



**5-BIT 2:1
MULTIPLEXER**

**SY10E158
SY100E158**

FEATURES

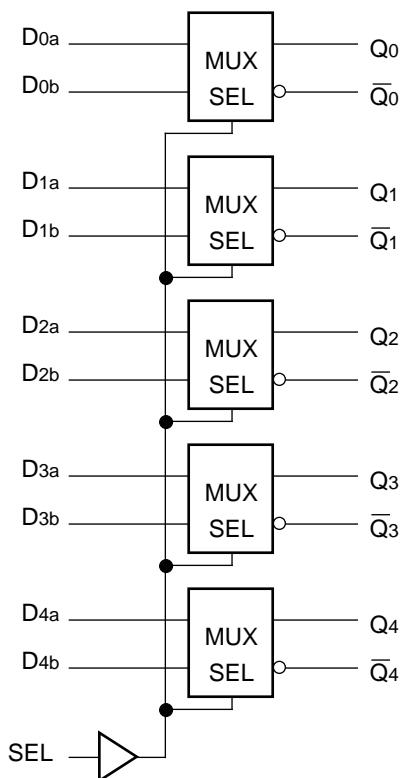
- 550ps max. D to output
- Extended 100E VEE range of -4.2V to -5.5V
- 775ps max. SEL to output
- Differential outputs
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E158
- Available in 28-pin PLCC package

DESCRIPTION

The SY10/100E158 offer five 2:1 multiplexers with differential outputs, designed for use in new, high-performance ECL systems.

The multiplexer operation is controlled by the SEL (Select) signal which selects one of the two bits of input data at each mux to be passed through.

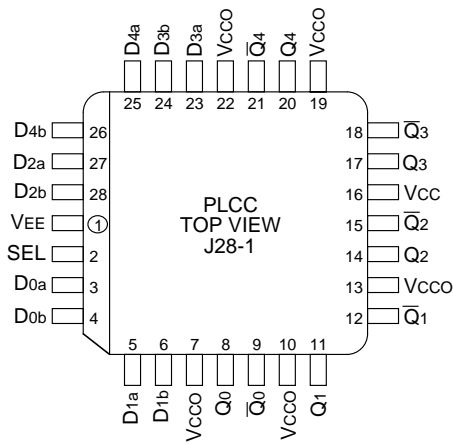
BLOCK DIAGRAM



PIN NAMES

Pin	Function
D0a–D4a	Input Data a
D0b–D4b	Input Data b
SEL	Select Input
Q0–Q4	True Outputs
$\bar{Q}0$ – $\bar{Q}4$	Inverted Outputs
Vcco	Vcc to Output

PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E158JC	J28-1	Commercial	SY10E158JC	Sn-Pb
SY10E158JCTR ⁽²⁾	J28-1	Commercial	SY10E158JC	Sn-Pb
SY100E158JC	J28-1	Commercial	SY100E158JC	Sn-Pb
SY100E158JCTR ⁽²⁾	J28-1	Commercial	SY100E158JC	Sn-Pb
SY10E158JZ ⁽³⁾	J28-1	Commercial	SY10E158JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E158JZTR ^(2, 3)	J28-1	Commercial	SY10E158JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E158JZ ⁽³⁾	J28-1	Commercial	SY100E158JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E158JZTR ^(2, 3)	J28-1	Commercial	SY100E158JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Contact factory for die availability. Dice are guaranteed at T_A = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

TRUTH TABLE

SEL	Data
H	a
L	b

DC ELECTRICAL CHARACTERISTICS

$V_{EE} = V_{EE} (\text{Min.})$ to $V_{EE} (\text{Max.})$; $V_{CC} = V_{CC0} = \text{GND}$

Symbol	Parameter	$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
I _{IH}	Input HIGH Current	—	—	200	—	—	200	—	—	200	μA	—
	D SEL	—	—	150	—	—	150	—	—	150		
I _{EE}	Power Supply Current	—	—	—	—	—	—	—	—	—	mA	—
	10E	—	33	40	—	33	40	—	33	40		
	100E	—	33	40	—	33	40	—	38	46		

AC ELECTRICAL CHARACTERISTICS

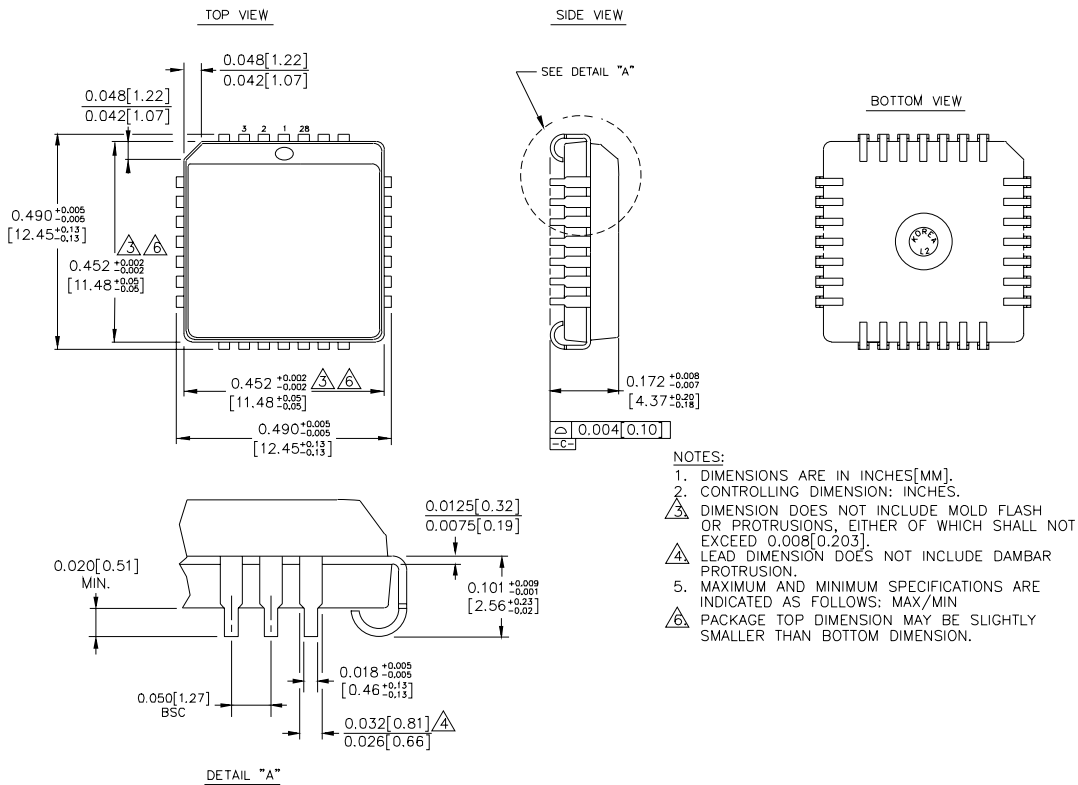
$V_{EE} = V_{EE} (\text{Min.})$ to $V_{EE} (\text{Max.})$; $V_{CC} = V_{CC0} = \text{GND}$

Symbol	Parameter	$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t _{PD}	Propagation Delay to Output	225	385	550	225	385	550	225	385	550	ps	—
	D SEL	400	600	775	400	600	775	400	600	775		
t _{skew}	Within-Device Skew	—	60	—	—	60	—	—	60	—	ps	1
t _r t _f	Rise/Fall Time 20% to 80%	275	425	650	275	425	650	275	425	650	ps	—

Note:

1. Within-device skew is defined as identical transitions on similar paths through a device.

28-PIN PLCC (J28-1)



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