

STORAGE

FLASH-SSD

FLASH-SSD

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SAMSUNG

PRODUCT SELECTION GUIDE

DISPLAYS, MEMORY AND STORAGE
1H 2016

DRAM

FLASH-SSD

MCP

STORAGE

DISPLAYS

CONTACTS



Samsung Semiconductor, Inc.

Samsung continues to lead the industry with the broadest portfolio of memory products and display technology. Its DRAM, flash, mobile and graphics memory are found in many computers — from ultrabooks to powerful servers — and in a wide range of handheld devices such as smartphones and tablets. Samsung is also a leader in display panels for smartphones, TVs and monitors and public information displays. In addition, Samsung provides the industry's widest line of storage products from the consumer to enterprise levels. These include optical disc drives as well as flash storage, such as Solid State Drives, and a range of embedded flash storage products.

Markets

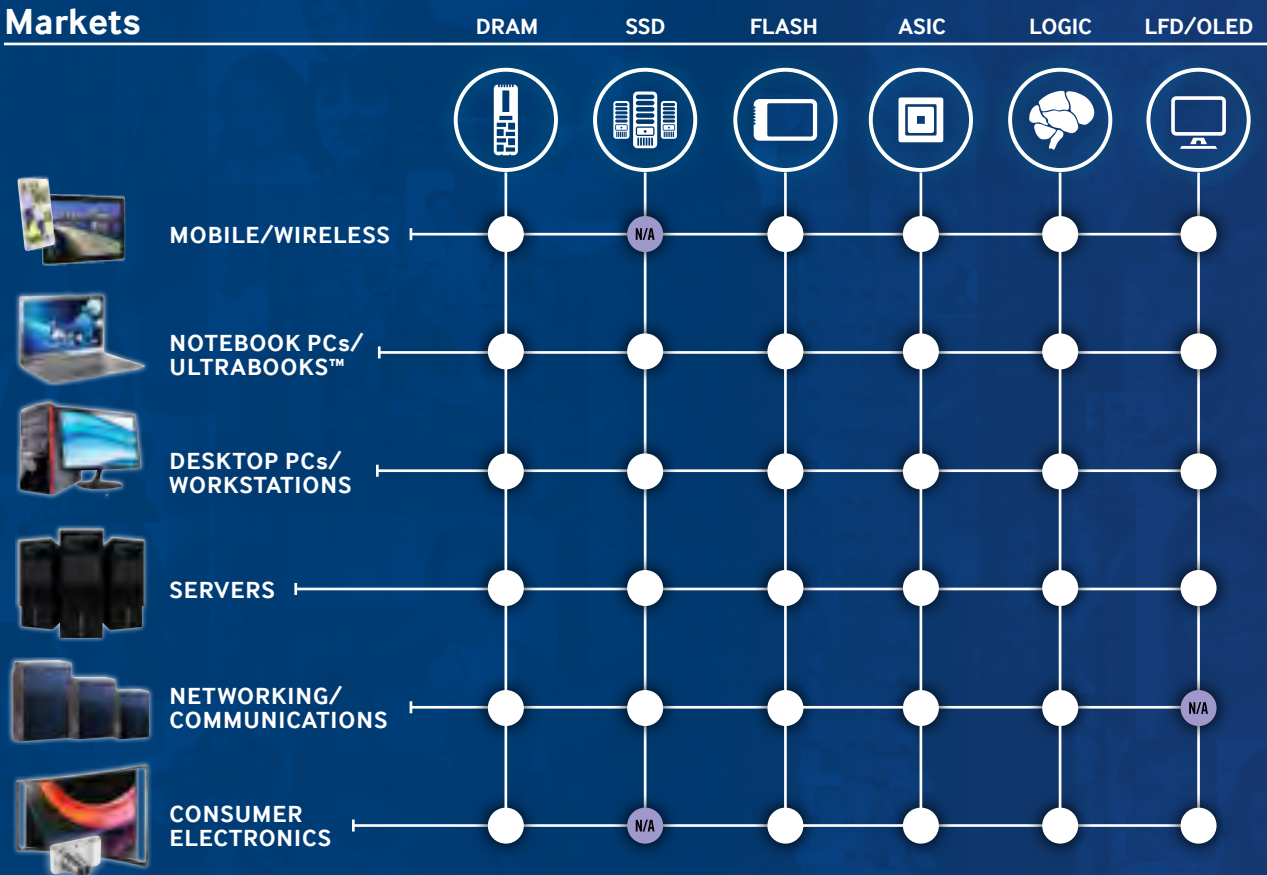


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- Sales Representatives and Distributors

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DDR4 SDRAM COMPONENTS

Density	Voltage	Organization	Part Number	# Pins-Package	Compliance	Speed (Mbps)	Dimensions	Production
4Gb	1.2V	1G x 4	K4A4G045WD-BCRC/PB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x11mm	Now
		512M x 8	K4A4G085WD-BCRC/PB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x11mm	Now
		256M x 16	K4A4G165WD-BCRC/PB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x13.3mm	Now
		1G x 4	K4A4G045WE-BCRC/PB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x11mm	Now
		512M x 8	K4A4G085WE-BCRC/PB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x11mm	Now
		256M x 16	K4A4G165WE-BCRC/PB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x13.3mm	Now
8Gb	1.2V	1G x 8	K4A8G085WB-BCRC/PB	78 ball FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x11mm	Now
		512M x16	K4A8G165WB-BCRC/PB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	2400/2133	7.5x13.3mm	CS: '15, 1Q

DDR4 SDRAM REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.2V	1G x 72	M393A5143DB0-CPB	4Gb (512M x8) * 9	Lead Free & Halogen Free, Flip Chip	2133	1	Now
			M393A5143DB0-CRC	4Gb (512M x8) * 9	Lead Free & Halogen Free, Flip Chip	2400	1	Now
8GB	1.2V	1G x 72	M393A1G40DB0-CPB	4Gb (1G x4) * 18	Lead Free & Halogen Free, Flip Chip	2133	1	Now
			M393A1G40DB1-CRC	4Gb (1G x4) * 18	Lead Free & Halogen Free, Flip Chip	2400	1	Now
			M393A1G43DB0-CPB	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2133	2	Now
			M393A1G43DB1-CRC	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2400	2	Now
			M393A1G40EB1-CPB	4Gb (1G x4) * 18	Lead Free & Halogen Free, Flip Chip	2133	1	Now
			M393A1G40EB1-CRC	4Gb (1G x4) * 18	Lead Free & Halogen Free, Flip Chip	2400	1	Now
			M393A1G43EB1-CPB	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2133	2	Now
			M393A1G43EB1-CRC	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2400	2	Now
16GB	1.2V	2G x 72	M393A2G40DB0-CPB	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	2133	2	Now
			M393A2G40DB1-CRC	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	2400	2	Now
			M393A2G40EB1-CPB	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	2133	2	Now
			M393A2G40EB1-CRC	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	2400	2	Now
			M393A2K40BB0-CPB	8Gb (2G x4) * 18	Lead Free & Halogen Free, Flip Chip	2133	1	Now
			M393A2K40BB1-CRC	8Gb (2G x4) * 18	Lead Free & Halogen Free, Flip Chip	2400	1	Now
			M393A2K43BB1-CPB/CRC	8Gb (1G x8) * 18	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now
32GB	1.2V	4G x 72	M393A4K40BB0-CPB	8Gb (2G x4) * 36	Lead Free & Halogen Free, Flip Chip	2133	2	Now
			M393A4K40BB1-CRC	8Gb (2G x4) * 36	Lead Free & Halogen Free, Flip Chip	2400	2	Now
64GB TSV	1.2V	8G x 72	M393A8G40D40-CRB	4Gb 4H TSV (4G x4) * 36	Lead Free & Halogen Free, 4High TSV	2133	8	Now
			M393A8K40B21-CRB	8Gb 2H TSV (4G x4) * 36	Lead Free & Halogen Free, 2High TSV	2133	4	Now
			M393A8K40B21-CTC	8Gb 2H TSV (4G x4) * 36	Lead Free & Halogen Free, 2High TSV	2400	4	Now
128GB TSV	1.2V	16G x 72	M393AAK40B41-CTC	8Gb 4H TSV (8G x4) * 36	Lead Free & Halogen Free, 4High TSV	2400	8	Now

Notes: DDR4 4Gb (D die) based 0 = IDT 2 = Montage 3 = Inphi PB = DDR4-2133(15-15-15)
0 = IDT 4 = Montage RC = DDR4-2400(17-17-17)
DDR4 4Gb (E die) based 0 = IDT 4 = Montage 3 = Inphi PB = DDR4-2133(15-15-15)
0 = IDT 4 = Montage 3 = Inphi RC = DDR4-2400(17-17-17)
DDR4 (B Die) 8Gb based 0 = IDT 4 = Montage PB = DDR4-2133(15-15-15)
0 = IDT 4 = Montage 3 = Inphi RC = DDR4-2400(17-17-17)

DDR4 SDRAM Load Reduced REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
32GB	1.2V	4G x 72	M386A4G40DM0-CPB	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free, DDP	2133	4	Now
			M386A4G40DM1-CRC	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free, DDP	2400	4	Now
			M386A4K40BB0-CRC5	8G (2Gx4)*36	Lead Free & Halogen Free, Flip Chip	2400	2	Now
64GB	1.2V	8G x 72	M386A8K40BM1-CPB/CRC	8Gb DDP (4G x4) * 36	Lead Free & Halogen Free, DDP	2133/2400	4	Now
128GB	1.2V	16G x 72	M386AAK40B40-CUC	8Gb 4H TSV (8G x4) * 36	Lead Free & Halogen Free, DDP	2400	8	Now

Notes: DDR4 4Gb (D die) based 0 = IDT 2 = Montage PB = DDR4-2133(15-15-15)
5 = IDT 4 = Montage RC = DDR4-2400(17-17-17)
DDR4 (B Die) 8Gb based 0 = IDT 4 = Montage PB = DDR4-2133(15-15-15)
5 = IDT 4 = Montage RC = DDR4-2400(17-17-17)

DDR4 SDRAM VLP REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
16GB	1.2V	2G x 72	M392A2G40DM0-CPB	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free, DDP	2133	2	Now
			M392A2K43BB0-CPB/RC	8Gb (1G x8) * 18	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now
32GB	1.2V	4G x 72	M392A4K40BM0-CPB/RC	8Gb DDP (4G x4) * 18	Lead Free & Halogen Free, DDP	2133/2400	2	Now

DDR4 SDRAM UNBUFFERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.2V	512M x 64	M378A5143DB0-CPB	4Gb (512M x8) *8	Lead Free & Halogen Free	2133	1	Now
			M378A5143EB1-CPB	4Gb (512M x8) *8	Lead Free & Halogen Free	2133	1	Now
			M378A5143EB2-CRC	4Gb (512M x8) *8	Lead Free & Halogen Free	2400	1	Now
8GB	1.2V	1G x 64	M378A1G43DB0-CPB	4Gb (512M x8) *16	Lead Free & Halogen Free	2133	2	Now
			M378A1G43EB1-CRC	4Gb (512M x8) *16	Lead Free & Halogen Free	2400	2	Now
			M378A1K43BB1-CPB	8Gb (1G x8) *8	Lead Free & Halogen Free	2133	2	Now
			M378A1K43BB2-CRC	8Gb (1G x8) *8	Lead Free & Halogen Free	2400	2	Now
16GB	1.2V	2G x 64	M378A2K43BB1-CPB/CRC	8Gb (1G x8) * 16	Lead Free & Halogen Free	2133/2400	2	Now

Notes: PB = DDR4-2133(15-15-15) RC = DD R4-2400(17-17-17)

DDR4 SDRAM ECC UNBUFFERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.2V	512M x72	M391A5143EB1-CPB/CRC	4Gb (512M x8) * 9	Lead Free & Halogen Free, Flip Chip	2133/2400	1	Now
8GB	1.2V	1G x72	M391A1G43DB0-CPB/CRC	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now
			M391A1K43BB1-CPB/CRC	8Gb (1G x8) * 9	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now
16GB	1.2V	2G x72	M391A2K43BB1-CPB/CRC	8Gb (1G x8) * 18	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now

Notes: PB = DDR4-2133(15-15-15) RC = DDR4-2400(17-17-17)

DDR4 SDRAM SODIMM MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.2V	512M x 64	M471A5143DB0-CPB	4Gb (512M x8) * 8	Lead Free & Halogen Free	2133	1	Now
			M471A5143EB0-CPB/CRC	4Gb (512M x8) * 8	Lead Free & Halogen Free	2133/2400	1	Now
8GB	1.2V	1G x 64	M471A1G43DB0-CPB	4Gb (512M x8) * 16	Lead Free & Halogen Free	2133	2	Now
			M471A1G43EB1-CPB/CRC	4Gb (512M x8) * 16	Lead Free & Halogen Free	2133/2400	2	Now
			M471A1K43BB1-CPB/CRC	8Gb (1Gx8)*8	Lead Free & Halogen Free	2133/2400	1	Now
16GB	1.2V	2G x 64	M471A2K43BB1-CPB/CRC	8Gb (1G x8) * 16	Lead Free & Halogen Free	2133/2400	2	Now

Notes: PB = DDR4-2133(15-15-15) RC = DDR4-2400(17-17-17)

DDR4 SDRAM ECC SODIMM MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
8GB	1.2V	1G x 72	M474A1G43DB0-CPB	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2133	2	Now
			M474A1G43DB1-CRC	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2400	2	Now
			M474A1G43EB1-CPB/CRC	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now
16GB	1.2V	2G x 72	M474A2K43BB1-CPB/RC	8Gb (1G x8) * 18	Lead Free & Halogen Free, Flip Chip	2133/2400	2	Now

DDR3 SDRAM REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
8GB	1.5V	1G x 72	M393B1K70QB0-CMA	2Gb (512M x4) * 36	Lead Free & Halogen Free, Flip Chip	1866	2	EOL (LTS:3/31/16)
			M393B1G70QH0-CMA	4Gb (1G x4) * 18	Lead Free & Halogen Free	1866	1	EOL (LTS:3/31/16)
			M393B1G70EB0-CMA	4Gb (1G x4) * 18	Lead Free & Halogen Free, Flip Chip	1866	1	Now
			M393B1G73QH0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free	1866	2	EOL (LTS:3/31/16)
	1.35V		M393B1G73EB0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	1866	2	Now
			M393B1K70QB0-YK0	2Gb (512M x4) * 36	Lead Free & Halogen Free, Flip Chip	1600	2	EOL (LTS:3/31/16)
			M393B1G70QH0-YK0	4Gb (1G x4) * 18	Lead Free & Halogen Free	1600	1	Now
			M393B1G70EB0-YK0	4Gb (1G x4) * 18	Lead Free & Halogen Free, Flip Chip	1600	1	Now
M393B1G73EB0-YK0	4Gb (2R x8) * 18	Lead Free & Halogen Free, Flip Chip	1600	2	Now			
16GB	1.5V	2G x 72	M393B2G70QH0-CMA	4Gb (1G x4) * 36	Lead Free & Halogen Free	1866	2	EOL (LTS:3/31/16)
			M393B2G70DB0-CMA	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	1866	2	Now
			M393B2G70EB0-CMA	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	1866	2	Now
	1.35V		M393B2G70QH0-YK0	4Gb (1G x4) * 36	Lead Free & Halogen Free	1600	2	EOL (LTS:3/31/16)
			M393B2G70DB0-YK0	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	1600	2	Now
			M393B2G70EB0-YK0	4Gb (1G x4) * 36	Lead Free & Halogen Free, Flip Chip	1600	2	Now
32GB	1.35V	4G x 72	M393B4G70DM0-YH9	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free, DDP	1333	4	Now

Notes: 8 = IDT A1 Evergreen 2 = IDT (E-die) YK = DDR3-1600 (11-11-11)
 9 = Inphi UVGS02 3 = Inphi (E-die) MA = DDR3-1866 (13-13-13)

DDR3 SDRAM Load Reduced REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
32GB	1.35V	4G x 72	M386B4G70DM0-YK0	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free, DDP	1600	4	Now
64GB	1.35V	8G x 72	M386B8G70DE0-YH9(4)	4Gb QDP (4G x4) * 36	Lead Free & Halogen Free, QDP	1333	8	Now
	1.5V		M386B8G70DE0-CK0(4)	4Gb QDP (4G x4) * 36	Lead Free & Halogen Free, QDP	1600	8	Now

Notes: 3 = Inphi iMB GS02B 4 = Montage C1

DDR3 SDRAM VLP REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
8GB	1.5V	1G x 72	M392B1G70DB0-CMA	4Gb (1Gx4) * 18	Lead Free & Halogen Free, Flip Chip	1866	1	Now
			M392B1G73DB0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	1866	2	Now
	1.35V		M392B1G70DB0-YK0	4Gb (1Gx4) * 18	Lead Free & Halogen Free, Flip Chip	1600	1	Now
			M392B1G73DB0-YK0	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	1600	2	Now
16GB	1.5V	2G x 72	M392B2G70DM0-CMA	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free, DDP	1866	2	Now
	1.35V		M392B2G70DM0-YK0	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free, DDP	1600	2	Now
32GB	1.35V	4G x 72	M392B4G70DE0-YH9	4Gb QDP (4G x4) * 18	Lead Free & Halogen Free, QDP	1333	4	Now

Notes: 2 = IDT 3 = Inphi YK = DDR3-1600 MA = DDR3-1866 (13-13-13)

DDR3 Non ECC UNBUFFERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.5V	512M x 64	M378B5173QH0-CK0/CMA	4Gb (512M x8) * 8	Lead Free & Halogen Free	1600/1866	1	EOL(LTS: 3/31/16)
			M378B5173DB0-CK0/CMA	4Gb (512M x8) * 8	Lead Free & Halogen Free. Flip Chip	1600/1866	1	Now
			M378B5173EB0-CK0/CMA	4Gb (512M x8) * 8	Lead Free & Halogen Free. Flip Chip	1600/1866	1	Now
	1.35V		M378B5173QH0-YK0/YMA	4Gb (512M x8) * 8	Lead Free & Halogen Free	1600/1866	1	EOL(LTS: 3/31/16)
			M378B5173EB0-YK0/*CMA	4Gb (512M x8) * 8	Lead Free & Halogen Free. Flip Chip	1600/1866	1	Now
8GB	1.5V	1G x 64	M378B1G73QH0-CK0/MA	4Gb (512M x8) * 16	Lead Free & Halogen Free	1600/1866	2	EOL(LTS: 3/31/16)
			M378B1G73DB0-CK0/MA	4Gb (512M x8) * 16	Lead Free & Halogen Free. Flip Chip	1600/1866	2	Now
			M378B1G73EB0-CK0/CMA	4Gb (512M x8) * 16	Lead Free & Halogen Free. Flip Chip	1600/1866	2	Now
	1.35V		M378B1G73QH0-YK0/MA	4Gb (512M x8) * 16	Lead Free & Halogen Free	1600/1866	2	EOL(LTS: 3/31/16)
			M378B1G73EB0-YK0/*CMA	4Gb (512M x8) * 16	Lead Free & Halogen Free. Flip Chip	1600/1866	2	Now

Notes: YK = DDR3-1600 (11-11-11) MA = DDR3-1866 (13-13-13) * 1.35V is compatible to 1.5V

DDR3 SDRAM UNBUFFERED MODULES (ECC)

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.5V	512Mx72	M391B5173EB0-CMA	4Gb (512M x8) * 9	Lead Free & Halogen Free	1866	1	Now
	1.35V		M391B5173EB0-YK0	4Gb (512M x8) * 9	Lead Free & Halogen Free	1600	1	Now
8GB	1.5V	1G x 72	M391B1G73QH0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free	1866	2	Now
			M391B1G73EB0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free	1866	2	Now
	1.35V		M391B1G73EB0-YK0	4Gb (512M x8) * 18	Lead Free & Halogen Free	1600	2	Now

Notes: YK0 = DDR3-1600 (11-11-11) MA = DDR3-1866 (13-13-13)

DDR3 SDRAM SODIMM MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
4GB	1.35V	512M x 72	M474B5173EB0-YK0	4Gb (512M x8) * 9	Lead Free & Halogen Free, Flip Chip	1866	1	Now
8GB	1.5V	1G x 72	M474B1G73QH0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free	1866	2	EOL(LTS: 3/31/16)
			M474B1G73EB0-CMA	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	1866	2	Now
	1.35V		M474B1G73QH0-YK0	4Gb (512M x8) * 18	Lead Free & Halogen Free	1600	2	EOL(LTS: 3/31/16)
			M474B1G73EB0-YK000	4Gb (512M x8) * 18	Lead Free & Halogen Free, Flip Chip	1600	2	Now

DDR3 SDRAM COMPONENTS

Density	Voltage	Organization	Part Number	# Pins- Package	Compliance	Speed (Mbps)	Dimensions	Production
1Gb	1.5V	128M x 8	K4B1G0846G-BCH9/K0/MA	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1333/1600/1866	7.5x11mm	Now
		128M x 16	K4B1G1646G-BCH9/K0/MA/NB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1333/1600/1866/2133	7.5x13.3mm	Now
		128M x 8	K4B1G0846I-BCK0/MA/NB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x11mm	Now
		128M x 16	K4B1G1646I-BCK0/MA/NB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x13.3mm	Now
	1.35V	128M x 8	K4B1G0846G-BYH9/K0	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1333/1600	7.5x11mm	Now
		128M x 16	K4B1G1646G-BYH9/K0	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1333/1600	7.5x13.3mm	Now
		128M x 8	K4B1G0846I-BYK0/MA	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1800	7.5x11mm	Now
		128M x 16	K4B1G1646I-BYK0/MA	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1800	7.5x13.3mm	Now
2Gb	1.5V	256M x 8	K4B2G0846Q-BCK0/MA/NB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x11mm	EOL(LTS: 3/31/16)
		128M x 16	K4B2G1646Q-BCK0/MA/NB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x13.3mm	EOL(LTS: 3/31/16)
		512M x 8	K4B2G0846F-BCK0/MA/NB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x11mm	Now
		256M x 16	K4B2G1646F-BCK0/MA/NB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x13.3mm	Now
	1.35V	512M x 4	K4B2G0446Q-BYK0	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600	7.5x11mm	EOL(LTS: 3/31/16)
		256M x 8	K4B2G0846Q-BYK0/MA	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x11mm	EOL(LTS: 3/31/16)
		128M x 16	K4B2G1646Q-BYK0/MA	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x13.3mm	EOL(LTS: 3/31/16)
		256M x 8	K4B2G0846F-BK0/MA	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x11mm	Now
		128M x 16	K4B2G1646F-BK0/MA	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x13.3mm	Now
		512M x 8	K4B4G0846D-BCK0/MA/NB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x11mm	Now
4Gb	1.5V	256M x 16	K4B4G1646D-BCK0/MA/NB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x13.3mm	Now
		512M x 8	K4B4G0846E-BCK0/MA/NB	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x11mm	Now
		256M x 16	K4B4G1646E-BCK0/MA/NB	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866/2133	7.5x13.3mm	Now
		1G x 4	K4B4G0446D-BYK0	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600	7.5x11mm	Now
	1.35V	512M x 8	K4B4G0846D-BYK0	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600	7.5x11mm	Now
		256M x 16	K4B4G1646D-BYK0/MA	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x13.3mm	Now
		1G x 4	K4B4G0446E-BYK0/MA	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x11mm	Now
		512M x 8	K4B4G0846E-BYK0/MA	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x11mm	Now
		256M x 16	K4B4G1646E-BYK0/MA	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1600/1866	7.5x13.3mm	Now
		512M x 8	K4B8G1646Q-MCK0/MA	96 Ball -FBGA	Lead Free & Halogen Free	1600/1866	11x13.3mm	Now
8Gb	1.5V	512M x 16	K4G8G1646D-MCK0/MA	96 Ball -FBGA	Lead Free & Halogen Free	1600/1866	11x13.3mm	Now
			K4B8G1646Q-MYK0	96 Ball -FBGA	Lead Free & Halogen Free	1600	11x13.3mm	Now
	1.35V	512M x 16	K4G8G1646Q-MYK0	96 Ball -FBGA	Lead Free & Halogen Free	1600 / (1866)	11x13.3mm	Now
			K4G8G1646D-MYK0/(MA)	96 Ball -FBGA	Lead Free & Halogen Free	1600 / (1866)	11x13.3mm	Now

Notes: H9 = DDR3-1333 (9-9-9) K0 = DDR3-1600 (11-11-11) MA = DDR3-1866 (13-13-13) NB = DDR3-2133 (14-14-14)

DDR2 SDRAM COMPONENTS

Density	Organization	Part Number	# Pins-Package	Dimensions	Package	Speed (Mbps)	Production
512Mb	64M x 8	K4T51083QQ-BC(E6/F7/E7/F8)	60-FBGA	7.5x9.5mm	Lead free & Halogen free , Flip chip	667/800/1066	Now
	32M x 16	K4T51163QQ-BC(E6/F7/E7/F8)	84-FBGA	7.5x12.5mm	Lead free & Halogen free , Flip chip	667/800/1066	Now
1Gb	128M x 8	K4T1G084QG-BC(E6/F7/E7/F8)	60-FBGA	7.5x9.5mm	Lead free & Halogen free , Flip chip	667/800/1066	Now
	64M x 16	K4T1G164QG-BC(E6/F7/E7/F8)	84-FBGA	7.5x12.5mm	Lead free & Halogen free , Flip chip	667/800/1066	Now

Notes: E6 = DDR2-667 (5-5-5) E7 = DDR2-800 (5-5-5) F7 = DDR2-800 (6-6-6) F8 = DDR2-1066 (7-7-7)

GRAPHICS DRAM COMPONENTS

Type	Density	Organization	Part Number	Package	VDD/VDDQ	Speed Bin (MHz)	Production
GDDR5	8Gb	256M x 32	K4G80325FB-HC(03/28/25)	170-FCFBGA	1.5V/1.5V	6000/7000/8000	Now
			K4G80325FB-HC(03/28/25)	170-FCFBGA	1.35V/1.35V	5000/6000/(TBD)	Now
	4Gb	128M x 32	K4G41325FE-HC2(03/28/25/22)	170-FCFBGA	1.5V/1.5V	6000/7000/8000/9000	Now
			K4G41325FE-HC2(03/28/25/22)	170-FCFBGA	1.35V/1.35V	5000/6000/7000/TBD	Now
gDDR3	4Gb	256M x 16	K4W4G1646E-BC(1A/1B)	96-FCFBGA	1.5V/1.5V	2133/2400	Now
			K4W4G1646E-BC(1A/1B)	96-FCFBGA	1.35V/1.35V	1866/2133	Now
	2Gb	128M x 16	K4W2G1646Q-BC(12/11/1A)	96-FCFBGA	1.5V/1.5V	1600/1866/2133	Now
			K4W2G1646Q-BC(1A)	96-FCFBGA	1.35V/1.35V	1866	Now
			K4W2G1646Q-BY(12)	96-FCFBGA	1.35V/1.35V	1600	Now

Notes: Package & Speed Bin Codes

H: FBGA (Halogen Free & Lead Free) (DDR3)
 B: FCFBGA (Halogen Free & Lead Free) (DDR3)
 H: FCFBGA (Halogen Free & Lead Free) (GDDR5)
 F: FBGA (Halogen Free & Lead Free) (GDDR5)
 22: 0.22ns (9000Mbps)
 25: 0.25ns (8000Mbps)
 28: 0.28ns (7000Mbps)

03: 0.3ns (6000Mbps)
 04: 0.4ns (5000Mbps)
 05: 0.5ns (4000Mbps)
 1B: 8.3ns (2400Mbps gDDR3)
 1A: 1.0ns (2133Mbps gDDR3)
 11: 1.1ns (1866Mbps)
 12: 1.25ns (1600Mbps)

MOBILE DRAM COMPONENTS

Type	Density	Organization	Part Number	Package	Power	Production
LPDDR3	8Gb	1CH x 32	K4E8E324EB-EGCF	178-FBGA, 11x11.5, SDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K4E8E324EB-AGCF	168-FBGA, 12x12, SDP, 1866Mbps	1.8V/1.2V/1.2V	Now
		2CH x 32	K3QF1F10EM-AGCE	253-FBGA, 11x11.5, DDP, 1600Mbps	1.8V/1.2V/1.2V	Now
			K3QF1F10EM-BGCE	216-FBGA, 12x12, DDP, 1600Mbps	1.8V/1.2V/1.2V	Now
			K3QF1F10EM-FGCE	256-FBGA, 14x14, DDP, 1600Mbps	1.8V/1.2V/1.2V	Now
	12Gb	1CH x 32	K4E2E304EA-AGCF	168-FBGA, 12x12, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K4E2E304EA-AGCF	168-FBGA, 12x12, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
	16Gb	1CH x 32	K4E6E304EB-EGCF	178-FBGA, 11x11.5, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K4E6E304EB-AGCF	168-FBGA, 12x12, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
		2CH x 32	K3QF2F20BM-AGCF	253-FBGA, 11x11.5, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K3QF3F30BM-BGCF	216-FBGA, 12x12, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K3QF3F30BM-FGCF	256-FBGA, 14x14, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K3QF3F30BM-QGCF	216-FBGA, 15x15, DDP, 1866Mbps	1.8V/1.2V/1.2V	Now
	24Gb	1CH x 32	K4EHE304EA-AGCF	168-FBGA, 12x12, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K3QF6F60AM-BGCF	216-FBGA, 12x12, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
		2CH x 32	K3QF6F60AM-FGCF	256-FBGA, 14x14, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K3QF6F60AM-QGCF	216-FBGA, 15x15, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
	32Gb	1CH x 32	K4EBE304EB-EGCF	178-FBGA, 11x11.5, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
			K3QF4F40BM-AGCF	253-FBGA, 11x11.5, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
		2CH x 32	K3QF4F40BM-FGCF	256-FBGA, 14x14, QDP, 1866Mbps	1.8V/1.2V/1.2V	Now
LPDDR4	8Gb	2CH x 16	K4F8E304HB-MGCJ	200-FBGA, 10x15, SDP, 3733Mbps	1.8V/1.1V/1.1V	Now
	12Gb	2CH x 16	K4F2E3S4HM-MGCJ	200-FBGA, 10x15, SDP, 3733Mbps	1.8V/1.1V/1.1V	Now
	16Gb	2CH x 16	K4F6E304HB-MGCJ	200-FBGA, 10x15, DDP, 3733Mbps	1.8V/1.1V/1.1V	Now
			K3RG1G10BM-MGCH	366-FBGA, 15x15, DDP, 3200Mbps	1.8V/1.1V/1.1V	Now
	24Gb	2CH x 16	K4FHE3D4HM-MFCH	200-FBGA, 10x15, DDP, 3200Mbps	1.8V/1.1V/1.1V	CS
			K3RG4G40MM-AGCH	272-FBGA, 15x15, DDP, 3200Mbps	1.8V/1.1V/1.1V	CS
		4CH x 16	K3RG4G40MM-MGCJ	366-FBGA, 15x15, DDP, 3733Mbps	1.8V/1.1V/1.1V	Now
	K3RG2G20BM-AGCH		272-FBGA, 15x15, QDP, 3200Mbps	1.8V/1.1V/1.1V	Now	
	32Gb	4CH x 16	K3RG2G20BM-MGCJ	366-FBGA, 15x15, QDP, 3733Mbps	1.8V/1.1V/1.1V	Now
			K3RG2G20BM-FGCH	432-FBGA, 15x15, QDP, 3200Mbps	1.8V/1.1V/1.1V	CS
			K3RG6G60MM-MGCJ	366-FBGA, 15x15, QDP, 3733Mbps	1.8V/1.1V/1.1V	CS

COMPONENT DRAM ORDERING INFORMATION

	1	2	3	4	5	6	7	8	9	10	11
	K	4	T	XX	XX	X	X	X	X	X	XX
SAMSUNG Memory											Speed
DRAM											Temp & Power
DRAM Type											Package Type
Density											Generation
Bit Organization											Interface (VDD, VDDQ)
											Number of Internal Banks

1. Memory (K)

08: x 8

2. DRAM: 4

15: x 16 (2CS)

3. DRAM Type

B: DDR3 SDRAM
D: GDDR SDRAM
G: GDDR5 SDRAM

16: x 16

26: x 4 Stack (JEDEC Standard)

27: x 8 Stack (JEDEC Standard)

30: x 32 (2CS, 2CKE)

31: x 32 (2CS)

32: x 32

H: DDR SDRAM
J: GDDR3 SDRAM
M: Mobile SDRAM
N: SDDR2 SDRAM
S: SDRAM
T: DDR SDRAM

6. # of Internal Banks

2: 2 Banks

3: 4 Banks

4: 8 Banks

5: 16 Banks

U: GDDR4 SDRAM

V: Mobile DDR SDRAM Power Efficient Address

W: SDDR3 SDRAM

X: Mobile DDR SDRAM

Y: XDR DRAM

Z: Value Added DRAM

7. Interface (VDD, VDDQ)

2: LVTTTL, 3.3V, 3.3V

4: LVTTTL, 2.5V, 2.5V

5: SSTL-2 1.8V, 1.8V

6: SSTL-15 1.5V, 1.5V

8: SSTL-2, 2.5V, 2.5V

A: SSTL, 2.5V, 1.8V

F: POD-15 (1.5V, 1.5V)

H: SSTL_2 DLL, 3.3V, 2.5V

M: LVTTTL, 1.8V, 1.5V

N: LVTTTL, 1.5V, 1.5V

P: LVTTTL, 1.8V, 1.8V

Q: SSTL-2 1.8V, 1.8V

R: SSTL-2, 2.8V, 2.8V

U: DRSL, 1.8V, 1.2V

8. Generation

A: 2nd Generation

B: 3rd Generation

C: 4th Generation

D: 5th Generation

E: 6th Generation

F: 7th Generation

G: 8th Generation

H: 9th Generation

I: 10th Generation

J: 11th Generation

K: 12th Generation

M: 1st Generation

N: 14th Generation

Q: 17th Generation

9. Package Type

DDR2 DRAM

L: TSOP II (Lead-free & Halogen-free)

H: FBGA (Lead-free & Halogen-free)

F: FBGA for 64Mb DDR (Lead-free & Halogen-free)

6: sTSOP II (Lead-free & Halogen-free)

T: TSOP II

N: sTSOP II

G: FBGA

U: TSOP II (Lead-free)

V: sTSOP II (Lead-free)

Z: FBGA (Lead-free)

DDR2 SDRAM

Z: FBGA (Lead-free)

J: FBGA DDP (Lead-free)

Q: FBGA QDP (Lead-free)

H: FBGA (Lead-free & Halogen-free)

M: FBGA DDP (Lead-free & Halogen-free)

E: FBGA QDP (Lead-free & Halogen-free)

T: FBGA DSP (Lead-free & Halogen-free, Thin)

DDR3 SDRAM

Z: FBGA (Lead-free)

H: FBGA (Halogen-free & Lead-free)

Graphics Memory

Q: TQFP

U: TQFP (Lead Free)

G: 84/144 FBGA

V: 144 FBGA (Lead Free)

Z: 84 FBGA (Lead Free)

T: TSOP

L: TSOP (Lead Free)

A: 136 FBGA

B: 136 FBGA (Lead Free)

H: FBGA (Hologen Free & Lead Free)

E: 100 FBGA (Hologen Free & Lead Free)

SDRAM

L: TSOP II (Lead-free & Halogen-free)

N: STSOP II

T: TSOP II

U: TSOP II (Lead-free)

V: sTSOP II (Lead-free)

COMPONENT DRAM ORDERING INFORMATION

	1	2	3	4	5	6	7	8	9	10	11
	K	4	T	XX	XX	X	X	X	X	X	XX
SAMSUNG Memory											Speed
DRAM											Temp & Power
DRAM Type											Package Type
Density											Generation
Bit Organization											Interface (VDD, VDDQ)
											Number of Internal Banks

XDR DRAM

J: BOC(LF) P: BOC

Mobile DRAM

Leaded/Lead Free

- G/A: 52balls FBGA Mono
- R/B: 54balls FBGA Mono
- X/Z: 54balls BOC Mono
- J/V: 60(72)balls FBGA Mono 0.5pitch
- L /F: 60balls FBGA Mono 0.8pitch
- S/D: 90balls FBGA

Monolithic (11mm x 13mm)

- F/H: Smaller 90balls FBGA Mono
- Y/P: 54balls CSP DDP
- M/E: 90balls FBGA DDP

10. Temp & Power - COMMON (Temp, Power)

- C: Commercial, Normal (0°C – 95°C) & Normal Power
- C: (Mobile Only) Commercial (-25 ~ 70°C), Normal Power
- J: Commercial, Medium
- L: Commercial, Low (0°C – 95°C) & Low Power
- L: (Mobile Only) Commercial, Low, i-TCSR
- F: Commercial, Low, i-TCSR & PASR & DS
- E: Extended (-25~85°C), Normal
- N: Extended, Low, i-TCSR
- G: Extended, Low, i-TCSR & PASR & DS
- I: Industrial, Normal (-40°C – 85°C) & Normal Power
- P: Industrial, Low (-40°C – 85°C) & Low Power
- H: Industrial, Low, i-TCSR & PASR & DS

11. Speed (Wafer/Chip Biz/BGD: 00)

DDR SDRAM

- CC: DDR400 (200MHz @ CL=3, tRCD=3, tRP=3)
- B3: DDR333 (166MHz @ CL=2.5, tRCD=3, tRP=3) *1
- A2: DDR266 (133MHz @ CL=2, tRCD=3, tRP=3)
- B0: DDR266 (133MHz @ CL=2.5, tRCD=3, tRP=3)

Note 1: "B3" has compatibility with "A2" and "B0"

DDR2 SDRAM

- CC: DDR2-400 (200MHz @ CL=3, tRCD=3, tRP=3)
- D5: DDR2-533 (266MHz @ CL=4, tRCD=4, tRP=4)
- E6: DDR2-667 (333MHz @ CL=5, tRCD=5, tRP=5)
- F7: DDR2-800 (400MHz @ CL=6, tRCD=6, tRP=6)
- E7: DDR2-800 (400MHz @ CL=5, tRCD=5, tRP=5)

DDR3 SDRAM

- F7: DDR3-800 (400MHz @ CL=6, tRCD=6, tRP=6)
- F8: DDR3-1066 (533MHz @ CL=7, tRCD=7, tRP=7)
- G8: DDR3-1066 (533MHz @ CL=8, tRCD=8, tRP=8)
- H9: DDR3-1333 (667MHz @ CL=9, tRCD=9, tRP=9)
- K0: DDR3-1600 (800MHz @ CL=11, tRCD=11, tRP=11)
- MA: DDR3-1866 (933MHz @ CL=13, tRCD=13, tRP=13)
- NB: DDR3-2133 (1067MHz @ CL=14, tRCD=14, tRP=14)

Graphics Memory

- 18: 1.8ns (550MHz)
- 04: 0.4ns (2500MHz)
- 20: 2.0ns (500MHz)
- 05: 0.5ns (2000MHz)
- 22: 2.2ns (450MHz)
- 5C: 0.56ns (1800MHz)
- 25: 2.5ns (400MHz)
- 06: 0.62ns (1600MHz)
- 2C: 2.66ns (375MHz)
- 6A: 0.66ns (1500MHz)
- 2A: 2.86ns (350MHz)
- 07: 0.71ns (1400MHz)
- 33: 3.3ns (300MHz)
- 7A: 0.77ns (1300MHz)
- 36: 3.6ns (275MHz)
- 08: 0.8ns (1200MHz)
- 40: 4.0ns (250MHz)

09: 0.9ns (1100MHz)

- 45: 4.5ns (222MHz)
- 1 : 1.0ns (1000MHz)
- 50/5A: 5.0ns (200MHz)
- 1 : 1.1ns (900MHz)
- 55: 5.5ns (183MHz)
- 12: 1.25ns (800MHz)
- 60: 6.0ns (166MHz)
- 14: 1.4ns (700MHz)
- 16: 1.6ns (600MHz)

SDRAM (Default CL=3)

- 50: 5.0ns (200MHz CL=3)
- 60: 6.0ns (166MHz CL=3)
- 67: 6.7ns
- 75: 7.5ns PC133 (133MHz CL=3)

XDR DRAM

- A2: 2.4Gbps, 36ns, 16Cycles
- B3: 3.2Gbps, 35ns, 20Cycles
- C3: 3.2Gbps, 35ns, 24Cycles
- C4: 4.0Gbps, 28ns, 24Cycles
- DS: Daisychain Sample

Mobile-SDRAM

- 60: 166MHz, CL 3
- 75: 133MHz, CL 3
- 80: 125MHz, CL 3
- 1H: 105MHz, CL 2
- 1L: 105MHz, CL 3
- 15: 66MHz, CL 2 & 3

Mobile-DDR

- C3: 133MHz, CL 3
 - C2: 100MHz, CL 3
 - C0: 66MHz, CL 3
- Note: All Lead-free and Halogen-free products are in compliance with RoHS

MODULE DRAM ORDERING INFORMATION

	1	2	3	4	5	6	7	8	9	10	11	12	13
	M	X	XX	T	XX	X	X	X	X	X	X	XX	X
SAMSUNG Memory												AMB Vendor	
DIMM												Speed	
Data bits												Temp & Power	
DRAM Component Type												PCB Revision	
Depth												Package	
Number of Banks												Generation	
Bit Organization													

1. Memory Module: M

2. DIMM Type

- 3: DIMM
- 4: SODIMM

3. Data bits

- 12: x 72 184pin Low Profile Registered DIMM
- 63: x 63 PC100/PC133 μ SODIMM with SPD for 144pin
- 64: x 64 PC100/PC133 SODIMM with SPD for 144pin (Intel/JEDEC)
- 66: x 64 Unbuffered DIMM with SPD for 144pin/168pin (Intel/JEDEC)
- 68: x 64 184pin Unbuffered DIMM
- 70: x 64 200pin Unbuffered SODIMM
- 71: x 64 204pin Unbuffered SODIMM
- 74: x 72/ECC Unbuffered DIMM with SPD for 168pin (Intel/JEDEC)
- 77: x 72/ECC PLL + Register DIMM with SPD for 168pin (Intel PC100)
- 78: x 64 240pin Unbuffered DIMM
- 81: x 72 184pin ECC unbuffered DIMM
- 83: x 72 184pin Registered DIMM
- 90: x 72/ECC PLL + Register DIMM
- 91: x 72 240pin ECC unbuffered DIMM
- 92: x 72 240pin VLP Registered DIMM
- 93: x 72 240pin Registered DIMM
- 95: x 72 240pin Fully Buffered DIMM with SPD for 168pin (JEDEC PC133)

4. DRAM Component Type

- B: DDR3 SDRAM (1.5V VDD)
- L: DDR SDRAM (2.5V VDD)
- S: SDRAM
- T: DDR2 SDRAM (1.8V VDD)

5. Depth

- 09: 8M (for 128Mb/512Mb)
- 17: 16M (for 128Mb/512Mb)
- 16: 16M
- 28: 128M
- 29: 128M (for 128Mb/512Mb)
- 32: 32M
- 33: 32M (for 128Mb/512Mb)
- 51: 512M
- 52: 512M (for 512Mb/2Gb)
- 56: 256M
- 57: 256M (for 512Mb/2Gb)
- 59: 256M (for 128Mb/512Mb)
- 64: 64M
- 65: 64M (for 128Mb/512Mb)
- 1G: 1G
- 1K: 1G (for 2Gb)

6. # of Banks in Comp. & Interface

- 1: 4K/64mxRef., 4Banks & SSTL-2
- 2 : 8K/64ms Ref., 4Banks & SSTL-2
- 2: 4K/64ms Ref., 4Banks & LVTTTL (SDR Only)
- 5: 8K/64ms Ref., 4Banks & LVTTTL (SDR Only)
- 5: 4Banks & SSTL-1.8V
- 6: 8Banks & SSTL-1.8V

7. Bit Organization

- 0: x 4
- 3: x 8
- 4: x16
- 6: x 4 Stack (JEDEC Standard)
- 7: x 8 Stack (JEDEC Standard)
- 8: x 4 Stack
- 9: x 8 Stack

8. Generation

- A: 2nd Gen.
- B: 3rd Gen.
- C: 4th Gen.
- D: 5th Gen.
- E: 6th Gen.
- F: 7th Gen.
- G: 8th Gen.
- M: 1st Gen.
- Q: 17th Gen.

9. Package

- E: FBGA QDP (Lead-free & Halogen-free)
- G: FBGA
- H: FBGA (Lead-free & Halogen-free)
- J: FBGA DDP (Lead-free)
- M: FBGA DDP (Lead-free & Halogen-free)
- N: sTSOP
- Q: FBGA QDP (Lead-free)
- T: TSOP II (400mil)
- U: TSOP II (Lead-Free)
- V: sTSOP II (Lead-Free)
- Z: FBGA (Lead-free)

10. PCB Revision

- 0: Mother PCB
- 1: 1st Rev
- 2: 2nd Rev.
- 3: 3rd Rev.
- 4: 4th Rev.
- A: Parity DIMM
- S: Reduced PCB
- U: Low Profile DIMM

11. Temp & Power

- C: Commercial Temp. (0°C ~ 95°C) & Normal Power
- L: Commercial Temp. (0°C ~ 95°C) & Low Power

12. Speed

- CC: (200MHz @ CL=3, tRCD=3, tRP=3)
- D5: (266MHz @ CL=4, tRCD=4, tRP=4)
- E6: (333MHz @ CL=5, tRCD=5, tRP=5)
- F7: (400MHz @ CL=6, tRCD=6, tRP=6)
- E7: (400MHz @ CL=5, tRCD=5, tRP=5)
- F8: (533MHz @ CL=7, tRCD=7, tRP=7)
- G8: (533MHz @ CL=8, tRCD=8, tRP=8)
- H9: (667MHz @ CL=9, tRCD=9, tRP=9)
- K0: (800MHz @ CL=10, tRCD=10, tRP=10)
- 7A: (133MHz CL=3/PC100 CL2)

13. AMB Vendor for FBDIMM

- 0, 5: Intel
 - 1, 6, 8: IDT
 - 9: Montage
- Note: All Lead-free and Halogen-free products are in compliance with RoHS

DDR4 SDRAM MODULE ORDERING INFORMATION

	1	2	3	4	5	6	7	8	9	10	11	12
	M	X	XX	A	XX	X	X	X	X	X	X	XX
Memory Module											Speed	
DIMM Type											Temp & Power	
Data bits											PCB Revision	
DRAM Component Type											Package	
Depth											Component Revision	
# of Banks in Comp. & Interface												
Bit Organization												

1. Memory Module: M

2. DIMM Type

3: R/LRDIMM
4: SODIMM

3. Data bits

74: x 72 260pin SODIMM
86: x 72 288pin Load Reduced DIMM
93: x 72 288pin Registered DIMM

4. DRAM Component Type

A: DDR4 SDRAM (1.2V VDD)

5. Depth

1G: 1G
2G: 2G
4G: 4G
8G: 8G
1K: 1G (for 8Gb)
2K: 2G (for 8Gb)

6. # of Banks in Comp. & Interface

4: 16Banks & POD-1.2V

7. Bit Organization

0: x 4
3: x 8

8. Component Revision

M: 1st Gen.
A: 2nd Gen.
B: 3rd Gen.
C: 4th Gen.
D: 5th Gen.
E: 6th Gen.
F: 7th Gen.
G: 8th Gen.

9. Package

B: FBGA (Halogen-free & Lead-free, Flip Chip)
M: FBGA (Halogen-free & Lead-free, DDP)

10. PCB Revision

0: None
1: 1st Rev.
2: 2nd Rev.
3: 3rd Rev.
4: 4th Rev.

11. Temp & Power

C: Commercial Temp. (0°C ~ 85°C) & Normal Power

12. Speed

PB: DDR4-2133
(1066MHz @ CL=15, tRCD=15, tRP=15)

DDR4 SDRAM MEMORY ORDERING INFORMATION

	1	2	3	4	5	6	7	8	9	10	11
	K	4	A	XX	XX	X	X	X	X	X	XX
Samsung Memory											Speed
DRAM											Temp & Power
DRAM Type											Package Type
Density											Revision
Bit Organization											Interface (VDD, VDDQ)
											#of Internal Banks

1. Samsung Memory: K

2. DRAM: 4

3. DRAM Type

A: DDR4 SDRAM

4. Density

4G: 4Gb
8G: 8Gb

5. Bit Organization

04: x 4
08: x 8

6. # of Internal Banks

5: 16Banks

7. Interface (VDD, VDDQ)

W: POD (1.2V, 1.2V)

8. Revision

M: 1st Gen.
A: 2nd Gen.
B: 3rd Gen.
C: 4th Gen.
D: 5th Gen.
E: 6th Gen.
F: 7th Gen.
G: 8th Gen.
H: 9th Gen.

9. Package Type

B: FBGA (Halogen-free & Lead-free, Flip Chip)
M: FBGA (Halogen-free & Lead-free, DDP)

10. Temp & Power

C: Commercial Temp. (0°C ~ 85°C) &
Normal Power

11. Speed

PB: DDR4-2133
(1066MHz @ CL=15, tRCD=15, tRP=15)
RC: DDR4-2400
(1200MHz @ CL=17, tRCD=17, tRP=17)

Application	Interface	Bandwidth	Density	Flash Die	Part Number	Seq R/W MB/s	Random R/W IOPS	mm Pkg Size (X,Y,Z)	Status
High Performance	UFS 2.0	6Gb/s per lane Up to 2 lanes	256GB	256Gb*8	KLUEG8U1EM-B0B10**	850/260	50K / 30K	11.5 x 13.0 x 1.2	Sampling
			128GB	128Gb*8	KLUDG8J1CB-B0B10**	460/160	20K / 14K		
		6Gb/s per lane 1 lane only	64GB	128Gb*4	KLUCG4J1CB-B0B10**			440/80	18K / 10K
			32GB	64Gb*4	KLUBG4G1CE-B0B10**				
Mainstream	eMMC v5.1	400 MB/s	128GB	128Gb*8	KLMDG8JENB-B0410**	310/140	14K / 14K	11.5 x 13.0 x 1.0	MP
			64GB	128Gb*4	KLMCG4JENB-B0410**				
			32GB	128Gb*2	KLMBG8JENB-B0410**	310/70	13K / 14K	11.5 x 13.0 x 0.8	
	eMMC v5.0		64GB	64Gb*8	KLMCG8GEND-B0310**	250/100	6.5K / 13K	11.5 x 13.0 x 1.0	
			32GB	64Gb*4	KLMBG4GEND-B0310**				
			128GB	64Gb*16	KLMDGAWEBD-B0310**	250/45	6K / 5K	11.5 x 13.0 x 1.4	
			64GB	64Gb*8	KLMCG8WEBD-B0310**	260/46		11.5 x 13.0 x 1.0	
			32GB	64Gb*4	KLMBG4WEBD-B0310**				
Low End	eMMC v5.1	400 MB/s	16GB	128Gb*1	KLMAG1JENB-B0410**	285/40	8K / 10K	11.5 x 13.0 x 0.8	MP
			8GB	64Gb*1	KLM8G1GEME-B0410**	185/40	5.2K / 2.5K		
	eMMC v5.0		16GB	64Gb*2	KLMAG2GEND-B0310**	230/50	6.5K / 6K	11.5 x 13.0 x 0.8	
			8GB	64Gb*1	KLM8G1GEND-B0310**	160/25	6.5K / 2.5K		
			4GB	32Gb*1	KLM4G1FEPD-B0310**	120/20	5K / 0.5K	11.0 x 10.0 x 0.8	
			16GB	64Gb*2	KLMAG2WEPD-B0310**	150/12	5K / 1.2K	11.5 x 13.0 x 0.8	
			8GB	64Gb*1	KLM8G1WEPD-B0310**	140/8	5K / 0.6K		

MMC5.1 is backwards compatible with 5.0 & 4.5

**Denotes bucket code for latest firmware patch

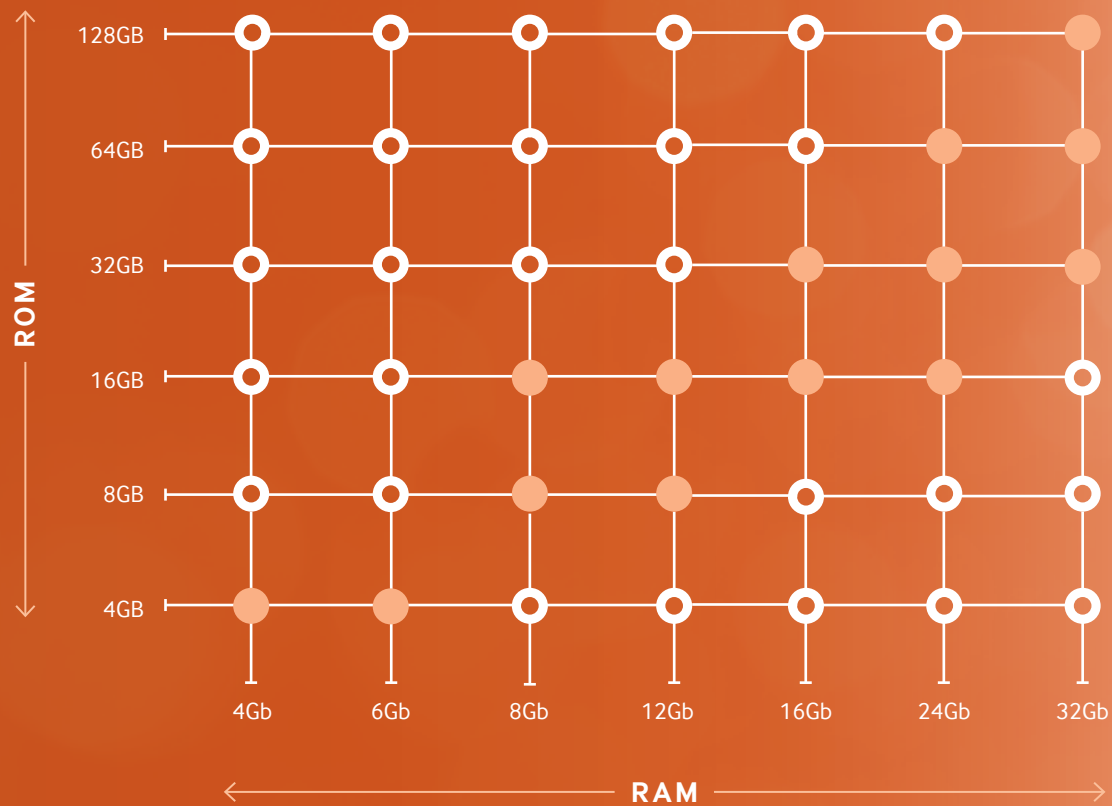
SOLID STATE DRIVES (SSD)

Drive Type	Power-loss Protection	Form Factor	Interface	Connector	Product Family	Write Endurance	Capacity (GB)	Part Number	
Client PC/ Embedded	No	M.2 22 x 80 mm	SATA 3.0 @ 6 Gbit/s	M.2	PM871a	PC Workload	256	MZNLN256HMHQ-00000	
							512	MZNLN512HMJP-00000	
							1024	MZNLN1T0HMLH-00000	
			PCIe Gen 3 x4 @ 32Gbit/s (NVMe)		PM951		128	MZVLV128HCGR-00000	
							256	MZVLV256HCHP-00000	
							512	MZVLV512HCJH-00000	
Datacenter	Yes	2.5" 7mmT	SATA 3.0 @ 6 Gbit/s	SFF-8223	PM863a	0.8 DWPD for 5 Years	240	MZ7LM240HMHQ-00005	
							480	MZ7LM480HMHQ-00005	
							960	MZ7LM960HMJP-00005	
							1920	MZ7LM1T9HMJP-00005	
							3840	MZ7LM3T8HMLP-00005	
							SM863	3.6 DWPD for 5 Years	120
			240		MZ7KM240HAGR-00005				
			480		MZ7KM480HAHP-00005				
			960		MZ7KM960HAHP-00005				
			1920		MZ7KM1T9HAJM-00005				
			10 DWPD for 5 Years		100	MZ7KM120HAFD-00005			
					200	MZ7KM240HAGR-00005			
		400		MZ7KM480HAHP-00005					
		800		MZ7KM960HAHP-00005					
		1600		MZ7KM1T9HAJM-00005					
		PCIe Gen 3x4 @ 32Gbit/s (NVMe)		U.2 (SFF-8639)	PM963	0.8 DWPD for 5 Years	480	MZQLW480HMHQ-00003	
			960				MZQLW960HMJP-00003		
			1920				MZQLW1T9HMJP-00003		
			3840				MZQLW3T8HMLP-00003		
			SM963				3.6 DWPD for 5 Years	960	MZQKW960HMJP-00003
								1920	MZQKW1T9HMJP-00003
				3840	MZQKW3T8HMLH-00003				
				10 DWPD for 5 Years	800	MZQKW960HMJP-00003			
					1600	MZQKW1T9HMJP-00003			
3200	MZQKW3T8HMLH-00003								
M.2 22 x 110 mm	M.2		PM963		0.8 DWPD for 5 Years	480	MZ1LW480HMHQ-00003		
						960	MZ1LW960HMJP-00003		
		1920				MZ1LW1T9HMJS-00003			
		SM963	3.6 DWPD for 5 Years	960		MZ1KW960HMJP-00003			
				1920		MZ1KW1T9HMJP-00003			
				10 DWPD for 5 Years		800	MZ1KW960HMJP-00003		
1600	MZ1KW1T9HMJP-00003								

Samsung has a portfolio of eMCP products for a variety of devices, such as mobile phones and tablets. The following illustration shows Samsung's lineup of eMCP memory solutions, which can be deployed in almost any application.

→ Samsung eMCP product suite with different densities and types of Mobile DRAM and eMMC

eMCP = eMMC + LPDDR3



eMCP: eMMC + LPDDR3

Memory	eMMC Density	DRAM Density/Organization	Voltage (eMMC-DRAM)	Package
eMMC & MDRAM	4GB	4Gb (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		6Gb (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
	8GB	8Gb (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		6Gb*2 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
	16GB	8Gb (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		6Gb*2 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		8Gb*2 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		6Gb*4 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
	32GB	8Gb*2 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		6Gb*4 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		8Gb*4 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
	64GB	6Gb*4 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
		8Gb*4 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm
	128GB	8Gb*4 (x32)	3.3V/1.8V - 1.8V/1.2V	221FBGA 11.5 x 13mm

ePoP: eMMC + LPDDR3

Memory	eMMC Density	DRAM Density/Organization	Voltage (eMMC-DRAM)	Package
eMMC & MDRAM	4GB	4Gb (x32)	3.3V/1.8V - 1.8V/1.2V	168FBGA 12x12mm
		6Gb (x32)	3.3V/1.8V - 1.8V/1.2V	168FBGA 12x12mm
	4GB	4Gb (x32)	3.3V/1.8V - 1.8V/1.2V	136FBGA 10x10mm
		6Gb (x32)	3.3V/1.8V - 1.8V/1.2V	136FBGA 10x10mm
	8GB	8Gb (x32)	3.3V/1.8V - 1.8V/1.2V	136FBGA 10x10mm

Solid State Drives (SSDs)

	Client PC / Embedded		Datacenter		Enterprise	
	LEGACY PC CLIENT PM871a	HIGH PERFORMANCE PC CLIENT PM951	LEGACY DATACENTER SERIES PM863a	HIGH PERFORMANCE DATACENTER SERIES PM963	ENTERPRISE STORAGE SERIES High Availability Primary Storage PM1633/PM1633a	EXTREME PERFORMANCE SERIES Cache Applications PM1725a
Host Interface	SATA 3.0 @ 6 Gbit/s	PCIe Gen 3 x4 @ 32Gbit/s (NVMe)	SATA 3.0 @ 6 Gbit/s	PCIe Gen 3 x4 @ 32Gbit/s (NVMe)	SAS 3.0 @ 12 Gbit/s	PCIe Gen 3 x8 @ 64Gbit/s (NVMe)
Form Factor	M.2	M.2	2.5"	M.2	2.5"	Add-in Card (HHHL)
Capacity (GB)	256/512/1024	128/256/512	240/480/960/1920/3840	480/960/1920	480/960/1920/3840/7680/15360	1600/3200/6400
Endurance (up to)	Client workload	Client workload	0.8 DDPD for 5 Years	0.8 DDPD for 5 Years	1-3 DDPD for 5 Years	5-10 DDPD for 5 Years
Power Consumption (Active)	100 mW	4.5 W	4.1 W	7 W	12 W	25 W
Power Consumption (Idle)	2 mW (DevSlp)	2.5 mW (L1.2)	1.3 W	1.9 W	4 W	7 W
Random Reads (up to)	97,000 IOPS	270,000 IOPS	99,000 IOPS	240,000 IOPS	200,000 IOPS	1,000,000 IOPS
Random Writes (up to)	88,000 IOPS	150,000 IOPS	18,000 IOPS	19,000 IOPS	37,000 IOPS	140,000 IOPS
Sequential Reads (up to)	530 MB/s	1,820 MB/s	540 MB/s	1,000 MB/s	1,400 MB/s	6,000 MB/s
Sequential Writes (up to)	515 MB/s	600 MB/s	480 MB/s	870 MB/s	930 MB/s	1,900 MB/s
MTBF	1.5 Million Hours	1.5 Million Hours	2.0 Million Hours	2.0 Million Hours	2.0 Million Hours	2.0 Million Hours
Uncorrectable Bit Error Rate (UBER)	1 in 10 ¹⁵	1 in 10 ¹⁵	1 in 10 ¹⁷	1 in 10 ¹⁷	1 in 10 ¹⁷	1 in 10 ¹⁷
Physical Dimensions	22 x 80 x 2.38 mm	22 x 80 x 3.7 mm	100 x 70 x 7mm	22 x 110 x 5.48 mm	100 x 70 x 15 mm	168 x 70 x 19 mm (HHHL)
Weight	9.0 g	8.0 g	60 g	15 g	140 g	320 g

→ Which SSD is right for you?

For more information, email: SSD@ssi.samsung.com

SOLID STATE DRIVES (SSD)

Drive Type	Power-loss Protection	Form Factor	Interface	Connector	Product Family	Write Endurance	Capacity (GB)	Part Number	
Client PC/ Embedded	No	M.2 22 x 80 mm	SATA 3.0 @ 6 Gbit/s	M.2	PM871a	PC Workload	256	MZNLN256HMHQ-00000	
							512	MZNLN512HMJP-00000	
							1024	MZNLN1T0HMLH-00000	
			PCIe Gen 3 x4 @ 32Gbit/s (NVMe)		PM951		128	MZVLV128HCGR-00000	
							256	MZVLV256HCHP-00000	
							512	MZVLV512HCJH-00000	
Datacenter	Yes	2.5" 7mmT	SATA 3.0 @ 6 Gbit/s	SFF-8223	PM863a	0.8 DWPD for 5 Years	240	MZ7LM240HMHQ-00005	
							480	MZ7LM480HMHQ-00005	
							960	MZ7LM960HMJP-00005	
							1920	MZ7LM1T9HMJP-00005	
							3840	MZ7LM3T8HMLP-00005	
							SM863	3.6 DWPD for 5 Years	120
			240		MZ7KM240HAGR-00005				
			480		MZ7KM480HAHP-00005				
			960		MZ7KM960HAHP-00005				
			1920		MZ7KM1T9HAJM-00005				
			SM863		10 DWPD for 5 Years	100			MZ7KM120HAFD-00005
						200	MZ7KM240HAGR-00005		
		400		MZ7KM480HAHP-00005					
		800		MZ7KM960HAHP-00005					
		1600		MZ7KM1T9HAJM-00005					
		PCIe Gen 3x4 @ 32Gbit/s (NVMe)		U.2 (SFF-8639)		PM963	0.8 DWPD for 5 Years	480	MZQLW480HMHQ-00003
			960		MZQLW960HMJP-00003				
			1920		MZQLW1T9HMJP-00003				
			3840		MZQLW3T8HMLP-00003				
			SM963		3.6 DWPD for 5 Years			960	MZQKW960HMJP-00003
								1920	MZQKW1T9HMJP-00003
				3840		MZQKW3T8HMLH-00003			
				SM963		10 DWPD for 5 Years	800	MZQKW960HMJP-00003	
							1600	MZQKW1T9HMJP-00003	
3200	MZQKW3T8HMLH-00003								
M.2	PM963		0.8 DWPD for 5 Years		480		MZ1LW480HMHQ-00003		
					960		MZ1LW960HMJP-00003		
		1920			MZ1LW1T9HMJS-00003				
		SM963		3.6 DWPD for 5 Years	960	MZ1KW960HMJP-00003			
					1920	MZ1KW1T9HMJP-00003			
					SM963	10 DWPD for 5 Years	800	MZ1KW960HMJP-00003	
1600	MZ1KW1T9HMJP-00003								
M.2 22 x 110 mm	M.2		PM963				0.8 DWPD for 5 Years	480	MZ1LW480HMHQ-00003
								960	MZ1LW960HMJP-00003
		1920		MZ1LW1T9HMJS-00003					
		SM963		3.6 DWPD for 5 Years				960	MZ1KW960HMJP-00003
					1920	MZ1KW1T9HMJP-00003			
					SM963	10 DWPD for 5 Years		800	MZ1KW960HMJP-00003
1600	MZ1KW1T9HMJP-00003								

SOLID STATE DRIVES (SSD) *continued*

Drive Type	Power-loss Protection	Form Factor	Interface	Connector	Product Family	Write Endurance	Capacity (GB)	Part Number	
Enterprise	Yes	2.5" 15mmT	SAS 3.0 @ 12 Gbit/s	SFF-8680	PM1633	1 DWPD for 5 Years	480	MZILS480HCGR-00003	
							960	MZILS960HCHP-00003	
							1920	MZILS1T9HCHP-00003	
							3840	MZILS3T8HCJM-00003	
						400	MZILS480HCGR-00003		
					800	MZILS960HCHP-00003			
					1600	MZILS1T9HCHP-00003			
					3200	MZILS3T8HCJM-00003			
					PM1633a	1 DWPD for 5 Years	7680	MZILS7T6HMLS-00003	
						15360	MZILS15THMLS-00003		
		PM1725a	5 DWPD for 5 Years	PCle Gen 3x4 @ 32Gbit/s (NVMe)	U.2 (SFF-8639)	Edge Connector	3 DWPD for 5 Years	6400	MZILS7T6HMLS-00003
								12800	MZILS15THMLS-00003
								800	MZWLL800HEHP-00003
								1600	MZWLL1T6HEHP-00003
Add-in Card (HHHL)	PCle Gen 3 x8 @ 64Gbit/s (NVMe)	Edge Connector	Edge Connector	5 DWPD for 5 Years	3 DWPD for 5 Years	3200	MZWLL3T2HMJP-00003		
						6400	MZWLL6T4HMLS-00003		
						1600	MZPLL1T6HEHP-00003		
						3200	MZPLL3T2HMJP-00003		
							6400	MZPLL6T4HMLT-00003	

Public Information Display (PID) Product Classification

Super Narrow Bezel (SNB)/ Ultra Narrow Bezel (UNB)	» Video Wall	» SNB: 5.9mm A-to-A	» UNB: 3.9mm A-to-A
Indoor PID	» Narrow Bezel	» 40"/46"/55"/75"	» 700 nits Brightness
E-Board PID	» Landscape Orientation	» 55"/70"/82" Edge LED	» AGAR Surface Treatment
Outdoor PID	» High Brightness	» Full High Definition	» 110°C Clearing Point

Why PID instead of TV?

	COMMERCIAL (PID)	CONSUMER (TV)
WARRANTY	18 months to 2 years	90 days to 1 year
RELIABILITY	Public environments 20+ hours daily duty cycle Variety of temperatures & location	5-8 hour daily duty cycle Designed for in-home use in controlled environment In-home living room
PRODUCTION LIFECYCLE	24-36 months	12-15 months
PICTURE QUALITY	Designed to resist image retention LCD backlight covers a wider color spectrum necessary for PC source integration, giving better picture quality AGAR coating for public viewing	120Hz / 240Hz for full-motion video Designed for TV signals Gloss surface treatment
LOCATION	Most models portrait capable	Can only be oriented in landscape mode

Product Segmentation

HEAVY USE SNB / UNB Indoor PID E-Board PID Outdoor PID LIGHT USE	Professional <ul style="list-style-type: none"> Control Room Simulation 	Indoor Events <ul style="list-style-type: none"> Scoreboard Sports Broadcasting 	Billboard <ul style="list-style-type: none"> Dynamic Signage
	Entertainment <ul style="list-style-type: none"> Casino Theatre Menu 	Transportation <ul style="list-style-type: none"> Airport Train/Bus Station 	Communication <ul style="list-style-type: none"> Conference Room
	Commercial <ul style="list-style-type: none"> Kiosk Conference Systems 	Education <ul style="list-style-type: none"> Interactive FPD 	Hospitality <ul style="list-style-type: none"> Hotel Signage
	Commercial <ul style="list-style-type: none"> Kiosk Conference Systems 	Education <ul style="list-style-type: none"> Interactive FPD 	Hospitality <ul style="list-style-type: none"> Hotel Signage

Product Segmentation

Type	Class	Warranty	Bezel	Suggested Run Time	Brightness	Usage	Applications	Value Tier
ENB / UNB / SNB	Ultra / Super Narrow Bezel	2 years	1.9mm - 5.9mm A-to-A	20+ hours	500-700 nits	Heavy	Video Walls	Premium commercial range
Indoor PID	Indoor Commercial Panels	2 years	Narrow	20+ hours	600/700 nits	Medium	Semi-Outdoor	Mid-price range
E-Board	Value, Large Format	18 months	Normal	12 hours	450 nits	Daily	Indoor, e-Board	High-value commercial range
Outdoor PID	High Bright, Wide Temp	2 years	Normal	20+ hours	2500-5000 nits	Heavy	Outdoor	Premium commercial range
Specialty	Value, Large Format	2 years	Narrow	20+ hours	500/ 1500 nits	Medium	specialty	

SAMSUNG DIGITAL INFORMATION DISPLAY (DID) PANEL LINEUP

Category	Model	Size	Model Resolution	Bezel	Backlight	Brightness (typical)	Contrast Ratio	Response Time	Frequency	MP*	Comment
SNB / UNB / ENB	LTI460HN01 (EOL '15.4Q)	46"	FHD	Super narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	5.9mm Active to Active, LED
	LTI460HN09	46"	FHD	Super narrow	D-LED	500 nits	3,000:1	8ms	60Hz	Now	5.9mm Active to Active, LED
	LTI460HN11	46"	FHD	Ultra narrow	D-LED	500 nits	3,000:1	8ms	60Hz	Now	3.9mm Active to Active, LED
	LTI460HN12	46"	FHD	Ultra narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	3.9mm Active to Active, LED
	LTI550HN01 (EOL '15.4Q)	55"	FHD	Super narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	5.9mm Active to Active, LED
	LTI550HN08 (EOL '16.2Q)	55"	FHD	Super narrow	D-LED	500 nits	3,000:1	8ms	60Hz	Now	5.7mm Active to Active, LED
	LTI550HN11-V	55"	FHD	Ultra narrow	D-LED	500 nits	3,000:1	8ms	60Hz	Now	3.9mm Active to Active, LED
	LTI550HN12-V	55"	FHD	Ultra narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	3.9mm Active to Active, LED
	LTI550HN13-V (Broadcast)	55"	FHD	Ultra narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	3.9mm Active to Active, LED
	LTI550HN14-V (MP '16.2Q)	55"	FHD	Extreme narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	1.94mm Active to Active, LED
Indoor PID	LTI400HA10	40"	FHD	Narrow	eLED	700 nits	3,000:1	8ms	60Hz	Now	eLED, Landscape / Portrait
	LTI460HN08	46"	FHD	Narrow	eLED	700 nits	4,000:1	8ms	60Hz	Now	eLED, Landscape / Portrait
	LTI480HN01	48"	FHD	Narrow	Slim eLED	700 nits	4,000:1	8ms	60Hz	16. Q4	Slim eLED, Landscape / Portrait
	LTI480HN02	48"	FHD	Narrow	Slim eLED	500 nits	4,000:1	8ms	60Hz	16. Q4	Slim eLED, Landscape / Portrait
	LTI550HN06	55"	FHD	Narrow	eLED	700 nits	4,000:1	8ms	60Hz	Now	eLED, Landscape / Portrait
	LTI550HN07	55"	FHD	Narrow	eLED	450 nits	4,000:1	8ms	60Hz	Now	E-Board; Landscape/Portrait
	LTI550FN01	55"	UHD	Narrow	Slim eLED	500 nits	4,000:1	8ms	60Hz	16. Q3	Slim eLED, Landscape / Portrait
	LTI750HF02-0	75"	FHD	Normal	D-LED	400 nits	3,500:1	8ms	120Hz	Now	Landscape / Portrait
	LTI750FJ01	75"	UHD	Normal	D-LED	500 nits	5,000:1	8ms	120Hz	Now	Landscape / Portrait
	LTI750FN01	75"	UHD	Normal	eLED	600 nits	4,000:1	8ms	60Hz	16. Q2	eLED Landscape / Portrait
LTI980FN01	98"	UHD	Normal	eLED	500 nits	4,000:1	8ms	60Hz	16. Q2	eLED Landscape / Portrait	
E-Board	LTI700HN02	70"	FHD	Normal	eLED	350 nits	4,000:1	8ms	60Hz	16. Q2	E-Board; Landscape mode only
	LTI750FN02	75"	UHD	Normal	eLED	350 nits	4,000:1	8ms	60Hz	16. Q3	E-Board; Landscape mode only
Outdoor	LTI460HZ01	46"	FHD	Narrow	D-LED	5,000 nits	4,000:1	8ms	60Hz	Now	High Bright, Hi Temp LC, 1/4λ Pol.
	LTI460HF01-V	46"	FHD	Narrow	D-LED	2,500 nits	3,000:1	8ms	120Hz	Now	High Bright, Hi Temp LC, 1/4λ Pol.
	LTH550HF04-V	55"	FHD	Narrow	D-LED	2,500 nits	3,000:1	8ms	120Hz	Now	High Bright, Hi Temp LC, 1/4λ Pol.
	LTI750HF01-V	75"	FHD	Narrow	D-LED	3,500 nits	3,000:1	8ms	120Hz	Now	High Bright, Hi Temp LC, 1/4λ Pol.
Specialty	LTI290LN01	29"	Half FHD	Narrow	eLED	500 nits	4,000:1	16ms	60Hz	16. Q2	Stretched, 40"/2, Hi Temp LC
	LTI290LN02	29"	Half FHD	Narrow	eLED	700 nits	4,000:1	16ms	60Hz	16. Q3	Stretched, 40"/2, Hi Temp LC
	LTI370LN01	37"	Half FHD	Narrow	eLED	700 nits	4,000:1	16ms	60Hz	16. Q2	Stretched, 46"/2, Hi Temp LC
	LTI370LN02	37"	Half FHD	Narrow	eLED	1500 nits	4,000:1	16ms	60Hz	16. Q3	Stretched, 46"/2, Hi Temp LC

Contacts

Feel free to contact your local distributor or sales representative with any Samsung sales inquiries.

Adelsa | www.adetronics.com.mx

PRODUCTS	ADDRESS		MAIN PHONE	FAX
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	GUADALAJARA OFFICE		52-333-122-3054	
	MONTERREY OFFICE		52-818-214-0011	
	CD. JUAREZ OFFICE		52-656-613-3517	
	REYNOSA OFFICE		52-899-922-5540	

ATMI Sales | www.atmisales.com

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Memory, LCD	OREGON	4900 S.W. Griffith Drive, Suite 253 Beaverton, OR 97005	1-800-898-2446, 503-643-8307	503-643-4364
	WASHINGTON	8581 154th Avenue NE Redmond WA 98052	425-869-7636	425-869-9841

Bear VAI Technology | www.bearvai.com

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	MAIN OFFICE - INDIANA	11451 Overlook Drive Fishers, IN 46037	440-832-7637	317-845-8650
	MICHIGAN	17426 Willow Ridge Drive Northville, MI 48168	440-526-1991	440-526-5426

Core Sales, Inc. | www.coresales.com

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Crestone Technology Group | www.crestonegroup.com

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	COLORADO	7108 S. Alton Way, Building L, Suite A Centennial, CO 80112	303-280-7202	720-482-2220

Customer 1st | www.customer1st.com

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Memory, SLSI, LCD	MINNESOTA	2950 Metro Drive, Suite 101 Bloomington, MN 55425	952-851-7909	952-851-7907
	KANSAS	2111 E. Crossroad Lane, #202 Olathe, KS 66062		

→ For all product information please visit: www.samsung.com/us/samsungsemiconductor

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	21 Concourse Gate, Suite 12, Ottawa, ONT Canada K2E 7S4	905-629-0082	613-221-9160

I-Squared Incorporated | www.isquared.com

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	1250 B Street, Petaluma, CA 94952	707-773-3108	

Neptune Electronics (necco) | www.neccoelect.com

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New Tech Solutions

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Rep One Associates, Inc. | www.repone.com

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Memory, SLSI, LCD	ALABAMA 303 Williams Avenue, Suite 1011 Huntsville, AL 35801	256-539-7371	256-533-4509
	GEORGIA 3000 Langford Road, Bldg 300 Norcross, GA 30071	770-209-9242 678-591-6753	770-209-9245

Tech Coast Sales | www.tc-sales.com

PRODUCTS	ADDRESS	MAIN PHONE	EMAIL
Memory, SLSI, LCD	23121 Verdugo Drive, Suite 101, Laguna Hills, CA 92653	949-305-6869	sales@tc-sales.com

West Associates | www.westassociates.com

PRODUCTS	ADDRESS	MAIN PHONE	FAX
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	DALLAS / OKLAHOMA / ARKANSAS 2745 Dallas Parkway, Suite 460, Plano, TX 75093	972-680-2800	972-699-0330
	HOUSTON / VALLEY / LOUISIANA 24624 Interstate 45 North, Suite 200, Spring, TX 77386	512-343-1199	512-343-1922

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