SAMSUNG

PRODUCT SELECTION GUIDE

LCD, Memory and Storage | 1H 2012

Samsung Semiconductor, Inc.

Samsung continues to lead the industry with the broadest portfolio of memory products and technology. Its DRAM, flash, SRAM products are found in computers—from ultra-mobile notebooks to powerful servers—and in a wide range of handheld devices such as smartphones and tablets. Samsung also delivers the industry's widest line of storage products from the consumer to the enterprise level. These include optical disk drives as well as flash storage, such as Solid State Drives, and a range of embedded and removable flash storage products.

Markets	DRAM	SSD	FLASH	ASIC	LOGIC	TFT/LCD	ODD
Mobile / Wireless 	●	N/A	●	●	●	●	●
Notebook PCs/ Ultrabooks 	●	●	●	●	●	●	●
Desktop PCs / Workstations 	●	●	●	●	●	●	●
Servers 	●	●	●	●	●	●	●
Networking / Communications 	●	●	●	●	●	N/A	●
Consumer Electronics 	●	N/A	●	●	●	●	●

samsung.com/us/oem-solutions

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- Sales Representatives and Distributors

DDR3 SDRAM REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
1GB	1.5V	128Mx72	M393B2873GB0-C(F8/H9/K0/MA)(08/09)	1Gb (128M x8) * 9	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
2GB	1.5V	256Mx72	M393B5673GB0-C(F8/H9/K0/MA)(08/09)	1Gb (128M x8) * 18	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	2	Now
			M393B5670GB0-C(F8/H9/K0/MA)(08/09)	1Gb (256M x4) * 18	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
			M393B5773CH0-C(F8/H9)(04/05)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333	1	Now
			M393B5773DH0-C(F8/H9/K0/MA)(08/09)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
4GB	1.5V	512Mx72	M393B5170GB0-C(F8/H9/K0/MA)(08/09)	1Gb (256M x4) * 36	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	2	Now
			M393B5273CH0-C(F8/H9)(04/05)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M393B5273DH0-C(F8/H9/K0/MA)(08/09)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
			M393B5270CH0-C(F8/H9)(04/05)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333	1	Now
			M393B5270DH0-C(F8/H9/K0/MA)(08/09)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
8GB	1.5V	1Gx72	M393B1K73CH0-C(F8/H9)(04/05)	2Gb (256M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B1K73DH0-C(F8/H9)(08/09)	2Gb (256M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B1K70CH0-C(F8/H9)(04/05)	2Gb (512M x4) * 36	Lead Free & Halogen Free	1066/1333	2	Now
			M393B1K70DH0-C(F8/H9/K0/MA)(08/09)	2Gb (512M x4) * 36	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
16GB	1.5V	2Gx72	M393B2K70CM0-C(F8/H9)(04/05)	2Gb DDP (1G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B2K70DM0-C(F8/H9)(08/09)	2Gb DDP (1G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
8GB	1.5V	1Gx72	M393B1G70BH0-C(F8/H9/K0/MA)(08/09)	4Gb (1G x4) * 18	Lead Free & Halogen Free	1066/1333	1	Now
			M393B1G73BH0-C(F8/H9/K0/MA)(08/09)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
16GB	1.5V	2Gx72	M393B2G70AH0-C(F8/H9)(04/05)	4Gb (1G x4) * 36	Lead Free & Halogen Free	1066/1333	2	Now
			M393B2G70BH0-C(F8/H9/K0/MA)(08/09)	4Gb (1G x4) * 36	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
			M393B2G73AH0-C(F8/H9)(04/05)	4Gb (512M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B2G73BH0-C(F8/H9)(08/09)	4Gb (512M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
32GB	1.5V	4Gx72	M393B4G70AM0-C(F8/H9)(04/05)	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B4G70BM0-C(F8/H9)(08/09)	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
2GB	1.35V	256Mx72	M393B5773CH0-Y(F8/H9)(04/05)	2Gb (256M x4) * 9	Lead Free & Halogen Free	1066/1333	1	Now
			M393B5773DH0-Y(F8/H9/K0)(08/09)	2Gb (256M x4) * 9	Lead Free & Halogen Free	1066/1333/1600	1	Now
4GB	1.35V	512Mx72	M393B5173GB0-Y(F8/H9)(08/09)	1Gb (128M x8) * 36	Lead Free & Halogen Free, Flip Chip	1066/1333	4	Now
			M393B5170GB0-Y(F8/H9/K0)(08/09)	1Gb (256M x4) * 36	Lead Free & Halogen Free, Flip Chip	1066/1333/1600	2	Now
			M393B5273CH0-Y(F8/H9)(04/05)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M393B5273DH0-Y(F8/H9/K0)(08/09)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M393B5270CH0-Y(F8/H9)(04/05)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333	1	Now
			M393B5270DH0-Y(F8/H9/K0)(08/09)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333/1600	1	Now
8GB	1.35V	1Gx72	M393B1K73CH0-Y(F8/H9)(04/05)	2Gb (256M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B1K73DH0-Y(F8/H9)(08/09)	2Gb (256M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B1K70CH0-Y(F8/H9)(04/05)	2Gb (512M x4) * 36	Lead Free & Halogen Free	1066/1333	2	Now
			M393B1K70DH0-Y(F8/H9/K0)(08/09)	2Gb (512M x4) * 36	Lead Free & Halogen Free	1066/1333/1600	2	Now
16GB	1.35V	2Gx72	M393B2K70CM0-Y(F8/H9)(04/05)	2Gb DDP (1G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B2K70DM0-Y(F8/H9)(08/09)	2Gb DDP (1G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
8GB	1.35V	1Gx72	M393B1G70BH0-Y(F8/H9/K0)(08/09)	4Gb (1G x4) * 18	Lead Free & Halogen Free	1066/1333/1600	1	Now
			M393B1G73BH0-Y(F8/H9/K0)(08/09)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
16GB	1.35V	2Gx72	M393B2G70AH0-Y(F8/H9)(04/05)	4Gb (1G x4) * 36	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M393B2G70BH0-Y(F8/H9/K0)(08/09)	4Gb (1G x4) * 36	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M393B2G73AH0-Y(F8/H9)(04/05)	4Gb (512M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B2G73BH0-Y(F8/H9)(08/09)	4Gb (512M x8) * 36	Lead Free & Halogen Free	1066/1333	4	Now
32GB	1.35V	4Gx72	M393B4G70AM0-Y(F8/H9)(04/05)	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now
			M393B4G70BM0-Y(F8/H9)(08/09)	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free	1066/1333	4	Now

NOTES: 04 = IDT B0 register F8 = DDR3-1066 (7-7-7) 05 = Inphi C0 register H9 = DDR3-1333 (9-9-9) 08 = IDT A1 K0 = DDR3-1600 (11-11-11)
09 = Inphi UV GS02 MA = DDR3-1866 (13-13-13)
* K0 (1600Mbps) available in ES only

DDR3 SDRAM LOAD REDUCED REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
16GB	1.35V	2Gx72	M386B2K70DM0-YH90	2Gb DDP (1G x4) * 36	Lead Free & Halogen Free	1333	4	Now
32GB	1.35V	4Gx72	M386B4G70BM0-YH90	4Gb DDP (2G x4) * 36	Lead Free & Halogen Free	1333	4	Now

NOTES: 0 = Inphi iMB GS02A

DDR3 SDRAM VLP REGISTERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
1GB	1.5V	128Mx72	M392B2873GB0-C(F8/H9/K0/MA)(08/09)	1Gb (128M x8) * 9	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
2GB	1.5V	256Mx72	M392B5673GB0-C(F8/H9/K0/MA)(08/09)	1Gb (128M x8) * 18	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	2	Now
			M392B5670GB0-C(F8/H9/K0/MA)(08/09)	1Gb (256M x8) * 18	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
			M392B5773CH0-C(F8/H9)(04/05)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333	1	Now
			M392B5773DH0-C(F8/H9/K0/MA)(08/09)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
4GB	1.5V	512Mx72	M392B5273CH0-C(F8/H9)(04/05)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M392B5273DH0-C(F8/H9/K0/MA)(08/09)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
			M392B5270CH0-C(F8/H9)(04/05)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333	1	Now
			M392B5270DH0-C(F8/H9/K0/MA)(08/09)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
8GB	1.5V	1Gx72	M392B1K73CM0-C(F8/H9)(04/05)	2Gb DDP (512M x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
			M392B1K73DM0-C(F8/H9)(08/09)	2Gb DDP (512M x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
			M392B1K70CM0-C(F8/H9)(04/05)	2Gb DDP (1G x4) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M392B1K70DM0-C(F8/H9/K0/MA)(08/09)	2Gb DDP (1G x4) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
			M392B1G73BH0-C(F8/H9/K0/MA)(08/09)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
			M392B1G70BH0-C(F8/H9/K0/MA)(08/09)	4Gb (1G x4) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
16GB	1.5V	2Gx72	M392B2G70AM0-C(F8/H9)(04/05)	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M392B2G70BM0-C(F8/H9/K0/MA)(08/09)	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
			M392B2G73AM0-C(F8/H9)(04/05)	4Gb DDP (1G x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
			M392B2G73BM0-C(F8/H9)(08/09)	4Gb DDP (1G x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
2GB	1.35V	256Mx72	M392B5773CH0-Y(F8/H9)(04/05)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333	1	Now
			M392B5773DH0-Y(F8/H9/K0)(08/09)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333/1600	1	Now
4GB	1.35V	512Mx72	M392B5273CH0-Y(F8/H9)(04/05)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M392B5273DH0-Y(F8/H9/K0)(08/09)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M392B5270CH0-Y(F8/H9)(04/05)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333	1	Now
			M392B5270DH0-Y(F8/H9/K0)(08/09)	2Gb (512M x4) * 18	Lead Free & Halogen Free	1066/1333/1600	1	Now
8GB	1.35V	1Gx72	M392B1K73CM0-Y(F8/H9)(04/05)	2Gb DDP (512M x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
			M392B1K73DM0-Y(F8/H9)(08/09)	2Gb DDP (512M x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
			M392B1K70CM0-Y(F8/H9)(04/05)	2Gb DDP (1G x4) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M392B1K70DM0-Y(F8/H9/K0)(08/09)	2Gb DDP (1G x4) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M392B1G73BH0-Y(F8/H9/K0)(08/09)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M392B1G70BH0-Y(F8/H9/K0)(08/09)	4Gb (1G x4) * 18	Lead Free & Halogen Free	1066/1333/1600	1	Now
16GB	1.35V	2Gx72	M392B2G70AM0-Y(F8/H9)(04/05)	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M392B2G70BM0-Y(F8/H9/K0)(08/09)	4Gb DDP (2G x4) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M392B2G70AM0-Y(F8/H9)(04/05)	4Gb DDP (1G x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
			M392B2G70BM0-Y(F8/H9)(08/09)	4Gb DDP (1G x8) * 18	Lead Free & Halogen Free	1066/1333	4	Now
32GB	1.35V	4Gx72	M392B4G70BE0-Y(F8/H9)(08)	4Gb QDP (4G x4) * 18	Lead Free & Halogen Free	1066/1333	4	Now

NOTES:
04 = IDT B0 register
05 = Inphi C0 register
08 = IDT A1
09 = Inphi UV GS02
F8 = DDR3-1066 (7-7-7)
H9 = DDR3-1333 (9-9-9)
K0 = DDR3-1600 (11-11-11)
MA = DDR3-1866 (13-13-13)

DDR3 SDRAM UNBUFFERED MODULES

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
1GB	1.5V	128Mx64	M378B2873GB0-C(F8/H9/K0/MA)	1Gb (128M x8) * 8	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
2GB	1.5V	256Mx64	M378B5673GB0-C(F8/H9/K0/MA)	1Gb (128M x8) * 16	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	2	Now
			M378B5773CH0-C(F8/H9)	2Gb (256M x8) * 8	Lead Free & Halogen Free	1066/1333	1	Now
			M378B5773DH0-C(F8/H9/K0/MA)	2Gb (256M x8) * 8	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
4GB	1.5V	512Mx64	M378B5273CH0-C(F8/H9)	2Gb (256M x8) * 16	Lead Free & Halogen Free	1066/1333	2	Now
			M378B5273DH0-C(F8/H9/K0/MA)	2Gb (256M x8) * 16	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
8GB	1.5V	1024Mx64	M378B1G73AH0-C(F8/H9)	4Gb (512M x8) * 16	Lead Free & Halogen Free	1066/1333	2	Now
			M378B1G73BH0-C(F8/H9/K0/MA)	4Gb (512M x8) * 16	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now

DDR3 SDRAM UNBUFFERED MODULES (ECC)

Density	Voltage	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Ranks	Production
1GB	1.5V	128Mx72	M391B2873GB0-C(F8/H9/K0/MA)	1Gb (128M x8) * 9	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
2GB	1.5V	256Mx72	M391B5673GB0-C(F8/H9/K0/MA)	1Gb (128M x8) * 18	Lead Free & Halogen Free,Flip Chip	1066/1333/1600/1866	2	Now
			M391B5773CH0-C(F8/H9)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333	1	Now
			M391B5773DH0-C(F8/H9/K0/MA)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
4GB	1.5V	512Mx72	M391B5273CH0-C(F8/H9)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M391B5273DH0-C(F8/H9/K0/MA)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
8GB	1.5V	1024Mx72	M391B1G73AH0-C(F8/H9)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M391B1G73BH0-C(F8/H9/K0/MA)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
1GB	1.35V	128Mx72	M391B2873GB0-Y(F8/H9/K0)	1Gb (128M x8) * 9	Lead Free & Halogen Free, Flip Chip	1066/1333/1600	1	Now
2GB	1.35V	256Mx72	M391B5673GB0-Y(F8/H9/K0)	1Gb (128M x8) * 18	Lead Free & Halogen Free,Flip Chip	1066/1333/1600	2	Now
			M391B5773CH0-Y(F8/H9)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333	1	Now
			M391B5773DH0-Y(F8/H9/K0)	2Gb (256M x8) * 9	Lead Free & Halogen Free	1066/1333/1600	1	Now
4GB	1.35V	512Mx72	M391B5273CH0-Y(F8/H9)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M391B5273DH0-Y(F8/H9/K0)	2Gb (256M x8) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now
8GB	1.35V	1024Mx72	M391B1G73AH0-Y(F8/H9)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333	2	Now
			M391B1G73BH0-Y(F8/H9/K0)	4Gb (512M x8) * 18	Lead Free & Halogen Free	1066/1333/1600	2	Now

NOTES: F8 = DDR3-1066 (7-7-7) H9 = DDR3-1333 (9-9-9) K0 = 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
1GB	1.5V	128Mx64	M471B2873GB0-C(F8/H9/K0/MA)	1Gb (128M x8) * 8	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
2GB	1.5V	256Mx64	M471B5673GB0-C(F8/H9/K0/MA)	1Gb (128M x8) * 16	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	2	Now
			M471B5773CHS-C(F8/H9)	2Gb (256M x8) * 8	Lead Free & Halogen Free	1066/1333	1	Now
			M471B5773DH0-C(F8/H9/K0/MA)	2Gb (256M x8) * 8	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
4GB	1.5V	512Mx64	M471B5273CH0-C(F8/H9)	2Gb (256M x8) * 16	Lead Free & Halogen Free	1066/1333	2	Now
			M471B5273DH0-C(F8/H9/K0/MA)	2Gb (256M x8) * 16	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
			M471B5173BH0-C(F8/H9/K0/MA)	4Gb (512M x8) * 8	Lead Free & Halogen Free	1066/1333/1600/1866	1	Now
8GB	1.5V	1024Mx64	M471B1G73AH0-C(F8/H9/K0)	4Gb (512M x8) * 16	Lead Free & Halogen Free	1066/1333	2	Now
			M471B1G73BH0-C(F8/H9/K0/MA)	4Gb (512M x8) * 16	Lead Free & Halogen Free	1066/1333/1600/1866	2	Now
1GB	1.35V	128Mx64	M471B2873GB0-Y(F8/H9/K0)	1Gb (128M x8) * 8	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	1	Now
2GB	1.35V	256Mx64	M471B5673GB0-Y(F8/H9/K0)	1Gb (128M x8) * 16	Lead Free & Halogen Free, Flip Chip	1066/1333/1600	2	Now
			M471B5773CHS-Y(F8/H9)	2Gb (256M x8) * 8	Lead Free & Halogen Free	1066/1333	1	Now
			M471B5773DH0-Y(F8/H9/K0)	2Gb (256M x8) * 8	Lead Free & Halogen Free	1066/1333/1600	1	Now
4GB	1.35V	512Mx64	M471B5273CH0-Y(F8/H9)	2Gb (256M x8) * 16	Lead Free & Halogen Free	1066/1333	2	Now
			M471B5273DH0-Y(F8/H9/K0)	2Gb (256M x8) * 16	Lead Free & Halogen Free	1066/1333/1600	2	Now
			M471B5173BH0-Y(F8/H9/K0)	4Gb (512M x8) * 8	Lead Free & Halogen Free	1066/1333/1600	1	Now
8GB	1.35V	1024Mx64	M471B1G73AH0-Y(F8/H9)	4Gb (512M x8) * 16	Lead Free & Halogen Free	1066/1333	2	Now
			M471B1G73BH0-Y(F8/H9/K0)	4Gb (512M x8) * 16	Lead Free & Halogen Free	1066/1333/1600	2	Now

NOTES: F8 = DDR3-1066 (7-7-7) H9 = DDR3-1333 (9-9-9) K0 = DDR3-1600 (11-11-11) MA = DDR3-1866 (13-13-13)

DDR3 SDRAM COMPONENTS

Density	Voltage	Organization	Part Number	# Pins-Package	Compliance	Speed (Mbps)	Dimensions	Production
1Gb	1.5V	256M x4	K4B1G0446F-HC(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B1G0446G-BC(F8/H9/K0/MA)	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	7.5x11mm	Now
1Gb	1.5V	128M x8	K4B1G0846G-BC(F8/H9/K0/MA)	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866	7.5x11mm	Now
1Gb	1.5V	128M x16	K4B1G1646G-BC(F8/H9/K0/MA/NB)	96 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1066/1333/1600/1866/2133	7.5x13.3mm	Now
2Gb	1.5V	512M x4	K4B2G0446C-HC(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B2G0446D-HC(F8/H9/K0/MA)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600/1866	7.5x11mm	Now
2Gb	1.5V	256M x8	K4B2G0846C-HC(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B2G0846D-HC(F8/H9/K0/MA)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600/1866	7.5x11mm	Now
2Gb	1.5V	128M x16	K4B2G1646C-HC(F8/H9/K0/MA)	96 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600/1866	7.5x13.3mm	Now
4Gb	1.5V	1G x4	K4B4G0446A-HC(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	10x12.5mm	Now
			K4B4G0446B-HC(F8/H9/K0/MA)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600/1866	10x11mm	Now
4Gb	1.5V	512M x8	K4B4G0846A-HC(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	10x12.5mm	Now
			K4B4G0846B-HC(F8/H9/K0/MA)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600/1866	10x11mm	Now
1Gb	1.35V	256M x4	K4B1G0446F-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B1G0446G-BY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1066/1333/1600	7.5x11mm	Now
1Gb	1.35V	128M x8	K4B1G0846F-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B1G0846G-BY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free, Flip Chip	1066/1333/1600	7.5x11mm	Now
2Gb	1.35V	512M x4	K4B2G0446C-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B2G0446D-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
2Gb	1.35V	256M x8	K4B2G0846C-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
			K4B2G0846D-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	7.5x11mm	Now
4Gb	1.35V	1G x4	K4B4G0446A-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	10x12.5mm	Now
			K4B4G0446B-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	10x11mm	Now
4Gb	1.35V	512M x8	K4B4G0846A-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	10x12.5mm	Now
			K4B4G0846B-HY(F8/H9/K0)	78 Ball -FBGA	Lead Free & Halogen Free	1066/1333/1600	10x11mm	Now

NOTES: F8 = DDR3-1066 (7-7-7) H9 = DDR3-1333 (9-9-9) K0 = DDR3-1600 (11-11-11) MA = DDR3-1866 (13-13-13)
NB = DDR3-2133 (14-14-14)
* MA, and NB are available in ES only

DDR2 SDRAM REGISTERED MODULES

Density	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Register	Rank	Production
1GB	128Mx72	M393T2863FBA-C(E6/F7)	(128M x8)*9	Lead free	667/800	Y	1	Now
2GB	256Mx72	M393T5660FBA-C(E6/F7)	(256M x4)*18	Lead free	667/800	Y	1	Now
		M393T5663FBA-C(E6/E7)	(128M x8)*18	Lead free	667/800	Y	2	Now
4GB	512Mx72	M393T5160FBA-C(E6/F7)	(256M x4)*36	Lead free	667/800	Y	2	Now

NOTES: E6 = PC2-5300 (DDR2-667 @ CL=5) F7 = PC2-6400 (DDR2-800 @ CL=6) E7 = PC2-6400 (DDR2-800 @ CL=5) Voltage = 1.8V

DDR2 SDRAM VLP REGISTERED MODULES

Density	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Register	Rank	Production
2GB	256Mx72	M392T5660FBA-CE6	(256M x4)*18	Lead free	667	Y	1	Now

DDR2 SDRAM FULLY BUFFERED MODULES

Density	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Voltage	Rank	Production
2GB	256Mx72	M395T5663FB4-CE68	(128M x8)*18	Lead free	667	1.8V	2	Now
4GB	512Mx72	M395T5160FB4-CE68	(256M x4)*36	Lead free	667	1.8V	2	Now
		M395T5163FB4-CE68	(128M x8)*36	Lead free	667	1.8V	4	Now

NOTES: E6 = PC2-5300 (DDR2-667 @ CL=5) Voltage = 1.8V (AMB Voltage = 1.5V) AMB = IDT L4

DDR2 SDRAM UNBUFFERED MODULES

Density	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Rank	Production
1GB	128Mx64	M378T2863FBS-C(E6/F7/E7)	(128M x8)*8	Lead free	667/800	1	Now
2GB	256Mx64	M378T5663FB3-C(E6/F7/E7)	(128M x8)*16	Lead free	667/800	2	Now

NOTES: E6 = PC2-5300 (DDR2-667 @ CL=5) E7 = PC2-6400 (DDR2-800 @ CL=5) F7 = PC2-6400 (DDR2-800 @ CL=6) Voltage = 1.8V

DDR2 SDRAM UNBUFFERED MODULES (ECC)

Density	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Rank	Production
1GB	128Mx72	M391T2863FB3-C(E6/F7)	(128Mx8)*9	Lead free	667/800	1	Now
2GB	256Mx64	M391T5663FB3-C(E6/F7)	(128Mx8)*18	Lead free	667/800	2	Now

NOTES: E6 = PC2-5300 (DDR2-667 @ CL=5) E7 = PC2-6400 (DDR2-800 @ CL=5)
F7 = PC2-6400 (DDR2-800 @ CL=6) Voltage = 1.8V

DDR2 SDRAM SODIMM MODULES

Density	Organization	Part Number	Composition	Compliance	Speed (Mbps)	Rank	Production
1GB	128Mx64	M470T2863FB3-C(E6/F7/E7)	(64Mx16)*8	Lead free	667/800	2	Now
2GB	256Mx64	M470T5663FB3-C(E6/F7/E7)	(128M x8)*8	Lead free	667/800	2	Now

NOTES: E6 = PC2-5300 (DDR2-667 @ CL=5) E7 = PC2-6400 (DDR2-800 @ CL=5)
F7 = PC2-6400 (DDR2-800 @ CL=6)) Voltage = 1.8V

DDR2 SDRAM COMPONENTS

Density	Organization	Part Number	# Pins-Package	Dimensions	Package	Speed (Mbps)	Production
256Mb	16Mx16	K4T56163QN-HC(E6/F7/E7/F8)	84-FBGA	7.5x12.5mm	Lead free & Halogen free	667/800/1066	Now
512Mb	128M x4	K4T51043QJ-HC(E6/F7/E7)	60-FBGA	7.5x9.5mm	Lead free & Halogen free	667/800	Now
	64M x8	K4T51083QJ-HC(E6/F7/E7/F8)	60-FBGA	7.5x9.5mm	Lead free & Halogen free	667/800/1066	Now
	32M x16	K4T51163QJ-HC(E6/F7/E7/F8)	84-FBGA	7.5x12.5mm	Lead free & Halogen free	667/800/1066	Now
1Gb	256M x4	K4T1G044QF-BC(E6/F7/E7)	60-FBGA	7.5x9.5mm	Lead free & Halogen free	667/800	Now
	128M x8	K4T1G084QF-BC(E6/F7/E7/F8)	60-FBGA	7.5x9.5mm	Lead free & Halogen free	667/800/1066	Now
	64M x16	K4T1G164QF-BC(E6/F7/E7/F8)	84-FBGA	7.5x12.5mm	Lead free & Halogen free	667/800/1066	Now

DDR SDRAM COMPONENTS

Density	Organization	Part Number	# Pins - Package	Speed (Mbps)
512Mb	128Mx4	K4H510438J-LCB3/B0	66-TSOP	266/333
		K4H510438J-BCCC/B3	60-FBGA	333/400
	64Mx8	K4H510838J-LCCC/B3	66-TSOP	333/400
		K4H510838J-BCCC/B3	60-FBGA	333/400
	32Mx16	K4H511638J-LCCC/B3	66-TSOP	333/400
256Mb	64Mx4	K4H560438N-LCB3/B0	66-TSOP	266/333
	32Mx8	K4H560838N-LCCC/B3	66-TSOP	333/400
	16Mx16	K4H561638N-LCCC/B3	66-TSOP	333/400
128Mb	8Mx16	K4H2816380-LCCC	66-TSOP	400

NOTES: B0 = DDR266 (133MHz @ CL=2.5) A2 = DDR266 (133MHz @ CI=2) B3 = DDR333 (166MHz @ CL=2.5) CC = DDR400 (200MHz @ CL=3)

SDRAM COMPONENTS

Density	Organization	Part Number	# Pins - Package	Speed (Mbps)	Refresh	Remarks
256Mb	64Mx4	K4S560432N-LC(L)75	54-TSOP	133	8K	EOL end of 2011
	32Mx8	K4S560832N-LC(L)75	54-TSOP	133	8K	EOL end of 2011
	16Mx16	K4S561632N-LC(L)(75/60)	54-TSOP	133/166	8K	EOL end of 2011
128Mb	16Mx8	K4S2808320-LC(L)75	54-TSOP	133	4K	EOL end of 2011
	8Mx16	K4S2816320-LC(L)(75/60)	54-TSOP	133/166	4K	EOL end of 2011

NOTES: L = Commercial Temp., Low Power Voltage: 3.3V Speed: PC133 (133MHz CL=3/PC100 CL2) Banks: 4
For Industrial Temperature, check with SSI Marketing All products are Lead Free

MOBILE DRAM COMPONENTS

Type	Density	Organization	Part Number	Package	Power	Production
MDDR	512Mb	32Mx16	K4X51163PK-FG(1)	60-FBGA	1.8V	Now
		16Mx32	K4X51323PK-8G(1)	90-FBGA	1.8V	Now
	1Gb	32Mx32	K4X1G323PF-8G(1)	90-FBGA	1.8V	Now
	2Gb	64Mx32	K4X2G323PC-8G(1)	90-FBGA	1.8V	Now
		64Mx32	K4X2G323PD-8G(1)	90-FBGA	1.8V	ES Q1'12, CS in Q2'12
	4Gb	x32 (2CS, 2CKE)	K4X4G303PC-AG(1)	168-FBGA, 12x12 PoP, DDP	1.8V	Now
		x32 (2CS, 2CKE)	K4X4G303PC-7G(1)	240-FBGA, 14x14 PoP, DDP	1.8V	Now
LPDDR2	2Gb	1CH x32	K4P2G324EC-AG(1)	168-FBGA, 12x12 PoP, MONO,	1.2V	EOL by end of 2012. (LBO '12 June, LTS Dec)
		1CH x32	K4P2G324ED-AG(1)	168-FBGA, 12x12 PoP, MONO,	1.2V	Now
	4Gb	1CH x32	K4P4G304EC-AG(1)	168-FBGA, 12x12 PoP, DDP, 64Mx32*2	1.2V	EOL by end of 2012. (LBO '12 June, LTS Dec)
		1CH x32	K4P4G304EC-FG(1)	134-FBGA, 11x11.5 PoP, DDP, 128x16*2	1.2V	Now
		1CH x32	K4P4G324EB-AG(1,2)	168-FBGA, 12x12 PoP, MONO, 128Mx32	1.2V	Now
		2CH x32/ch	K3PE4E400M-XG(1)	216-FBGA, 12x12 PoP, DDP, 64Mx32*2	1.2V	EOL by end of 2012. (LBO '12 June, LTS Dec)
		2CH x32/ch	K3PE4E400A-XG(1)	240-FBGA, 14x14 PoP, DDP, 64Mx32*2	1.2V	EOL by end of 2012. (LBO '12 June, LTS Dec)
		2CH x32/ch	K3PE4E400P-XG(2)	216FBGA,12x12 PoP, DDP, 64Mx32*2	1.2V	Now
		2CH x32/ch	K3PE4E400D-XGC(2)	220FBGA, 14x14 PoP, DDP, 64Mx32*2	1.2V	CS
		2CH x32/ch	K3PE4E400K-XG(2)	240-FBGA, 14x14 PoP, DDP, 64Mx32*2	1.2V	Now
	6Gb	2CH x32/ch	K3PE8E400C-XG(2)	240FBGA, 14x14 PoP, TDP	1.2V	Now
		2CH x32/ch	K3PE4E700A-XG(2)	220FBGA, 14x14 PoP, DDP	1.2V	Now
	8Gb	1CH x32	K4P8G304EB-FG(1,2)	134-FBGA, 11x11.5 PoP, DDP, 128x16*4	1.2V	Now
		1CH x32	K4P8G304EB-AG(1)	168-FBGA, 12x12 PoP, DDP, 128x16*4	1.2V	Now
		1CH x32	K4P8G304EB-GG(2)	216FBGA, 12x12 PoP, DDP, 128x16*4	1.2V	ES
		2CH x32/ch	K3PE7E700M-XG(2)	216-FBGA, 12x12 PoP, DDP, 128Mx32*2	1.2V	Now
		2CH x32/ch	K3PE7E700D-XG(2)	220-FBGA, 14x14 PoP, DDP, 128Mx32*2	1.2V	Now
	16Gb	1CH x32	K4PAG304EB-FG(2)	134-FBGA, 11x11.5 PoP, QDP	1.2V	Now
		2CH x32/ch	K3PE0E000M-XG(2)	216-FBGA, 12x12 PoP, QDP, 128Mx32*4	1.2V	Now
		2CH x32/ch	K3PE0E000A-XG(2)	220-FBGA, 14x14 PoP, QDP, 128Mx32*4	1.2V	Now
		2CH x32/ch	K3PE0E000B-XG(2)	240-FBGA, 14x14 PoP, QDP, 128Mx32*4	1.2V	Now

NOTES: (1,2) Speed: Mobile DDR (1) 60: 166MHz, CL3 (1) 75: 133MHz, CL3 (1) D8: 200MHz, CL3 LPDDR2
(2) C1: 800Mbps All products offered at Extended, Low, i-TCSR & PASR & DS (Temp, Power) (2) C2: 1066Mbps All products offered at Extended, Low, i-TCSR & PASR & DS (Temp, Power)

GRAPHICS DRAM COMPONENTS

Type	Density	Organization	Part Number	Package	VDD/VDDQ	Speed Bin (MHz)	Production
GDDR5	2Gb	64Mx32	K4G20325FD-FC(04/03/28)	170-FBGA	1.5V/1.5V	1250/1500/1750	Now
			K4G20325FD-FC(04/03)	170-FBGA	1.35V/1.35V	900/1050	Now
			K4G20325FC-HC(05/04/03)	170-FBGA	1.5V/1.5V	1000/1250/1500	Now
			K4G20325FC-HC04	170-FBGA	1.35V/1.35V	900	Now
	1Gb	32Mx32	K4G10325FG-HC03	170-FBGA	1.5/1.5V (1.6V/1.6V)	1500	Now
			K4G10325FG-HC(05/04)	170-FBGA	1.5V/1.5V	1000/1250	Now
			K4G10325FG-HC(04/03)	170-FBGA	1.35V/1.35V	900/1050	Now
GDDR3	1Gb	32Mx32	K4J10324KG-HC(14/1A)	136-FBGA	1.8V/1.8V	700/1000	Now
	512Mb	16Mx32	K4J52324KI-HC(1)	136-FBGA	1.8/1.8V	700/800/1000	Now
gDDR3	4Gb	256Mx16	K4W4G1646B-HC(12/11/1A)	96-FBGA	1.5V/1.5V	800/933/1066	Now
	2Gb	128Mx16	K4W2G1646C-HC(15/12/11/1A)	96-FBGA	1.5V/1.5V	667/800/900/1000	Now
	1Gb	64Mx16	K4W1G1646G-BC(15/12/11/1A/08)	96-FBGA	1.5V/1.5V	667/800/933/1066/1200	Now
gDDR2	1Gb	64Mx16	K4N1G164QF-BC(1)	84-FBGA	1.8/1.8V	400/500	

NOTES:

Package

H: FBGA (Halogen Free & Lead Free)
B: FBGA (Halogen Free & Lead Free)

(1) Speeds (clock cycle - speed bin)

03: 0.3ns (3000MHz)
04: 0.4ns (2500MHz)
05: 0.5ns (2000MHz)
5C: 0.555 (1800MHz)
08: 0.83ns (1200MHz)
1A: 1ns (1000MHz GDDR3)
1A: 1ns (1066MHz gDDR3)
11: 1.1ns (933MHz)
12: 1.25ns (800MHz)
14: 1.429ns (700MHz)
20: 2.0ns (500MHz)
25: 2.5ns (400MHz)

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

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

1. Memory (K)

2. DRAM: 4

3. DRAM Type

B: DDR3 SDRAM
D: GDDR SDRAM
G: GDDR5 SDRAM
H: DDR SDRAM
J: GDDR3 SDRAM
M: Mobile SDRAM
N: SDDR2 SDRAM
S: SDRAM
T: DDR SDRAM
U: GDDR4 SDRAM
V: Mobile DDR SDRAM Power Efficient Address
W: SDDR3 SDRAM
X: Mobile DDR SDRAM
Y: XDR DRAM
Z: Value Added DRAM

4. Density

10: 1G, 8K/32ms
16: 16M, 4K/64ms
26: 128M, 4K/32ms
28: 128M, 4K/64ms
32: 32M, 2K/32ms
50: 512M, 32K/16ms
51: 512M, 8K/64ms
52: 512M, 8K/32ms
54: 256M, 16K/16ms
55: 256M, 4K/32ms
56: 256M, 8K/64ms
62: 64M, 2K/16ms
64: 64M, 4K/64ms
68: 768M, 8K/64ms
1G: 1G, 8K/64ms
2G: 2G, 8K/64ms
4G: 4G, 8K/64ms

5. Bit Organization

02: x2
04: x4
06: x4 Stack (Flexframe)
07: x8 Stack (Flexframe)
08: x8
15: x16 (2CS)
16: x16
26: x4 Stack (JEDEC Standard)
27: x8 Stack (JEDEC Standard)
30: x32 (2CS, 2CKE)
31: x32 (2CS)
32: x32

6. # of Internal Banks

2: 2 Banks
3: 4 Banks
4: 8 Banks
5: 16 Banks

7. Interface (VDD, VDDQ)

2: LVTTL, 3.3V, 3.3V
4: LVTTL, 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: LVTTL, 1.8V, 1.5V
N: LVTTL, 1.5V, 1.5V
P: LVTTL, 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. Revision

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

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

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)

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 of Lead-free or Halogen-free product 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

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

1. Memory Module: M

2. DIMM Type

3: DIMM
4: SODIMM

3. Data bits

12: x72 184pin Low Profile Registered DIMM
63: x63 PC100 / PC133 µSODIMM with SPD for 144pin
64: x64 PC100 / PC133 SODIMM with SPD for 144pin (Intel/JEDEC)
66: x64 Unbuffered DIMM with SPD for 144pin/168pin (Intel/JEDEC)
68: x64 184pin Unbuffered DIMM
70: x64 200pin Unbuffered SODIMM
71: x64 204pin Unbuffered SODIMM
74: x72 /ECC Unbuffered DIMM with SPD for 168pin (Intel/JEDEC)
77: x72 /ECC PLL + Register DIMM with SPD for 168pin (Intel PC100)
78: x64 240pin Unbuffered DIMM
81: x72 184pin ECC unbuffered DIMM
83: x72 184pin Registered DIMM
90: x72 /ECC PLL + Register DIMM
91: x72 240pin ECC unbuffered DIMM
92: x72 240pin VLP Registered DIMM
93: x72 240pin Registered DIMM
95: x72 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 & LVTTL (SDR Only)
5: 8K/ 64ms Ref., 4Banks & LVTTL (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. Component Revision

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 of Lead-free or Halogen-free product are in compliance with RoHS

SLC FLASH

Density	Technology	Part Number	Package Type	Org.	Vol(V)	Status
128Gb ODP	32nm DDR	K9QDGD8S5M-HCB*	BGA	x8	1.8	MP
		K9QDGD8U5M-HCB*	BGA	x8	3.3	MP
	32nm SDR	K9QDG08U5M-HCB*	BGA	x8	3.3	MP
64Gb QDP	32Gb DDP	K9WCGD8S5M-HCB*	BGA	x8	1.8	MP
		K9WCGD8U5M-HCB*	BGA	x8	3.3	MP
	32nm SDR	K9WCG08U5M-HCB*	BGA	x8	3.3	MP
		K9WCG08U5M-HIB*	BGA	x8	3.3	MP
32Gb DDP	32nm DDR	K9KBGD8S1M-HCB*	BGA	x8	1.8	MP
		K9KBGD8U1M-HCB*	BGA	x8	3.3	MP
		K9KBGD8U1M-HIB*	BGA	x8	3.3	MP
	32nm SDR	K9KBG08U1M-HCB*	BGA	x8	3.3	MP
		K9KBG08U1M-HIB*	BGA	x8	3.3	MP
16Gb Mono	32nm SDR	K9FAG08U0M-HCB*	BGA	x8	3.3	MP
		K9FAG08U0M-HIB*	BGA	x8	3.3	MP
16Gb QDP	42nm	K9WAG08U1D-SCB0*	TSOP1	x8	3.3	MP
		K9WAG08U1D-SIB0*	TSOP1	x8	3.3	MP
8Gb DDP	42nm	K9K8G08U0D-SCB0*	TSOP-LF/HF	x8	3.3	MP
		K9K8G08U0D-SIB0*	TSOP-LF/HF	x8	3.3	MP
4Gb	42nm	K9F4G08U0D-SCB0*	TSOP1 HF & LF	x8	3.3	MP
		K9F4G08U0D-SIB0*	TSOP1 HF & LF	x8	3.3	MP
2Gb	42nm	K9F2G08U0C-SCB0*	TSOP-LF/HF	x8	3.3	MP
		K9F2G08U0C-SIB0*	TSOP-LF/HF	x8	3.3	MP
1Gb	42nm	K9F1G08U0D-SCB0*	TSOP-LF/HF	x8	3.3	MP
		K9F1G08U0D-SIB0*	TSOP-LF/HF	x8	3.3	MP

Please contact your local Samsung sales representative for latest product offerings.

Note: All parts are lead free

MLC FLASH

Type	Density	Technology	Part Number	Package Type	Org.	Vol(V)	Status
2bit	256Gb ODP	32nm Ep-MLC	K9PFGD8U5M-HCE0000	BGA	x8	3.3	MP
	128Gb QDP	32nm Ep-MLC	K9HDGD8U5M-HCE0000	BGA	x8	3.3	MP
	64Gb DDP	32nm Ep-MLC	K9LCGD8U1M-HCE0000	BGA	x8	3.3	MP
	512Gb ODP	21nm Ep-MLC	K9PHGY8S5A-HCE0000	BGA	x8	3.3	MP
	256Gb QDP	21nm Ep-MLC	K9HFGY8S5A-HCE0000	BGA	x8	3.3	MP
	128Gb DDP	21nm Ep-MLC	K9LDGY8S1A-HCE0000	BGA	x8	3.3	MP
3bit	256Gb QDP	3bit_27nm DDR	K9CFGD8U1M-SCB*	TSOP	x8	3.3	MP
	128Gb DDP	3bit_27nm DDR	K9BDGD8U0M-SCB*	TSOP	x8	3.3	MP
	64Gb mono	3bit_27nm DDR	K9ACGD8U0M-SCB*	TSOP	x8	3.3	MP
	32Gb mono	3bit_27nm DDR	K9ABGD8U0B-SCB*	TSOP	x8	3.3	MP

Please contact your local Samsung sales representative for latest product offerings.

Note: All parts are lead-free & halogen-free

SD and MicroSD FLASH CARDS

Application	Density	Part Number
SD Cards	2GB	MMAGF02GWFCA-2MN00
	4GB	MMBTF04GWBCA-QME00
	8GB	MMBTF08GWBCA-RME00
	16GB	MMBTF16GWBCA-RME00
	32GB	MMBTF32GWBCA-SAB00
uSD Cards	2GB	MMAGR02GUFCA-2MN00
	4GB	MMBTR04GUBCA-2ME00
	8GB	MMBTR08GUBCA-2ME00
	16GB	MMBTR16GUBCA-2ME00
	32GB	MMBTR32GUBCA-2AB00

Please contact your local Samsung sales representative for part numbers and latest product offerings.

moviNAND™ (eMMC)

Density	Flash	Part Number	MMC Version	Package Type	Org.	Vol (V)	Status
2GB	16Gb*1	KLM2G1HE3F-B001xxx	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
4GB	32Gb*1	KLM4G1FE3B-B001xxx	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
8GB	32Gb*2	KLM8G2FE3B-B001xxx	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
16GB	64Gb*2	KLMAG2GE4A-A001xxx	v4.41	12x16 BGA	x8	1.8/3.3	MP
16GB	32Gb*4	KLMAG4FE3B-A001xxx	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
32GB	64Gb*4	KLMBG4GE4A-A001xxx	v4.41	12x16 BGA	x8	1.8/3.3	MP
64GB	64Gb*8	KLMCG8GE4A-A001xxx	v4.41	12x16 BGA	x8	1.8/3.3	MP

Please contact your local Samsung sales representative for part numbers and latest product offerings.

SOLID STATE DRIVES (SSD)

Interface	Size	Connector	Controller	Component	Density	Part Number	Comments
SATA 6Gb/s - MLC	2.5" 7mmT	Thin SATA	PM830	32Gb	64GB	MZ7PC064HADR-00000	Mass production
					128GB	MZ7PC128HAFU-00000	Mass production
					256GB	MZ7PC256HAFU-00000	Mass production
					512GB	MZ7PC512HAGH-00000	Mass production
	mSATA	PCIe	PM830	32Gb	32GB	MZMPC032HBCD-00000	Mass production
					64GB	MZMPC064HBDR-00000	Mass production
					128GB	MZMPC128HBFU-00000	Mass production
					256GB	MZMPC256HBGJ-00000	Mass production
SATA 3Gb/s - E-MLC	2.5" 15mmT	Thin SATA	SM825	32Gb	100GB	MZ5EA100HMDR-00003	Mass production
					200GB	MZ5EA200HMDR-00003	Mass production
					400GB	MZ5EA400HMFP-00003	Mass production

Please contact your local Samsung sales representative for latest product offerings.
Note: All parts are lead free

FLASH PRODUCT ORDERING INFORMATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
K	9	X	X	X	X	X	X	X	X	-	X	X	X	X

SAMSUNG Memory	Pre-Program Version
NAND Flash	Customer Bad Block
Small Classification	Temp
Density	Package
Density	---
Organization	Generation
Organization	Mode
Vcc	

1. Memory (K)

2. NAND Flash : 9

3. Small Classification

(SLC : Single Level Cell, MLC : Multi Level Cell)

7 : SLC moviNAND
8 : MLC moviNAND
F : SLC Normal
G : MLC Normal
H : MLC QDP
K : SLC DDP
L : MLC DDP
M : MLC DSP
N : SLC DSP
P : MLC 8 Die Stack
Q : SLC 8 Die Stack
S : SLC Single SM
T : SLC SINGLE (S/B)
U : 2 Stack MSP
W : SLC 4 Die Stack

4~5. Density

12 : 512M
56 : 256M
1G : 1G
2G : 2G
4G : 4G
8G : 8G
AG : 16G BG :
32G CG : 64G
DG : 128G
EG : 256G
LG : 24G
NG : 96G
ZG : 48G
00 : NONE

6~7. Organization

00 : NONE
08 : x8
16 : x16

8. Vcc

A : 1.65V~3.6V
B : 2.7V (2.5V~2.9V)
C : 5.0V (4.5V~5.5V)
D : 2.65V (2.4V~2.9V)
E : 2.3V~3.6V
R : 1.8V (1.65V~1.95V)
Q : 1.8V (1.7V~1.95V)
T : 2.4V~3.0V
U : 2.7V~3.6V
V : 3.3V (3.0V~3.6V)
W : 2.7V~5.5V, 3.0V~5.5V
0 : NONE

9. Mode

0 : Normal
1 : Dual nCE & Dual R/nB
3 : Tri /CE & Tri R/B
4 : Quad nCE & Single R/nB
5 : Quad nCE & Quad R/nB
9 : 1st block OTP
A : Mask Option 1
L : Low grade

10. Generation

M : 1st Generation
A : 2nd Generation
B : 3rd Generation
C : 4th Generation
D : 5th Generation

11. " ----"

12. Package

A : COB
B : FBGA (Halogen-Free, Lead-Free)
C : CHIP BIZ D : 63-TBGA
F : WSOP (Lead-Free) G : FBGA
H : TBGA (Lead-Free)
I : ULGA (Lead-Free) (12*17)
J : FBGA (Lead-Free)
L : ULGA (Lead-Free) (14*18)
M : TLGA N : TLGA2
P : TSOP1 (Lead-Free)
Q : TSOP2 (Lead-Free)
S : TSOP1 (Halogen-Free, Lead-Free)
T : TSOP2 U : COB (MMC)
V : WSOP W : Wafer
Y : TSOP1 Z : WELP (Lead-Free)

13. Temp

C : Commercial I : Industrial
0 : NONE (Containing Wafer, CHIP, BIZ, Exception handling code)

14. Customer Bad Block

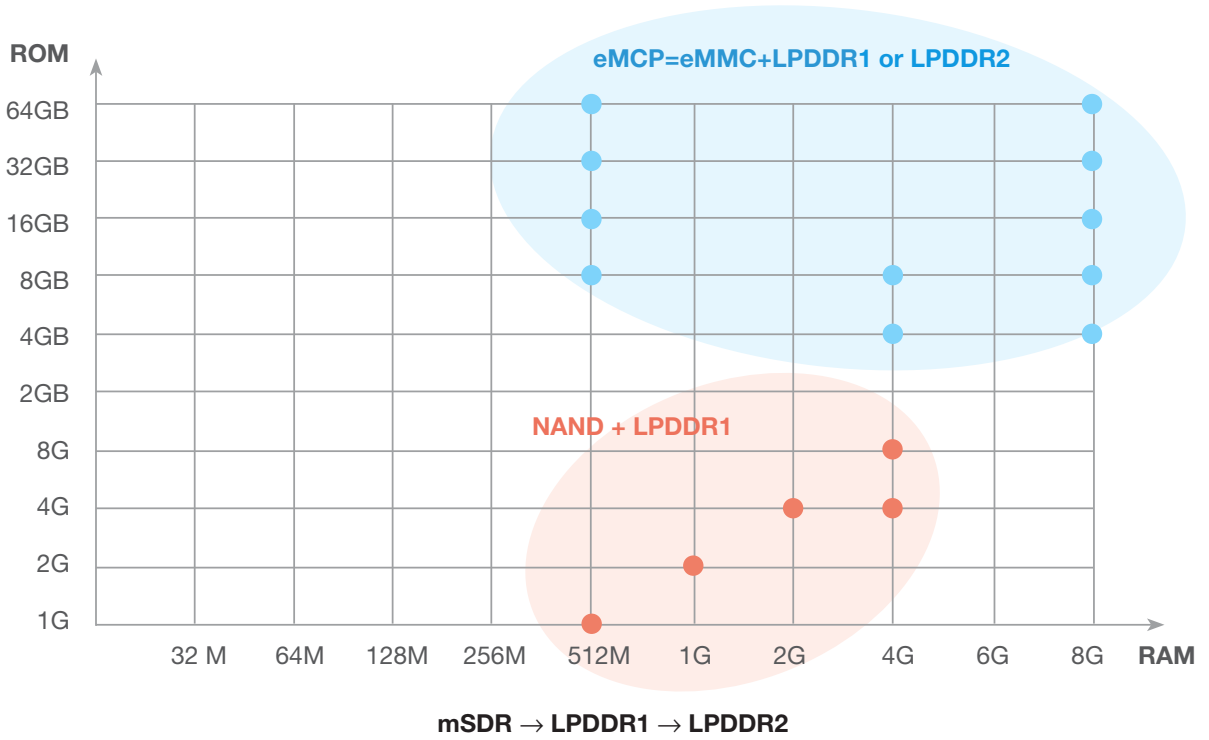
B : Include Bad Block
D : Daisychain Sample
L : 1~5 Bad Block
N : ini. 0 blk, add. 10 blk
S : All Good Block
0 : NONE (Containing Wafer, CHIP, BIZ, Exception handling code)

15. Pre-Program Version

0 : None
Serial (1~9, A~Z)

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

Samsung MCP products' suite with different values and types of RAM and ROM



MCP: NAND + MDDR

Memory	NAND Density	DRAM Density/Organization	Voltage (NAND-DRAM)	Package
NAND & MDRAM	1Gb (x16)	256Mb (x16)	1.8V - 1.8V	130FBGA
		512Mb (x16)	1.8V - 1.8V	130FBGA
	2Gb (x16)	1Gb (x16)	1.8V - 1.8V	130FBGA/137FBGA
	2Gb (x16)	1Gb (x32)	1.8V - 1.8V	130FBGA/137FBGA
	4Gb (x16)	2Gb (x32)	1.8V - 1.8V	137FBGA
		2Gb*2 (x32, 2CS/2CKE)	1.8V - 1.8V	137FBGA
	4Gb*2 (x16)	2Gb*2 (x32, 2CS/2CKE)	1.8V - 1.8V	137FBGA

MCP: moviNAND + LPDDR2

Memory	moviNAND Density	DRAM Density/Organization	Voltage	Package
	4GB	4Gb*2 (x32, 1ch, 2CS)	1.8V - 1.8V	162FBGA
	8GB	4Gb*2 (x32, 1ch, 2CS)	1.8V - 1.8V	186FBGA
	16GB	4Gb*2 (x32, 1ch, 2CS)	1.8V - 1.8V	186FBGA
	32GB	4Gb*2 (x32, 1ch, 2CS)	1.8V - 1.8V	186FBGA
	64GB	4Gb*2 (x32, 1ch, 2CS)	1.8V - 1.8V	186FBGA

MCP: moviNAND + MDDR

Memory	moviNAND Density	DRAM Density/Organization	Voltage	Package
moviNAND & MDRAM	4GB	512Mb (x32)	1.8V - 1.8V	153FBG
		2Gb*2 (x32, 2CS/CKE)	1.8V - 1.8V	153FBGA
	8GB	512Mb (x32)	1.8V - 1.8V	169FBGA
		2Gb*2 (x32, 2ch, 2CS/CKE)	1.8V - 1.8V	169FBGA
	16GB	512Mb (x32)	1.8V - 1.8V	169FBGA
	32GB	512Mb (x32)	1.8V - 1.8V	169FBGA
	64GB	512Mb(x32)	1.8V - 1.8V	169FBGA

SAMSUNG SOLID STATE DRIVES

	DATA CENTER EDITION High-Write Environments	CLIENT/MOBILE EDITION High-Read Environments	
	Samsung SM825	**Samsung PM830**	
Form Factor	2.5 inches	2.5 inches	mSATA
Capacity (GB)	100, 200, 400	64, 128, 256, 512	32, 64, 128, 256
Host Interface	SATA Gen 2.0–3Gb/s	SATA Gen 3.0–6Gb/s	
Flash	E-MLC 30nm-class	MLC 20nm-class	
Encryption	AES-256	AES-256	
MTBF	2 mm hours	1.5 mm hours	1 mm hours
Uncorrectable Bit Error Rate (UBER)	1 in 10^{17}	1 in 10^{15}	
Power Consumption	Active: 1.8W Idle: 1.3W	Active: 0.127W Idle: 0.078W	
Write Endurance (Terabytes Written)	Up to 7,000TBW	Up to 60–1250TBW	Up to 30–60TBW
Cache Power Protection	Yes	No	
Sequential R/W (MB/s)	250 / 220	500 / 400	500 / 400
Random R/W (IOPs)	43K / 11K	80K / 36K	50K / 29K
Physical Dimensions	100 x 69.85 x 15mm	100 x 69.85 x 7mm	50.95 x 30 x 3.8mm
Weight	140–146g	61g–62.5g	9–10g

Which SSD is right for you?
For more information, email: **SSD@ssi.samsung.com**

SOLID STATE DRIVES (SSD)

Interface	Size	Connector	Controller	Component	Density	Part Number	Comments
SATA 6Gb/s - MLC	2.5" 7mmT	Thin SATA	PM830	32Gb	64GB	MZ7PC064HADR-00000	Mass production
					128GB	MZ7PC128HAFU-00000	Mass production
					256GB	MZ7PC256HAFU-00000	Mass production
					512GB	MZ7PC512HAGH-00000	Mass production
	mSATA	PCIe	PM830	32Gb	32GB	MZMPC032HBCD-00000	Mass production
					64GB	MZMPC064HBDR-00000	Mass production
					128GB	MZMPC128HBFU-00000	Mass production
					256GB	MZMPC256HBGJ-00000	Mass production
SATA 3Gb/s - E-MLC	2.5" 15mmT	Thin SATA	SM825	32Gb	100GB	MZ5EA100HMDR-00003	Mass production
					200GB	MZ5EA200HMDR-00003	Mass production
					400GB	MZ5EA400HMFP-00003	Mass production

Please contact your local Samsung sales representative for latest product offerings.
Note: All parts are lead free

OPTICAL SMARTHUB

Interface	Speed	Type	Loading	Lightscribe	Model
Wi-Fi	DVD Write 8X	Slim	Tray	X	SE-208BW

BLU-RAY SLIM

Interface	Speed	Type	Loading	Lightscribe	Model
SATA	BD Combo 6X	Slim	Tray	X	SN-406AB
	BD Writer 6X	Slim	Tray	X	SN-506AB

BLU-RAY WRITER SLIM EXTERNAL

Interface	Speed	Type	Loading	Lightscribe	Model
USB 2.0	BD Writer 6X	Slim	Tray	X	SE-506AB
					SE-506BB

DVD-W H/H

Interface	Speed	Type	Loading	Lightscribe	Model
SATA	DVD Write 22X	H/H	Tray	X	SH-222BB

DVD-W SLIM

Interface	Speed	Type	Loading	Lightscribe	Model
SATA	DVD Write 8X	Slim	Tray	X	SN-208BB
					SN-208DB

DVD-W SLIM EXTERNAL

Interface	Speed	Type	Loading	Lightscribe	Model
USB 2.0	DVD Write 8X	Ultra Slim	Tray	X	SE-218BB
		Slim	Tray	X	SE-208AB

DID Product Classification

E-DID: Exclusive DID	SUPER NARROW		OUTDOOR: HIGH LUMINANCE » 1500 – 2000nit
P-DID: Performance DID	NARROW » Narrow » Black Bezel	WALL-MOUNTED » Thin/Light » (Edge LED)	LARGE FORMAT DISPLAY » 70" / 82"
B-DID: Basic DID	LANDSCAPE / PORTRAIT CONVERTIBLE		

Why DID Instead of TV?

	Commercial (DID)	Consumer (TV)
Warranty	18 months to 2 years	90 days to 1 year
Reliability	Designed for continuous use in different environments Turned on for 20 hours + Variety of temperatures & location	Designed for in-home use in controlled environment Turned on for 6-8 hours In-home living room
Picture Quality	Designed for PC signals LCD backlight covers a wider color spectrum necessary for PC source integration giving better picture quality	Designed for TV signals
Location	Can be oriented in either portrait or landscape mode	Can only be oriented in landscape mode

Product Segmentation

HEAVY USE

LIGHT USE

E-DID: Exclusive
- » All features of P-DID plus
- » Specialty: SNB, High Brightness
- » Robust design

P-DID: Performance
- » All features of B-DID plus
- » Narrow & Black Bezel
- » Typ. Brightness: 700 (cd/m2)

B-DID: Basic
- » Landscape/Portrait
- » High reliability
- » Pol. (Haze 44%)
- » Long lifetime: more than 2 years

Professional	Outdoor Events	Billboard
• Control Room • Simulation	• Scoreboard • Sports Broadcasting	• Billboard

Entertainment	Transportation	Communication	Rental
• Casino • Theatre • Poster • Menu	• Airport • Train/Bus Station	• Conference Room	• Rental • Staging

Commercial	Education
• Kiosk • Mart Board	• E-Board

Product Segmentation

Type	Abbr	Warranty	Bezel	Suggested Run Time	Brightness	Usage	Applications	Pricing
E-DID	Exclusive	2 years	Narrow and Super Narrow	20 hours +	450 to 2000 nits	Heavy	Outdoor, Video Walls	High-price range
P-DID	Performance	2 years	Narrow	20 hours +	600/700 nits	Medium	Semi-Outdoor	Mid-price range
B-DID	Basic	18 months	Normal	12 hours	450 nits	Light	Indoor, e-Board	Low-price range; comparable to consumer panels

SAMSUNG DIGITAL INFORMATION DISPLAY (DID) PANEL LINEUP

Type	Current Model	Size	Model resolution	Bezel	Backlight	Brightness (typical)	Contrast Ratio	Response Time	Frequency	MP*	Comment	High TNI 85°C
E-DID	LTI460AA03	46"	HD	Narrow + Black	CCFL	1500 nits	3,000:1	8ms	60Hz	Now	High Bright	✓
	LTI460HN03	46"	FHD	Narrow + Black	CCFL	1500 nits	3,000:1	8ms	60Hz	Now	High Bright, Hi Temp LC, 1/4λ Pol.	✓
	LTI460HN01	46"	FHD	Super narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	5.7mm Active to Active	✓
	LTI460AA04	46"	HD	Super narrow	CCFL	700 nits	3,000:1	8ms	60Hz	Now	7.3mm Active to Active	
	LTI460AA05	46"	HD	Super narrow	CCFL	450 nits	4,000:1	8ms	60Hz	Now	7.3mm Active to Active	
	LTI550HN01	55"	FHD	Super narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	5.7mm Active to Active	✓
	LTI700HD02	70"	FHD	Normal	D-LED	2000 nits	2,500:1	8ms	60Hz	Now	High Bright	
P-DID	LTI400HA02	40"	FHD	Narrow	CCFL	700 nits	3,000:1	8ms	60Hz	Now		
	LTI400HA08-N	40"	FHD	Narrow	CCFL	700 nits	3,000:1	8ms	60Hz	Now		✓
	LTI400HA08-V	40"	FHD	Narrow + Black	CCFL	700 nits	3,000:1	8ms	60Hz			✓
	LTI460HN05	46"	FHD	Narrow + Black	CCFL	700 nits	3,500:1	8ms	60Hz	Now		✓
	LTI460HJ01	46"	FHD	Narrow	E-LED	600 nits	3,000:1	10ms	120Hz	Now		
	LTI550HN03	55"	FHD	Narrow	CCFL	700 nits	4,000:1	8ms	60Hz	Now		✓
	LTI550HJ02	55"	FHD	Narrow	E-LED	600 nits	4,000:1	10ms	120Hz	Now		
	LTI700HD01	70"	FHD	Normal	CCFL	600 nits	2,000:1	8ms	60Hz	Now		
	LTI820HT-L01	82"	FHD	Normal	CCFL	600 nits	2,000:1	8ms	60Hz	Now		
B-DID	LTI320AP02	32"	HD	Normal	CCFL	450 nits	3,500:1	8ms	60Hz	Now		
	LTI400HA07	40"	FHD	Normal	CCFL	450 nits	4,000:1	8ms	60Hz	Now		✓
	LTI460HN04	46"	FHD	Normal	CCFL	450 nits	3,000:1	8ms	60Hz	Now		✓
	LTI550HN02	55"	FHD	Normal	CCFL	450 nits	3,500:1	8ms	60Hz	Now		✓
	LTI700HA01	70"	FHD	Normal	CCFL	450 nits	2,000:1	8ms	60Hz	Now	E-Board; Landscape mode only	
	LTI820HD03	82"	FHD	Normal	CCFL	450 nits	2,000:1	8ms	60Hz	Now	E-Board; Landscape mode only	
Transparent	LTI460AP01	46"	HD	Narrow	Transparent / No BLU		4,500:1	8ms	60Hz	Now		
	LTI220MT02	46"	WSXGA+	Narrow	Transparent / No BLU		500:1	5ms	60Hz	Now		

NOTES:
HD = 1366 x 768
FHD = 1920 x 1080
*MP Date subject to change

Please contact your local Samsung Rep for more information.

TABLETS

Size	PN	Mode	Resolution	H(RGB)	V	Aspect Ratio	PPI	Brightness (nits)	MP
7"	LTN070AL01-0	PLS	WXGA	1280	800	16:10	216	400	Now
10.1"	LTL101AL02-D	PLS	WXGA	1280	800	16:10	149	400	Now

NOTEBOOKS / PERSONAL COMPUTERS

Size	PN	Mode	Resolution	H(RGB)	V	Aspect Ratio	PPI	Brightness (nits)	MP
10.1"	LTN101NT08	TN	WSVGA	1024	600	16:10	118	200	Now
	LTN101AT03	TN	HD	1366	768	16:9	155	200	Now
11.6"	LTN116AT01	TN	HD	1366	768	16:9	135	200	Now
13.3"	LTN133AT20	TN	HD	1366	768	16:9	118	200	Mar '12
14"	LTN140AT20-6	TN	HD	1366	768	16:9	112	200	Mar '12
15.6"	LTN156AT17	TN	HD	1366	768	16:9	100	200	Now

MONITORS

Size	PN	Mode	Resolution	H(RGB)	V	Aspect Ratio	PPI	Brightness (nits)	MP
17"	LTM170ET01	TN	SXGA	1280	1024	5:4	96	250	Now
18.5"	LTM185AT01	TN	HD	1366	768	16:9	85	250	Now
	LTM185AT05-Q	TN	HD	1366	768	16:9	85	250	Now
19"	LTM190ET01	TN	SXGA	1280	1024	5:4	86	250	Now
	LTM190BT07	TN	WXGA+	1440	900	16:9	96	250	Now
20"	LTM200KT03	TN	HD+	1600	900	16:9	92	250	Now
	LTM200KT010	TN	HD+	1600	900	16:9	92	250	Now
21.5"	LTM215HT04	TN	FHD	1920	1080	16:9	103	250	Now
22"	LTM220MT05-M	TN	WSXGA+	1680	1050	16:10	90	250	Now
	LTM220MT09	TN	WSXGA+	1680	1050	16:10	90	250	Now
23"	LTM230HT10-Q	TN	FHD	1920	1080	16:9	96	300	Now
	LTM230HL01	PLS	FHD	1920	1080	16:9	96	300	Now
24"	LTM240CT06	TN	WUXGA	1920	1200	16:10	94	250	Now
	LTM240CL01	PLS	WUXGA	1920	1200	16:9	94	300	Now
27"	LTM270HT03	TN	FHD	1920	1080	16:9	82	300	Now
	LTM270DL02	PLS	QHD	2560	1440	16:9	109	300	Now

CONTACTS

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

Representatives

Name	Location	Phone
Adelsa	Ciudad Juarez	52-656-613-3517
Adelsa	Monterrey	52-818-214-0011
Adelsa	Mexico City (HQ)	52-555-560-5002
Adelsa	Guadalajara	52-333-122-3054
ATMI	Washington	425-869-7636
ATMI	Oregon	503-643-8307
Bear / VAI	Ohio	440-526-1991
Bear / VAI	Western PA	440-526-1991
Bear / VAI	Indiana/Kentucky	440-832-7637
Bear / VAI	Michigan	440-526-1991
Bestronics	San Diego	858-673-4300
Beta Technology	Illinois	630-250-9586
Beta Technology	Wisconsin	262-547-6933
Crestone	Colorado	303-280-7202
Crestone	Utah	303-280-7202
Customer 1st	Iowa	319-393-1351
Customer 1st	Kansas	913-390-9119
Customer 1st	Minnesota	952-851-7909
Digit-Tech Sales	Sao Paulo, Brazil	5511-3165-2218
Digit-Tech Sales	Puerto Rico	787-892-4260
Digit-Tech Sales	Miami (export)	305-591-2400
Infinity Sales	Los Angeles	818-880-6480
Infinity Sales	Orange County	714-669-8520

Name	Location	Phone
InTELaTECH	Calgary	905-629-0082
InTELaTECH	Montreal	905-629-0082
InTELaTECH	Ottawa	905-629-0082
InTELaTECH	Toronto	905-629-0082
I-Squared	San Jose	408-988-3400
I-Squared	Petaluma	707-773-3108
Neptune Electr. (NECCO)	NY, PA, MD	631-234-2525
New Elpis (LCD)	Ontario	1-905-275-3516
New Tech Solutions	Massachusetts	781-229-8888
New Tech Solutions	CT/NY	585-204-2183
Platinum (SLSI)	Los Angeles	818-879-5905
Platinum (SLSI)	Orange County	949-266-2900
Platinum (SLSI)	San Diego	858-777-1614
Rep One Associates	Alabama	256-539-7371
Rep One Associates	Charlotte, NC	704-846-5744
Rep One Associates	Georgia	770-209-9242
Rep One Associates	Raleigh, NC	919-424-3804
Rep One Associates	Florida	256-539-7371
Summit Sales	Phoenix/El Paso	480-998-4850
West Associates	Dallas	972-680-2800
West Associates	Austin	512-343-1199
West Associates	Houston	512-343-1199

Distributors

Company Name	Location	Contact
Edge Electronics, Inc. Headquarters	75 Orville Dr., Unit 2 Bohemia, NY 11716	Phone: 800.647.EDGE (3343) Fax: 631.471.3405 www.edgeelectronics.com Email: edge@edgeelectronics.com
Avnet, Inc. Phoenix, Arizona Headquarters	2211 South 47th Street Phoenix, AZ 85034	www.avnet.com For sales inquiries: (800)332-8638 www.avnetexpress.com
WPG Americas Inc. Corporate Office	5285 Hellyer Avenue Suite 150 San Jose, CA 95138	Tel 408-392-8100 Tel 888-WPG-8881 Fax 408-436-9551 www.wpgamericas.com For sales inquiries: inquiry@wpgamericas.com
Arrow Electronics, Inc. Corporate Headquarters	Corporate Headquarters 7459 S. Lima Street Englewood, CO 80112-5816	Phone: (303) 824-4000 www.arrow.com For sales inquiries: www.arrownac.com / onlinesales@arrow.com / (800) 833-3557

For all product information please visit: **samsung.com/us/oem-solutions**

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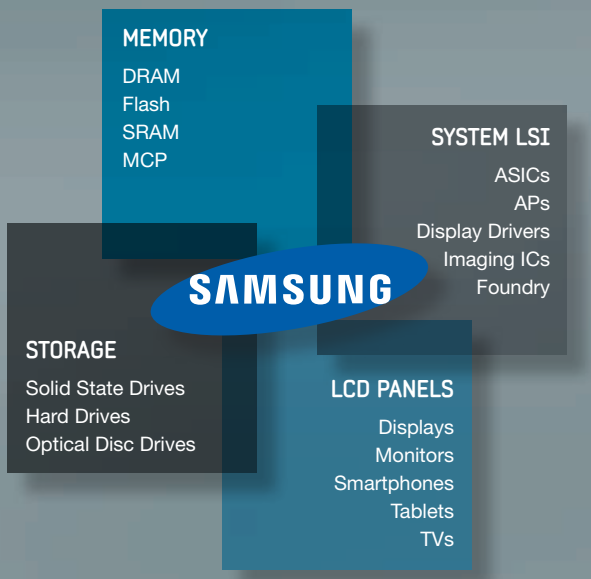

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