Blvd.	Farmingdale, NY 11735	Tel: (800) 777-2776	Fax: (516) 420-0685
New York	Dist.	Arrow Electronics Inc.	3375 Brighton-Henrietta Townline Rd.	Rochester, NY 14623	Tel: (800) 777-2776	Fax: (716) 427-0735
New York	Dist.	Arrow Electronics Inc.	47 Mall Dr.	Commack, NY 11725	Tel: (800) 777-2776	Fax: (516) 493-2240
New York	Dist.	FAI	300 Westgate Business Center, Suite 370	Fishhill, NY 12524	Tel: (914) 897-3595	Fax: (914) 897-4996
New York	Dist.	FAI	3033 Express Dr. North	Hauppauge, NY 11788	Tel: (516) 348-3700	Fax: (516) 348-3793
New York	Dist.	FAI	300 Linden Oaks	Rochester, NY 14625	Tel: (716) 387-9600	Fax: (716) 387-9596
New York	Dist.	FAI	251 Salina Meadows Pkwy., Suite 230	Syracuse, NY 13212	Tel: (315) 451-4405	Fax: (315) 451-2621
New York	Dist.	FAI	6245 Sheridan Dr., Suite 216	Williamsville, NY 14221	Tel: (716) 633-7188	Fax: (716) 633-7178
New York	Dist.	Future Electronics	801 Motor Pkwy.	Hauppauge, NY 11788	Tel: (516) 234-4000	Fax: (516) 234-6183
New York	Dist.	Future Electronics	300 Linden Oaks	Rochester, NY 14625	Tel: (716) 387-9550	Fax: (716) 387-9563
New York	Dist.	Future Electronics	251 Salina Meadows Pkwy., Suite 210	Syracuse, NY 13212	Tel: (315) 451-2371	Fax: (315) 451-7258
New York	Dist.	Newark Electronics	3 Marcus Blvd.	Albany, NY 12205	Tel: (518) 489-1963	Fax: (518) 489-1989
New York	Dist.	Newark Electronics	75 Orville Dr.	Bohemia, NY 11716	Tel: (516) 567-4200	Fax: (516) 567-4235
New York	Dist.	Newark Electronics	7449 Morgan Rd.	Liverpool, NY 13090	Tel: (315) 457-4873	Fax: (315) 457-6096

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New York	Dist.	Newark Electronics	5500 Main St.	Williamsville, NY 14221	Tel: (716) 631-2311	Fax: (716) 631-4049
New York	Dist.	Nu Horizons Electronics	70 Maxess Rd.	Melville, NY 11747	Tel: (516) 396-5000	Fax: (516) 396-5050
New York	Dist.	Nu Horizons Electronics	333 Metro Park	Rochester, NY 14623	Tel: (716) 292-0777	Fax: (716) 292-0750
North Carolina	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
North Carolina	Dist.	Arrow Electronics Inc.	3514-A Bush St.	Raleigh, NC 27609	Tel: (800) 777-2776	Fax: (919) 878-9517
North Carolina	Dist.	FAI	2800 Sumner Blvd., Suite 154	Raleigh, NC 27616	Tel: (919) 876-0088	Fax: (919) 876-8597
North Carolina	Dist.	FAI	8401 University Executive Park, Suite 108	Charlotte, NC 28262	Tel: (704) 548-9503	Fax: (704) 548-9469
North Carolina	Dist.	Future Electronics	8401 University Executive Park, Suite 108	Charlotte, NC 28262	Tel: (704) 547-1107	Fax: (704) 547-9650
North Carolina	Dist.	Future Electronics	7812 Village Harbor, Unit 22	Cornelius, NC 28031	Tel: (704) 896-9500	Fax: (704) 896-9510
North Carolina	Dist.	Future Electronics	2800 Sumner Blvd., Suite 154,160,166-A	Raleigh, NC 27616	Tel: (919) 790-7111	Fax: (919) 790-9022
North Carolina	Dist.	Newark Electronics	5501 Executive Center Dr.	Charlotte, NC 28212	Tel: (704) 535-5650	Fax: (704) 537-3914
North Carolina	Dist.	Newark Electronics	1701 Pinecroft Rd.	Greensboro, NC 27407	Tel: (336) 292-7240	Fax: (336) 292-9575
North Carolina	Dist.	Nu Horizons Electronics	3128 Highwoods Blvd., Suite 120	Raleigh, NC 27604	Tel: (919) 954-0500	Fax: (919) 954-0545
Ohio	Dist.	Arrow Electronics Inc.	8200 Washington Village Dr., Suite A	Centerville, OH 45458	Tel: (800) 777-2776	Fax: (937) 428-7359
Ohio	Dist.	Arrow Electronics Inc.	6573 East Cochran Rd.	Solon, OH 44139-3916	Tel: (800) 777-2776	Fax: (440) 248-1106
Ohio	Dist.	FAI	1430 Oak Ct., Suite 203	Beavercreek, OH 45430	Tel: (937) 427-6090	Fax: (937) 427-6099
Ohio	Dist.	FAI	6009-E Landerhaven Dr.	Mayfield Heights, OH 44124	Tel: (440) 446-0061	Fax: (440) 446-0062
Ohio	Dist.	Future Electronics	1430 Oak Ct., Suite 203	Beavercreek, OH 45430	Tel (937) 426-0090	Fax: (937) 426-8490
Ohio	Dist.	Future Electronics	6009-E Landerhaven Dr.	Mayfield Heights, OH 44124	Tel: (440) 449-6996	Fax: (440) 449-8987
Ohio	Dist.	Future Electronics	6565 Davis Industrial Pkwy., Unit AA	Solon, OH 44124	Tel: (440) 248-3222	Fax: (440) 248-3448
Ohio	Dist.	Newark Electronics	498 Circle Freeway Dr.	Cincinnati, OH 45246	Tel: (513) 942-8700	Fax: (513) 942-8770
Ohio	Dist.	Newark Electronics	4614 Prospect Ave.	Cleveland, OH 44103	Tel: (216) 391-9300	Fax: (216) 391-2811
Ohio	Dist.	Newark Electronics	5025 Arlington Centre Blvd.	Columbus, OH 43220	Tel: (614) 326-0352	Fax: (614) 326-0231
Ohio	Dist.	Newark Electronics	3033 Kettering Blvd.	Dayton, OH 45439	Tel: (937) 294-8980	Fax: (937) 294-2517
Ohio	Dist.	Newark Electronics	5660 Southwyck Blvd.	Toledo, OH 43614	Tel: (419) 866-0404	Fax: (419) 866-9204
Ohio	Dist.	Nu Horizons Electronics	9347 Ravenna Rd., Unit A	Twinsburg, OH 44087	Tel: (330) 963-9933	Fax: (330) 963-9944
Oklahoma	Dist.	Arrow Electronics Inc.	12111 East 51st. St., Suite 101	Tulsa, OK 74146	Tel: (800) 777-2776	Fax: (918) 254-0917
Oklahoma	Dist.	FAI	7030 South Yale, Suite 606	Tulsa, OK 74136	Tel: (918) 492-1500	Fax: (918) 492-4848
Oklahoma	Dist.	Newark Electronics	3524 Northwest 56th St.	Oklahoma City, OK 73112	Tel: (405) 943-3700	Fax: (405) 943-6403
Oregon	Dist.	Arrow Electronics Inc.	9500 S.W. Nimbus Ave., Bldg. E	Beaverton, OR 97008	Tel: (800) 777-2776	Fax: (503) 645-0611
Oregon	Dist.	FAI	7204 SW Durham Rd., Suite 900	Portland, OR 97224	Tel: (503) 603-0866	Fax: (503) 603-0960
Oregon	Dist.	Future Electronics	7204 Southwest Durham Rd., Suite 800	Portland, OR 97224	Tel: (503) 603-0956	Fax: (503) 603-0859
Oregon	Dist.	Newark Electronics	4850 Southwest Scholls Ferry Rd.	Portland, OR 97225	Tel: (503) 297-1984	Fax: (503) 297-1925
Oregon	Dist.	Nu Horizons Electronics	15455 NW Greenbrier Pkwy., Suite 135	Beaverton, OR 97006	Tel: (503) 439-1200	Fax: (503) 439-6286
Pennsylvania	Dist.	Arrow Electronics Inc.	700 Business Center Dr.	Horsham, PA 19044	Tel: (800) 777-2776	Fax: (215) 675-9875
Pennsylvania	Dist.	Arrow Electronics Inc.	3245 Old Frankstown Rd.	Pittsburgh, PA 15239	Tel: (800) 777-2776	Fax: (724) 327-4181
Pennsylvania	Dist.	FAI	103 Bradford Rd., Bldg. 2	Wexford, PA 15090	Tel: (724) 935-9600	Fax: (724) 935-9695
Pennsylvania	Dist.	Future Electronics	103 Bradford Rd., Bldg. 2	Wexford, PA 15090	Tel: (724) 935-9600	Fax: (724) 935-9695
Pennsylvania	Dist.	Newark Electronics	1503 North Cedar Crest Blvd.	Allentown, PA 18104	Tel: (610) 434-7171	Fax: (610) 432-3390
Pennsylvania	Dist.	Newark Electronics	501 Office Center Dr.	Fort Washington, PA 19034	Tel: (215) 654-1434	Fax: (215) 654-1460
Pennsylvania	Dist.	Newark Electronics	100 Hightower Blvd.	Pittsburgh, PA 15205	Tel: (412) 788-4790	Fax: (412) 788-1566
Pennsylvania	Dist.	Nu Horizons Electronics	101 Executive Dr., Suite 8	Moorestown, NJ 08057	Tel: (856) 638-0444	Fax: (856) 638-0888
Pennsylvania	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Rhode Island	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
South Carolina	Dist.	Newark Electronics	150 Executive Center Dr.	Greenville, SC 29615	Tel: (864) 288-9610	Fax: (864) 297-3558
South Carolina	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Tennessee	Dist.	Newark Electronics	5401-A Kingston Pike	Knoxville, TN 37919	Tel: (423) 588-6493	Fax: (423) 588-6041
Tennessee	Dist.	Newark Electronics	2600 Nonconnah Blvd.	Memphis, TN 38132	Tel: (901) 396-7970	Fax: (901) 396-7955
Tennessee	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Texas	Dist.	Arrow Electronics Inc.	9233 Waterford Centre Blvd.	Austin, TX 78758	Tel: (800) 777-2776	Fax: (512) 832-9875
Texas	Dist.	Arrow Electronics Inc.	3220 Commander Dr.	Carrolton, TX 75006	Tel: (800) 777-2776	Fax: (972) 248-7208
Texas	Dist.	Arrow Electronics Inc.	19416 Park Row, Suite 190, Bldg. B, Westgate Center	Houston, TX 77084	Tel: (281) 647-6868	Fax: (281) 492-8722
Texas	Dist.	FAI	7000 North Mopac, Suite 310	Austin, TX 78731	Tel: (512) 346-6426	Fax: (512) 346-6781
Texas	Dist.	FAI	10333 Richmond Ave., Suite 970	Houston, TX 77042	Tel: (713) 952-7088	Fax: (713) 952-7098
Texas	Dist.	FAI	2201 West Plano Pkwy., Suite 150	Plano, TX 75075	Tel: (469) 467-0070	Fax: (469) 467-0071
Texas	Dist.	FAI	800 East Campbell, Suite 126	Richardson, TX 75081	Tel: (972) 231-7195	Fax: (972) 231-2508
Texas	Dist.	Future Electronics	7000 North Mopac, Suite 310	Austin, TX 78731	Tel: (512) 502-0991	Fax: (512) 502-0740
Texas	Dist.	Future Electronics	10737 Gateway West, Suite 330	El Paso, TX 79935	Tel: (915) 592-3565	Fax: (915) 592-3818
Texas	Dist.	Future Electronics	10333 Richmond Ave., Suite 970	Houston, TX 77042	Tel: (713) 785-1155	Fax: (713) 785-4558
Texas	Dist.	Future Electronics	2201 W. Plano Pkwy., Suite 150	Plano, TX 75075	Tel: (469) 467-0080	Fax: (469) 467-0078
Texas	Dist.	Future Electronics	800 East Campbell, Suite 130	Richardson, TX 75081	Tel: (972) 437-2437	Fax: (972) 669-2347
Texas	Dist.	Newark Electronics	3737 Executive Center Dr.	Austin, TX 78731	Tel: (512) 338-0287	Fax: (512) 345-2702
Texas	Dist.	Newark Electronics	12880 Hillcrest Rd., Suite 292	Dallas, TX 75230	Tel: (972) 458-2528	Fax: (972) 458-2530
Texas	Dist.	Newark Electronics	7500 Viscount	El Paso, TX 79925	Tel: (915) 772-6367	Fax: (915) 772-3192
Texas	Dist.	Newark Electronics	8203 Willow Pl. South	Houston, TX 77070	Tel: (281) 894-9334	Fax: (281) 894-7919
Texas	Dist.	Nu Horizons Electronics	2404 Rutland Dr., Suite 100	Austin, TX 78758	Tel: (512) 873-9300	Fax: (512) 873-9800
Texas	Dist.	Nu Horizons Electronics	1313 Valwood Pkwy., Suite 200	Carrollton, TX 75006	Tel: (972) 488-2255	Fax: (972) 488-2265
Utah	Dist.	Arrow Electronics Inc.	2440 South 1070 W., Suite A	Salt Lake City, UT 84119	Tel: (800) 777-2776	Tel: (801) 973-8909
Utah	Dist.	FAI	3450 South Highland Dr., Suite 303	Salt Lake City, UT 84106	Tel: (801) 467-9696	Fax: (801) 467-9755
Utah	Dist.	Future Electronics	3450 South Highland Dr., Suite 303	Salt Lake City, UT 84106	Tel: (801) 467-4448	Fax: (801) 467-3604
Utah	Dist.	Newark Electronics	4424 South 700 East	Salt Lake City, UT 84107	Tel: (801) 261-5660	Fax: (801) 261-5675
Vermont	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Virginia	Dist.	Newark Electronics	131 Elden St.	Herndon, VA 22070	Tel: (703) 707-9010	Fax: (703) 707-9203
Virginia	Dist.	Newark Electronics	1504 Santa Rosa Rd.	Richmond, VA 23229	Tel: (804) 282-5671	Fax: (804) 282-3109
Virginia	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	Tel: (978) 422-7641	Fax: (978) 422-0011
Washington	Dist.	Active Electronics	13107 Northup Way 20th St., NE	Bellevue, WA 98005	Tel: (206) 881-8191	
Washington	Dist.	Arrow Electronics Inc.	3310 146th Place SE, Suite A, Bldg. B	Bellevue, WA 98007	Tel: (800) 777-2776	Fax: (425) 643-9709
Washington	Dist.	FAI	12100 NE 195th St., Suite 150	Bothell, WA 98011	Tel: (425) 485-6616	Fax: (425) 483-6109
Washington	Dist.	Future Electronics	19102 North Creek Pkwy., Suite 118	Bothell, WA 98011	Tel: (425) 489-3400	Fax: (425) 489-3411
Washington	Dist.	Newark Electronics	12015 115th Ave., NE	Kirkland, WA 98034	Tel: (425) 814-6230	Fax: (425) 814-9190

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Washington	Dist.	Nu Horizons Electronics	8417 154th Ave. NE	Redmond, WA 98052	Tel: (425) 861-9200	Fax: (425) 861-9800
Wisconsin	Dist.	Nu Horizons Electronics	22118 20th Ave. SE, Suite 204	Bothell, WA 98021	Tel: (425) 398-5800	Fax: (425) 398-8100
Wisconsin	Dist.	Arrow Electronics Inc.	200 North Patrick Blvd.	Brookfield, WI 53045	Tel: (800) 777-2776	Fax: (414) 792-0156
Wisconsin	Dist.	FAI	175 N. Corporate Dr., Suite 150	Brookfield, WI 53045	Tel: (414) 792-9778	Fax: (414) 792-9779
Wisconsin	Dist.	Future Electronics	175 N. Corporate Dr., Suite 150	Brookfield, WI 53045	Tel: (414) 879-0244	Fax: (414) 879-0250
Wisconsin	Dist.	Newark Electronics	2601 Crossroads Dr.	Madison, WI 53718	Tel: (608) 243-9230	Fax: (608) 243-9210
Wisconsin	Dist.	Newark Electronics	2525 N. Mayfair Rd.	Milwaukee, WI 53226	Tel: (414) 453-9100	Fax: (414) 453-2238

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International Sales Representatives and Distributors

North America	Die Dist.	Chip Supply, Inc.	7725 Orange Blossom Trail	Orlando, FL 32810-2696	USA	Tel: + 1 (407) 298-7100	Fax: + 1 (407) 290-0164
Europe	Die Dist.	Chip Supply, Inc.	5 Queen Street,	Oldham OL1 1RD	UK	Tel: + 44 (1616) 336627	Fax: + 44 (1616) 260380
Europe	Die Dist.	Die Technology, Ltd.	Corbrook Road, Chadderton,	Oldham, Lancashire OL9 9SD	UK	Tel: + 44 (0) 1603 788967	Fax: + 44 (0) 1604 788920
Australia	Dist.	Braemac Pty. Ltd.	1/59-61 Burrow Rd.	Alexandria, Sydney 2015	Australia	Tel: 61 (2) 9550-6600	Fax: 61 (2) 9550-6377
Australia	Dist.	Future Electronics	2nd Floor, 1013 Whitehorse Rd. Box Hill Melbourne,	Victoria 3128	Australia	Tel: 61 (3) 98997944	Fax: 61 (3) 98909632
Austria	Dist.	CODICO GmbH & CoKG	Muehlgasse 86-88	A-2380 Perchtoldsdof	Austria	Tel: (43) 1 86 305-0	Fax: (43) 1 86 305-98
Belgium	Stock Rep.	Nijkerk Electronics N.V.	Noorderlaan 111	B-2030 Antwerpen	Belgium	Tel: + 32 (3) 544 70 66	Fax: + 32 (3) 544 99 01
Belgium	Dist.	Future Electronics	Bandstraad 15A	Bus 2, B9160 Lokeren	Belgium	Tel: + 32 (9) 340 52 70	Fax: + 32 (9) 349 48 30
Bulgaria	Dist.	CODICO GmbH & CoKG	Muehlgasse 86-88	A-2380 Perchtoldsdof	Austria	Tel: (43) 1 86 305-0	Fax: (43) 1 86 305-98
Bulgaria	Dist.	Future Electronics	Room 616, 46 Lubliana Blvd	1618 Sofia	Bulgaria	Tel: 359 (2) 957 1740	Fax: 359 (2) 558 590
Brazil	Dist.	Future Electronics	R. Luzitana, 740 cj103/104	Centro-Campinas	Brazil	Tel: + 55 (19) 3737-4100	Fax: + 55 (19) 3236-9834
Brazil	Rep.	Aplicacoes Electronicas Artimar Ltda.	8º Andar, Rua Marques de Itu 70	01223-000 São Paulo - SP	Brazil	Tel: + 55 (11) 3231-0277	Fax: + 55 (11) 3255-0511
Canada–AB	Rep.	GMA	108-2635 37th Ave. N.E.	Calgary, AB T1Y 5Z6	Canada	Tel: (403) 275-7178	Fax: (403) 274-6355
Canada–AB	Dist.	Active Electronics	Unit 1, 2015 32nd Ave., NE	Calgary, AB T2E 6Z3	Canada	Tel: (403) 291-5626	Fax: (403) 291-5444
Canada–AB	Dist.	Arrow Electronics Inc.	No. 10 5920 11 St. SE	Calgary, AB T2H 2M4	Canada	Tel: (403) 259-6817	Fax: (403) 259-8699
Canada–AB	Dist.	Arrow Electronics Inc.	10630 172 St.	Edmonton, AB T5S 1H8	Canada	Tel: (403) 483-6266	Fax: (403) 484-8926
Canada–AB	Dist.	FAI	Suite 200, 1144 29th Ave. NE	Calgary, AB T2E 7P1	Canada	Tel: (780) 291-5333	Fax: (780) 291-5444
Canada–AB	Dist.	FAI	6029 103rd St.	Edmonton, AB T6H 2H3	Canada	Tel: (780) 438-5888	Fax: (780) 436-1874
Canada–AB	Dist.	Future Electronics	Suite 200, 1144 29th Ave. NE	Calgary, AB T2E 7P1	Canada	Tel: (403) 291-3443	Fax: (403) 291-7054
Canada–BC	Rep.	GMA	2153–13353 Commerce Parkway	Richmond, BC V6V 3A1	Canada	Tel: (603) 303-0044	Fax: (603) 303-0051
Canada–BC	Dist.	Arrow Electronics Inc.	8555 Commerce Ct.	Burnaby, BC V5A 4N4	Canada	Tel: (604) 421-2333	Fax: (604) 421-5030
Canada–BC	Dist.	FAI	200-3689 East 1st. Avenue	Vancouver, BC V5M 1C2	Canada	Tel: (604) 654-1050	Fax: (604) 294-3170
Canada–BC	Dist.	Future Electronics	200-3689 East 1st. Avenue	Vancouver, BC V5M 1C2	Canada	Tel: (604) 294-1166	Fax: (604) 294-1206
Canada–MB	Rep.	GMA	2153–13353 Commerce Parkway	Richmond, BC V6V 3A1	Canada	Tel: (403) 275-7178	Fax: (403) 274-6355
Canada–MB	Dist.	Arrow Electronics Inc.	1515 King Edward St.	Winnipeg, MB R3H 0R7	Canada	Tel: (204) 632-1260	Fax: (204) 633-6716
Canada–MB	Dist.	FAI	504-1780 Wellington Ave.	Winnipeg, MB R3H 1B2	Canada	Tel: (204) 786-3075	Fax: (204) 783-8133
Canada–MB	Dist.	Future Electronics	504-1780 Wellington Ave.	Winnipeg, MB R3H 1B2	Canada	Tel: (204) 944-1446	Fax: (204) 783-8183
Canada–MP	Rep.	GMA	Unit 27A, 7050 Bramalea Rd.	Mississauga, ON L5S 1T1	Canada	Tel: (905) 671-8111	Fax: (905) 671-2422
Canada–NB	Dist.	FAI	Suite 213, 95 Chernin Crowley Fourm	Moncton, NB E1A 7R1	Canada	Tel: (506) 389-9991	Fax: (506) 389-9992
Canada–ON	Rep.	GMA	Suite 111, 301 Moodie Drive	Nepean ON K2H 9C4	Canada	Tel: (613) 820-3822	Fax: (613) 820-7633
Canada–ON	Rep.	GMA	Unit 27A, 7050 Bramalea Rd.	Mississauga, ON L5S 1T1	Canada	Tel: (905) 671-8111	Fax: (905) 671-2422
Canada–ON	Dist.	Active Electronics	Unit 2, 1350 Matheson Blvd.	Mississauga, ON L4W 4M1	Canada	Tel: (905) 238-8825	Fax: (905) 238-2817
Canada–ON	Dist.	Active Electronics	1023 Merivale Road	Ottawa, ON K1Z 6A6	Canada	Tel: (613) 728-7900	Fax: (613) 728-3586
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Canada–ON	Dist.	Arrow Electronics Inc.	171 Superior Blvd.	Mississauga, ON L5T 2L6	Canada	Tel: (905) 670-7769	Fax: (905) 670-7781
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Canada–ON	Dist.	FAI	Suite 210, 1101 Prince of Wales Dr.	Ottawa, ON K2C 3W7	Canada	Tel: (613) 727-8622	Fax: (613) 727-2642
Canada–ON	Dist.	FAI	Suite 200, 5935 Airport Rd.	Mississauga, ON L4V 1W5	Canada	Tel: (905) 820-8244	Fax: (905) 820-8046
Canada–ON	Dist.	Future Electronics	Suite 210, 1101 Prince of Wales Dr.	Ottawa, ON K2C 3W7	Canada	Tel: (613) 727-1800	Fax: (613) 727-9819
Canada–ON	Dist.	Newark Electronics	331 Consortium Ct.	London, ON N6E 2S8	Canada	Tel: (519) 685-4280	Fax: (519) 685-7104
Canada–ON	Dist.	Newark Electronics	6200 Dixie Rd.	Mississauga, ON L5T 2E1	Canada	Tel: (905) 670-2888	Fax: (905) 670-1019
Canada–ON	Dist.	Nu Horizons Electronics	Suite 101, 8555 Jane Street	Vaughan, ON L4K 5N9	Canada	Tel: (905) 761-1911	Fax: (905) 761-2811
Canada–QC	Rep.	GMA	4140 Thimens	St. Laurent, PQ H4R 2B9	Canada	Tel: (514) 335-9572	Fax: (514) 335-9573
Canada–QC	Dist.	Active Electronics	Suite 190, 1990 Boul. Charest Ouest	Ste. Foy, PQ G1N 4K8	Canada	Tel: (418) 682-5775	Fax: (418) 682-6282
Canada–QC	Dist.	Arrow Electronics Inc.	Suite 100, 1255 Trans Canada Hwy.	Dorval, PQ H9P 2V4	Canada	Tel: (514) 421-7411	Fax: (514) 421-7430
Canada–QC	Dist.	FAI	Suite 201, 1000 Ave. St. Jean Baptiste	Quebec, PQ G2E 5G5	Canada	Tel: (418) 877-1414	Fax: (418) 877-7070
Canada–QC	Dist.	FAI	1st Floor, 1000 St. Crarles Blvd.	Vaudreuil, QC J7V 8P5	Canada	Tel: (514) 457-3004	Fax: (514) 457-4912
Canada–QC	Dist.	Future Electronics	237 Hymus Blvd.	Pointe Claire, PQ H9R 5C7	Canada	Tel: (514) 694-7710	Fax: (514) 695-3707
Canada–QC	Dist.	Future Electronics	Suite 201, 1000 Ave. St. Jean Baptiste	Quebec, PQ G2E 5G5	Canada	Tel: (418) 877-6666	Fax: (418) 877-6671
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Canada-East	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	USA	Tel: (978) 422-7641	Fax: (978) 422-0011
China	Design Rep.	Amtronix, Inc.	4735 Hilo Street	Fremont, CA 94538	USA	Tel: (510) 429-6888	
China	Design Rep.	Amtronix, Inc.	Rm 2001 Bldg. A, Hui Bin Office Bldg. No. 8 Beichendong St., Chaoyang District	Beijing 100101	China	Tel: + 86 (10) 8499-0974	Fax: + 86 (10) 8499-0889
China	Design Rep.	Amtronix, Inc.	Room 1808 Bldg., Xing Lang Xuan Mansion, Xing Hemingju, Futian District,	Shenzhen 5180333	China	Tel: + 86 (755) 8356-6850	Fax: + 86 (755) 8356-6867
China	Design Rep.	Amtronix, Inc.	Room 15-4-1 Bldg., WanZhangShanLuo No. 7 Shiyanglu Rd., Shiqiaopu District	ChongQing 400039	China	Tel: + 86 (23) 6861-6198	Fax: + 86 (23) 6819-2271
China	Rep.	Galaxy Far East Corp.	Unit 222, China Hall of Science and Tech. 3 Fu-Xing Rd.	Bejing 100038	China	Tel: + 86 (10) 6851-8822	Fax: + 86 (10) 6853-0126
China	Rep.	Galaxy Far East Corp.	Room 0612, New Caohejing Tower 509 Caobao Rd.	Shanghai 200233	China	Tel: + 86 (21) 6495-6484	Fax: + 86 (21) 6485-2237
China	Rep.	Galaxy Far East Corp.	Room 1121 Hualianfa Industrial Tower No. 2006, North Road Huaqiang Rd.	Shenzhen 518031	China	Tel: + 86 (755) 8399-8903	Fax: + 86 (755) 8399-9440
China	Rep.	Galaxy Far East Corp.	Dong-Fu Tower 1411 North Yu Lin Rd. 3	Chengdu 610041	China	Tel: + 86 (28) 8554-8390	Fax: + 86 (28) 8554-7613
China	Rep.	Galaxy Far East Corp.	11# Bldg., 1 Innovation Science & Tech. Park of China Baoan Group, South Lake Garden City	Wuhan 430071	China	Tel: + 86 (27) 8730-6822	Fax: + 86 (27) 8730-6822
China	Rep.	Lestina International Ltd.	Room 1101, Haojing Bldg. No. 46, Zhichun Rd., Hai Dian District	Beijing 100086	China	Tel: + 86 (10) 6210-1671	Fax: + 86 (10) 6210-1650
China	Rep.	Lestina International Ltd.	Room 417, Yongfeng Bldg. No. 52, Yongfeng Rd., Area Gaoxin,	Chengdu 610041	China	Tel: + 86 (28) 514-4000	Fax: + 86 (28) 518-7012
China	Rep.	Lestina International Ltd.	Room 806, Lawyer Building No.1538 Zhongshan West Rd.	Shanghai 200235	China	Tel: + 86 (21) 6464-6969	Fax: + 86 (21) 6464-4848
China	Rep.	Lestina International Ltd.	Rm 806, Tian'an High-Tech Plaza, Tower A Tian'an Cyber Park, Futian District	Shenzhen 518040	China	Tel: + 86 (755) 8343-8383	Fax: + 86 (755) 8343-9867

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China	Stock Rep.	Tekall Technologies Co., Ltd.	Room 502, Ju'an Bldg., Chedaogou Rd.				
		(RF products only)	Hai Dian District	Beijing 100081	China	Tel: + 86 (10) 6872-7716	Fax: + 86 (10) 6872-7713
China	Stock Rep.	Tekall Technologies Co., Ltd.	No. 1, Qiaoko Economic Special Zone				
		(RF products only)	2nd Gu Tian Rd.	Wuhan 430063	China	Tel: + 86 (27) 8385-8150	Fax: + 86 (27) 8385-8150
China So.	Rep.	Hongdian Technologies Ltd.	15H Jin Song Bldg., Che Gong Miao	Shenzhen 518040	China	Tel: + 86 (755) 83890580	Fax: + 86 (755) 83890677
China So.	Stock Rep.	Fiaco Electronics (Shenzhen) Ltd.	F Rm, 10th Floor, Caihong Bldg., Caitian Rd.	Shenzhen Guangdong	China	Tel: + 86 (755) 8292-4543	Fax: + 86 (755) 8291-4777
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China	Dist.	Future Electronics–Chengdu	Room 609, 6/F, Tiange Building				
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China	Dist.	Future Electronics–Guangzhou	Room 505, Yi An Plaza				
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China	Dist.	Future Electronics–Nanjing	Room B1, 15/F, G.E. Plaza Hotel				
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China	Dist.	Future Electronics–Qingdao	B707A, Fullhope Plaza				
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			Electronic Science & Tech. Bldg.				
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China	Dist.	Secom Telecom Co., Ltd.	32/F, Block A				
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China	Dist.	Secom Telecom Co., Ltd.	Room 707, New Era Mansion				
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China	Dist.	Secom Telecom Co., Ltd.	Unit G, 11/F, Era Plaza, 42 Wenwu Rd.				
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			High Tech. Development Zone	Xi'an 710075	China	Tel: + 86 (29) 8832-3435	Fax: + 86 (29) 8832-3331
China	Dist.	Synnex Technology Int'l Corp.	4th Floor, 75, Sec. 3, Ming Sheng E. Rd.	Taipei	Taiwan, R.O.C.	Tel: + 886 (2) 2506-3320	Fax: + 886 (2) 2500-7349
China	Dist.	Synnex Pacific, Ltd.	Room 302, 3/F Block A,				
			Overseas Decoration Bldg.				
			122 Zhenhua Rd., Futian District	Shenzhen 518031	China	Tel: + 86 (755) 8334-2722	Fax: + 86 (755) 8323-7466
China	Dist.	Synnex Pacific, Ltd.	15, 2A/F Block B,				
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China	Dist.	Synnex Pacific, Ltd.	5/F Apon Mansion, 585 Lingling Rd.	Shanghai 200030	China	Tel: + 86 (21) 6469-1773	Fax: + 86 (21) 6439-3256
China	Dist.	Synnex Pacific, Ltd.	Room C503, 5/F Haiyue Bldg.,				
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Denmark	Dist.	Future Electronics	Hoerskaetten 14, 2630 Taastrup	Conpenhagen	Denmark	Tel: + 45 43 55 00 20	Fax: + 45 43 55 00 25
Denmark	Dist.	Future Electronics	Skomagervej 13E,	7100 Vejle	Denmark	Tel: + 45 76 40 87 64	Fax: + 45 76 40 87 65
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Finland	Dist.	Future Electronics	Olarinluoma 7, Helsinski	Espoo 02200	Finland	Tel: + 358 (9) 525 9950	Fax: + 358 (9) 455 1050
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France	Dist.	Future Electronics–Paris	Parc Technopolis LP854				
			3 Avenue du Canada, Batiment Theta 2	91974 Courtaboeuf Cedex	France	Tel: + 33 (1) 69.82.11.11	Fax: + 33 (1) 69.82.11.00
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France	Dist.	Future Electronics–Rennes	12, Allee des Peupliers				
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			15 Austin Road, Tsimshatsui	Kowloon	Hong Kong	Tel: + (852) 2735-1736	Fax: + (852) 2730-5260
Hong Kong	Dist.	Future Electronics	Unit 4607-19, Metroplaza Tower 1				
			223 Hing Fong Rd.	Kwai Fong	Hong Kong	Tel: + (852) 2420-6238	Fax: + (852) 2423-0767
Hungary	Dist.	CODICO GmbH & CoKG	Muehlgasse 86-88	A-2380 Perchtoldsdof	Austria	Tel: (43) 1 86 305-0	Fax: (43) 1 86 305-98
Hungary	Dist.	Future Electronics	2nd Floor, Tartsay Vilmos, UTCA 3	Budapest H-1126	Hungary	Tel: + 36 (1) 224 0510	Fax: + 36 (1) 224 0511
Iceland	Rep.	C-88 AS	7 Savsvinget	DK-2970, Hoersholm	Denmark	Tel: + 45 (70) 10 48 88	Fax: + 45 (70) 10 48 89
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India	Dist.	Hynetic Electronics	78/1, 3rd Cross, Gavipuram Extension	Bangalore 560 019	India	Tel: + 91 (80) 652-0852	Fax: + 91 (80) 652-4073
India	Dist.	Hynetic Electronics	E-245, Amar Colony, Lajpat Nagar 4	New Delhi 110 024	India	Tel: + 91 (11) 628-2434	Fax: + 91 (11) 628-2435
India	Dist.	Hynetic Electronics	1-7-162, Ecil Post, Kamalangar	Hyderabad 500 062	India	Tel: + 91 (40) 712-8156	Fax: + 91 (40) 712-2496
India	Dist.	Hynetic Electronics	Flat No. C103, 1st Floor, J.B. Nagar Ajit Nagar Owners Assoc., Andheri East,	Mumbai 400 059	India	Tel: + 91 (22) 822-3575	Fax: + 91 (22) 822-3575
Ireland	Rep.	Solid State Supplies (Ireland) Ltd.	14 Kenyon Street, Nenagh	Co. Tipperary	Ireland	Tel: + 353 (0)67 34455	Fax: + 353 (0)67 34329
Ireland	Dist.	Flint Distribution Ltd.	Walker Rd., Bardon Hill, Coalville, L	eicestershire LE67 1TU	England	Tel: + 44 1530 510333	Fax: + 44 1530 510275
Ireland	Dist.	Future Electronics Ltd.	26 Merchants Square, Ennis	Co. Clare	Ireland	Tel: + 353 (65) 41 330	Fax: + 353 (65) 40 654
Ireland	Dist.	Future Electronics Ltd.	Unit 24, Park West Enterprise Centre Nangor Rd.	Dublin 12	Ireland	Tel: + 353 (1) 6264098	Fax: + 353 (1) 6263538
Israel	Rep.	Gitronics Ltd.	11, Hashaham Street	Petah-Tikva 49125	Israel	Tel: + 972 (3) 927-4738	Fax: + 972 (3) 927-4757
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Japan	Rep.	Hakuto Co. Ltd.	Nagoya-Seni Bldg., 9-27, Nishiki, 2-chome Naka-ku, Nagoya	Aichi 460	Japan	Tel: + 81 (52) 204-8910	Fax: + 81 (52) 204-8935
Japan	Rep.	Hakuto Co. Ltd.	292-4, Asouda-machi, Matsuyama	Ehime 790	Japan	Tel: + 81 (89) 931-8910	Fax: + 81 (89) 945-6218
Japan	Rep.	Hakuto Co. Ltd.	Felix Iwai Bldg. 2-3, Hakataekiminami, 3-chome Hakata-ku	Fukoka 812	Japan	Tel: + 81 (92) 431-5330	Fax: + 81 (89) 431-5265
Japan	Rep.	Hakuto Co. Ltd.	3-18, Miyanomae, 2-chome, Itami	Hoygo 664	Japan	Tel: + 81 (72) 784-8910	Fax: + 81 (72) 784-7860
Japan	Rep.	Hakuto Co. Ltd.	56, Takehanatakenokaido-cho Yamashina-ku	Kyoto 607	Japan	Tel: + 81 (75) 593-8910	Fax: + 81 (75) 593-8990
Japan	Rep.	Hakuto Co. Ltd.	Kamisugikokune Bldg. 4-10, Kamisugi, 1-chome, Aoba-ku	Sendai, Miyagi 980	Japan	Tel: + 81 (22) 224-8910	Fax: + 81 (22) 224-0645
Japan	Rep.	Hakuto Co. Ltd.	1-13, Shinjuku, 1-chome, Shinjuku-ku	Tokyo, 160-8910	Japan	Tel: + 81 (3) 3355-7629	Fax: + 81 (3) 3355-7648
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Korea	Rep.	GenCore Technology Co., Ltd.	5FL, Samho Bldg. 275-6 Yangjae-dong, Seocho-ku	Seoul 137-941	Korea	Tel: + 82 (2) 3463-0040	Fax: + 82 (2) 3463-4935
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Mexico	Rep.	Harwood Associates Mexico	Obsidiana 3176 Int. 107 Residencial Victoria, Guadalajara, Jalisco	C.P. 45068	Mexico	Tel: + 52 (33) 3343-7365	Fax: + 52 (3) 634-6256
Mexico	Dist.	Future Electronics Mexico S.A. de C.V.	4º Piso, Suite 6, Chimalhuacán 3569 Ciudad del Sol	45050 Zapopan, Jalisco	Mexico	Tel: + 52 (33) 3122-00-43	Fax: + 52 (3) 122-10-66
Netherlands	Rep.	Nijkerk Electronics B.V.	Joop Geesinkweg No. 140	NL-1096 Amsterdam	The Netherlands	Tel: + 31 (0) 20 504 14 24	Fax: + 31 (0) 20 642 39 48
Netherlands	Dist.	Future Electronics	Tinstraat No. 3 Breda	4823AA Holland	The Netherlands	Tel: + 31 76 5444 888	Fax: + 31 76 5444 880
New Zealand	Dist.	Braemac Pty. Ltd.	1/59-61 Burrow Rd.	Alexandria, Sydney 2015	New Zealand	Tel: 61 (2) 9550-6600	Fax: 61 (2) 9550-6377
New Zealand	Dist.	Future Electronics	Unit 2, 7 Wordsworth St., P.O. Box 7500	Christchurch 8002	New Zealand	Tel: 64 (3) 9823256	Fax: 64 (3) 9823258
Norway	Dist.	Future Electronics A/S	Tevlingveien	Oslo 1081	Norway	Tel: + 47 (22) 90 5800	Fax: + 47 (22) 90 5790
Norway	Dist.	Future Electronics A/S	Jordhus Industriomaade	N-7332 Loekken Verk	Norway	Tel: + 47 (72) 49 5990	Fax: + 47 (72) 49 5991
Philippines	Dist.	Future Electronics-Philippines	Suite 203, Richville Corporate Center 1314 Commerce Ave. Madrigal Business Park Ayala	Alabang, Muntinlupa City	Philippines	Tel: 63 (2) 807-5092/3512	Fax: 63 (2) 807-5187
Poland	Dist.	CODICO GmbH & CoKG	Muehlgasse 86-88	A-2380 Perchtoldsdof	Austria	Tel: 43 (1) 863 050	Fax: 43 (1) 863 0598
Poland	Dist.	Future Electronics	Polska, U1 Panienska 9	Warsaw 03-704	Poland	Tel: + 48 (22) 618 9202	Fax: + 48 (22) 618 8050
Portugal	Rep.	Lusomatrix, Lda.	Av. Coronel Eduardo Galhardo, 7-1C	1170-105 Lisboa	Portugal	Tel: + 351 21 816 2625	Fax: + 351 21 814 9482
Portugal	Dist.	Arrow-Iberia	C/Albasanz, 75	28037 Madrid	Spain	Tel: + 34 (91) 304 3040	Fax: + 34 (91) 304 7559
Puerto Rico	Die Dist.	ES Components, Inc.	108 Pratts Junction Rd.	Sterling, MA 01564	USA	Tel: (978) 422-7641	Fax: (978) 422-0011
Romania	Dist.	CODICO GmbH & CoKG	Muehlgasse 86-88	A-2380 Perchtoldsdof	Austria	Tel: (43) 1 86 305-0	Fax: (43) 1 86 305-98
Singapore	Dist.	JAG Components (Pte.) Ltd.	57 Ubi Ave. 1, #06-12, Boustead Industrial Park	Singapore 408936		Tel: + 65 749 56 63	Fax: + 65 749 56 62
Singapore	Dist.	Future Electronics Ltd.	396 Alexandra Rd., #15-02 BP Tower	Singapore 119954		Tel: + 65 479 13 00	Fax: + 65 479 31 51
Slovakia	Dist.	CODICO GmbH & CoKG	Muehlgasse 86-88	A-2380 Perchtoldsdof	Austria	Tel: (43) 1 86 305-0	Fax: (43) 1 86 305-98
South Africa	Rep.	MB Silicon Systems (Pty.) Ltd.	11 1st Avenue, Houghton 2041	Johannesburg	South Africa	Tel: + 27 (11) 728 4757	Fax: + 27 (11) 728 4979
Spain	Rep.	Matrix Madrid	Belmonte de Tajo, 76, 3 B	28019 Madrid	Spain	Tel: + 34 (91) 560 2737	Fax: + 34 (91) 565 2865
Spain	Dist.	Arrow-Iberia	C/Albasanz, 75	28037 Madrid	Spain	Tel: + 34 (91) 304 3040	Fax: + 34 (91) 304 7559
Spain	Dist.	Future Electronics	Avenida del Parenon 10	Madrid 28042	Spain	Tel: + 34 (91) 721 4270	Fax: + 34 (91) 721 1043

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Sweden	Rep.	Quartum Electronics AB	Girovägen 13	175 62 Jarfalla	Sweden	Tel: + 46 (8) 506 498 70	Fax: + 46 (8) 506 498 99
Sweden	Dist.	Future Electronics	Energigatan 10B	Kungsbacka 434 37	Sweden	Tel: + 46 300 759 95	Fax: + 46 300 759 96
Sweden	Dist.	Future Electronics	c/o Regus Business Centre, Amiralsgatan 20	Malmo SE-211 55	Sweden	Tel: + 46 (40) 664 35 51	Fax: + 46 (40) 664 35 41
Switzerland	Rep.	Electronitel SA	Ch. du Grand-Clos 1, B.P. 142	1752 Villars-sur-Glâne 1	Switzerland	Tel: + 41 (26) 401 00 60	Fax: + 41 (26) 401 00 70
Taiwan, R.O.C.	Dist.	Future Electronics-Hsin Chu	18F-2, No. 295, Sec. 2, Kuang-Fu Rd.	Hsin Chu City	Taiwan, R.O.C.	Tel: + 886 (3) 574-4646	Fax: + 886 (3) 574-4670
Taiwan, R.O.C.	Dist.	Future Electronics-Taipei	8F, No. 172, Sec. 4, Chen The Rd.,	Shih-Lin, Taipei	Taiwan, R.O.C.	Tel: + 886 (2) 8861-5288	Fax: + 886 (2) 8861-4961
Taiwan, R.O.C.	Dist.	Galaxy Far East Corp.	1F, No. 15 Alley 20 Lane, 544 Sec. 1, Kuang Fu Road	Hsinchu	Taiwan, R.O.C.	Tel: + 886 (3) 578-6766	Fax: + 886 (3) 577-4795
Taiwan, R.O.C.	Dist.	Galaxy Far East Corp.	7F-A3, 29 Haipien Road	Kaohsiung	Taiwan, R.O.C.	Tel: + 886 (7) 338-0559	Fax: + 886 (7) 338-1343
Taiwan, R.O.C.	Dist.	Galaxy Far East Corp.	14F, 207-5, Sec. 3, Pei-Hsin Rd.	Hsintien, Taipei	Taiwan, R.O.C.	Tel: + 886 (2) 8913-2200	Fax: + 886 (2) 8913-2277
Taiwan, R.O.C.	Dist.	Synnex Technology Int'l Corp.	4th Floor, 75, Sec. 3, Ming Sheng E. Rd.	Taipei	Taiwan, R.O.C.	Tel: + 886 (2) 2506-3320	Fax: + 886 (2) 2500-7349
Taiwan, R.O.C.	Dist.	Ultima Electronics Corp.	7F, No. 100, Lide St., 4th Fl., 75, Sec. 3	Jungho City	Taiwan, R.O.C.	Tel: + 886 (2) 2225-6300	Fax: + 886 (2) 2225-8985
Taiwan, R.O.C.	Dist.	Ultra Source Technology Corp.	17F, No. 150 Jian-Yi Road	Chung Ho City, Taipei, 235	Taiwan, R.O.C.	Tel: + 886 (2) 8226-3168	Fax: + 886 (2) 8226-3118
Thailand	Dist.	Future Electronics-Thailand	947 Thosapol Land, 3 Bldg., Room C2 21st Floor, Banga-Trad Rd. K.M.3	Bangna, Bangkok	Thailand	Tel: + 662-3618400	Fax: + 662-3618433
Thailand	Dist.	JAG Components Thailand Co. Ltd.	48/157 Moo 1 Ramkhamhaeng Road, Sapansoong	Buengkum Bangkok 10240	Thailand	Tel: + 662-7294245/6	Fax: + 662-7293030
Turkey	Dist.	Future Electronics	Turkiye Irtibat Brosu Perdemsac Plaza Bayar Caddesi Gulbahar Sok No 17/144	Kozyatagi TR 81090 Istanbul	Turkey	Tel: + 90 (216) 445 8700	Fax: + 90 (216) 445 8704
UK	Dist.	Focus Electronics Dist.	Cottis House, Locks Hill, Bradley Way	Rochford Essex SS4 1BB	UK	Tel: + 44 (1702) 542301	Fax: + 44 (1702) 542302
UK	Dist.	Future Electronics Ltd.	Future House, Poyle Road Colnbrook	Berkshire SL3 0E2	UK	Tel: + 44 (1753) 763000	Fax: + 44 (1753) 689100
UK	Dist.	Solid State Supplies plc	Unit 2, Eastlands Lane, Paddock Wood	Kent TN12 6BU	UK	Tel: + 44 (1892) 836836	Fax: + 44 (1892) 837837
UK	Dist.	Spectre Communications Ltd.	Walker Rd., Bardon Hill, Coalville	Leicestershire LE67 1TU	UK	Tel: + 44 1530 510333	Fax: + 44 1530 510275

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