Samsung Semiconductor, Inc.

Samsung continues to lead the industry with the broadest portfolio of memory products and technology. Its DRAM, flash, mobile, and graphics memory 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

DRAM

samsung.com/dram

- DDR3 SDRAM
- DDR2 SDRAM
- DDR SDRAM
- SDRAM
- Mobile DRAM
- Graphics DDR SDRAM
- DRAM Ordering Information

FLASH - SSD

samsung.com/flash

- SLC Flash
- MLC Flash
- SD and microSD Cards
- eMMC
- Solid State Drive
- Flash Ordering Information

MULTI-CHIP PACKAGE

samsung.com/mcp

- NAND + MDDR
- eMMC + LPDDR2
- eMMC + MDDR

STORAGE

samsung.com/greenmemory

- Solid State Drive

samsungodd.com

- Optical Disc Drive

DISPLAYS

samsungdisplay.com

- Exclusive Digital Information Display (E-DID)
- Performance Digital Information Display (P-DID)
- Basic Digital Information Display (B-DID)
- Tablets
- Notebooks/PCs
- Monitors

CONTACTS

samsung.com/us/oemsolutions

- 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)

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)

MOBILE DRAM COMPONENTS

Density	Type	Organization	Part Number	Package	Power	Production
512Mb	MDDR	32Mx16	K4X51163PK-FGD8	60-FBGA, 800MHz	1.8V	Now
		16Mx32	K4X51323PK-8GD8	90-FBGA, 800MHz	1.8V	Now
1Gb		32Mx32	K4X1G323PF-8GD8	90-FBGA, 800MHz	1.8V	Now
2Gb		64Mx32	K4X2G323PD-8GD8	90-FBGA, 800MHz	1.8V	Now
4Gb		x32 (2CS, 2CKE)	K4X4G303PD-AGD8	168-FBGA, 12x12 PoP, DDP . 800MHz	1.8V	Now
2Gb	LPDDR2	1CH x32	K4P2G324ED-AG(1)	168-FBGA, 12x12 PoP, MONO,	1.2V	Now
4Gb		1CH x32	K4P4G324EB-AG(1,2)	168-FBGA, 12x12 PoP, MONO, 128Mx32	1.2V	Now
		1CH x32	K4P4G324EC-AG(2)	168-FBGA, 12x12 PoP, MONO, 128Mx32	1.2V	ES
		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
8Gb		1CH x32	K4P8G304EB-FG(1,2)	134-FBGA, 11x11.5 , 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	CS
		1CH x32	K4P8G304EC-FG(2)	134-FBGA, 11x11.5 , DDP, 128x16*4	1.2V	ES
		1CH x32	K4P8G304EC-AG(2)	168-FBGA, 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
		2CH x32/ch	K3PE7E700A-XG(2)	240-FBGA, 14x14 PoP, DDP, 128Mx32*2	1.2V	Now
		2CH x32/ch	K3PE7E700P-XG(2)	220-FBGA, 14x14 PoP, DDP, 128Mx32*2	1.2V	CS
		2CH x32/ch	K3PE7E700L-XG(2)	216-FBGA, 12x12 PoP, DDP, 128Mx32*2	1.2V	CS
		2CH x32/ch	K3PE7E700N-XG(2)	240-FBGA, 14x14 PoP, DDP, 128Mx32*2	1.2V	ES
16Gb		1CH x32	K4PAG304EB-FG(2)	134-FBGA, 11x11.5 , QDP	1.2V	Now
		1CH x32	K4PAG304EC-FG(2)	134-FBGA, 11x11.5 , QDP	1.2V	ES
		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
		2CH x32/ch	K3PE0E000E-XG(2)	220-FBGA, 14x14 PoP, QDP, 128Mx32*4	1.2V	ES
		2CH x32/ch	K3PE0E000C-XG(2)	216-FBGA, 12x12 PoP, QDP, 128Mx32*4	1.2V	ES
		2CH x32/ch	K3PE0E000D-XG(2)	240-FBGA, 14x14 PoP, QDP, 128Mx32*4	1.2V	ES
4Gb	LPDDR3	1CH x32	K4E4E324EB-EGCE	178-FBGA, 11x11.5 , MONO , 1066 MHz	1.2V	ES
8Gb		1CH x32	K4E8E304EB-EGCE	178-FBGA, 11x11.5 , DDP, 1066 MHz	1.2V	ES
		2CH x32/ch	K3QF1F100B-PGCE	253-FBGA, 11x11.5 , DDP, 1066 MHz	1.2V	ES
		2CH x32/ch	K3QF1F100G-XGCE	216-FBGA, 15x15 PoP , DDP, 1066 MHz	1.2V	ES
16Gb		1CH x32	K4E6E304EB-EGCE	178-FBGA, 11x11.5 , QDP, 1066 MHz	1.2V	ES
		2CH x32/ch	K3QF2F200A-XGCE	253-FBGA, 11x11.5 , QDP, 1066 MHz	1.2V	ES
		2CH x32/ch	K3QF2F200B-XGCE	216-FBGA, 15x15 PoP , QDP, 1066 MHz	1.2V	ES

NOTES: (1,2) SPEED: MOBILE LPDDR2 (1) C1: 800MHZ (2) C2: 1066MHZ

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	1000/1250	Now
	1Gb	32Mx32	K4G10325FG-HC03	170-FBGA	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
gDDR3	4Gb	256Mx16	K4W4G1646B-HC(12/11/1A)	96-FBGA	1.5V/1.5V	800/933/1066	Now
	2Gb	128Mx16	K4W2G1646E-BC(15/12/11/1A)	96-FBGA	1.5V/1.5V	667/800/933/1066	Now
	1Gb	64Mx16	K4W1G1646G-BC(15/12/11/1A)	96-FBGA	1.5V/1.5V	667/800/933/1066	Now

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

- SAMSUNG Memory
- DRAM
- DRAM Type
- Density
- Bit Organization
- Number of Internal Banks
- Interface (VDD, VDDQ)
- Revision
- Package Type
- Temp & Power
- 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)
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 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
512Gb HDP	21nm DDR	K9WDGY8S5M-CCK*	316FBGA	x8	3.3/1.8	CS Q2 2012
256Gb ODP	21nm DDR	K9QFGY8S7M-CCK*	316FBGA	x8	3.3/1.8	CS Q2 2012
128Gb QDP	21nm DDR	K9VHGY8SCM-CCK*	316FBGA	x8	3.3/1.8	CS Q2 2012
16Gb QDP	42nm SDR	K9WAG08U1D-SCB0*	TSOP1	x8	3.3	MP
		K9WAG08U1D-SIB0*	TSOP1	x8	3.3	MP
8Gb DDP	42nm SDR	K9K8G08U0D-SCB0*	TSOP-LF/HF	x8	3.3	MP
		K9K8G08U0D-SIB0*	TSOP-LF/HF, i-temp	x8	3.3	MP
4Gb	42nm SDR	K9F4G08U0D-SCB0*	TSOP1 HF & LF	x8	3.3	MP
		K9F4G08U0D-SIB0*	TSOP1 HF & LF, i-temp	x8	3.3	MP
2Gb	42nm SDR	K9F2G08U0C-SCB0*	TSOP-LF/HF	x8	3.3	MP
		K9F2G08U0C-SIB0*	TSOP-LF/HF, i-temp	x8	3.3	MP
1Gb	42nm SDR	K9F1G08U0D-SCB0*	TSOP-LF/HF	x8	3.3	MP
		K9F1G08U0D-SIB0*	TSOP-LF/HF, i-temp	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	512Gb ODP	21nm DDR	K9PHGY8S5A-HCK0000	132BGA	x8	3.3/1.8	MP
	256Gb QDP	21nm DDR	K9HFGY8S5A-HCK0000	132BGA	x8	3.3/1.8	MP
	128Gb QDP	27nm DDR	K9HDG08U1A-SCB0000	48TSOP	x8	3.3	MP
		21nm DDR	K9HDGY8U5B-HCK0000	132BGA	x8	3.3	MP
		21nm DDR	K9HDGY8U5B-HCK0000	132BGA	x8	3.3	MP
	128Gb DDP	21nm DDR	K9LDGY8S1A-HCK0000	132BGA	x8	3.3/1.8	MP
	64Gb DDP	21nm DDR	K9LCG08U0B-SCB0000	48TSOP	x8	3.3	MP
		21nm SDR	K9LCGY8U1B-HCK0000	132BGA	x8	3.3	MP
	64Gb mono	21nm DDR	K9GCGY8S0A-HCK0000	132BGA	x8	3.3	MP
	32Gb mono	21nm SDR	K9GBG08U0A-SCB0000	48TSOP	x8	3.3	MP
		21nm DDR	K9GBGY8U0B-HCK0000	60LGA	x9	3.3/1.8	MP
	16Gb mono	27nm SDR	K9GAG08U0F-SCB0000	48TSOP	x8	3.3	MP
		27nm DDR	K9GAGD8U0F-MCB0000	60LGA	x8	3.3	MP
3bit	256Gb QDP	21nm DDR	K9CFGD8U1A-SCB0000	TSOP	x8	3.3	MP
	128Gb DDP	21nm DDR	K9BDGD8U0A-SCB0000	TSOP	x8	3.3	MP
	64Gb mono	21nm DDR	K9ACGD8U0A-SCB0000	TSOP	x8	3.3	MP
	32Gb mono	21nm DDR	K9ABGD8U0C-SCB0000	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
uSD Cards	2GB	MMAUR02G3ACA-QMP00
	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.

eMMC

Density	Flash	Part Number	Class (Random W IOPS)	MMC Version	Package Type	Org.	Vol (V)	Status
4GB	32Gb*1	KLM4G1FE3B-B001xxx	50	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
	32Gb*1	KLM4G1YE4C-B001xxx	100	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
8GB	32Gb*1	KLM4G1FE3B-B001xxx	50	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
	32Gb*1	KLM4G1YE4C-B001xxx	100	v4.41	11.5x13 BGA	x8	1.8/3.3	MP
16GB	64Gb*2	KLMAG2WE4A-A001xxx	250	v4.41	12x16 BGA	x8	1.8/3.3	MP
	64Gb*2	KLMAG2GE4A-A001xxx	400	v4.41	12x16 BGA	x8	1.8/3.3	MP
	64Gb*2	KLMAG2GE2A-A001xxx	1500	v4.5	12x16 BGA	x8	1.8/3.3	MP
32GB	64Gb*4	KLMBG4WE4A-A001xxx	400	v4.41	12x16 BGA	x8	1.8/3.3	MP
	64Gb*4	KLMBG4GE2A-A001xxx	1500	v4.5	12x16 BGA	x8	1.8/3.3	MP
64GB	64Gb*8	KLMCG8GE4A-A001xxx	400	v4.41	12x16 BGA	x8	1.8/3.3	MP
	64Gb*8	KLMCG8GE2A-A001xxx	1500	v4.5	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 III - 6Gb/s	2.5" 7mmT	Thin SATA	PM830	27nm 32Gb MLC	64GB	MZ7PC064HADR-00000	Mass production
					128GB	MZ7PC128HAFU-00000	Mass production
					256GB	MZ7PC256HAFU-00000	Mass production
					512GB	MZ7PC512HAGH-00000	Mass production
	mSATA	PCIe	PM830	21nm 32Gb MLC	32GB	MZMPC032HBCD-00000	Mass production
					64GB	MZMPC064HBDR-00000	Mass production
					128GB	MZMPC128HBFU-00000	Mass production
					256GB	MZMPC256HBGJ-00000	Mass production
SATA II - 3Gb/s	2.5" 15mmT	Thin SATA	SM825	32nm 32Gb E-MLC	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

- 1 : SAMSUNG Memory
- 2 : NAND Flash
- 3 : Small Classification
- 4 : Density
- 5 : Density
- 6 : Organization
- 7 : Organization
- 8 : Vcc
- 9 : Mode
- 10 : Generation
- 11 : ---
- 12 : Package
- 13 : Temp
- 14 : Customer Bad Block
- 15 : Pre-Program Version

1. Memory (K)

2. NAND Flash : 9

3. Small Classification

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

7 : SLC eMMC
8 : MLC eMMC
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

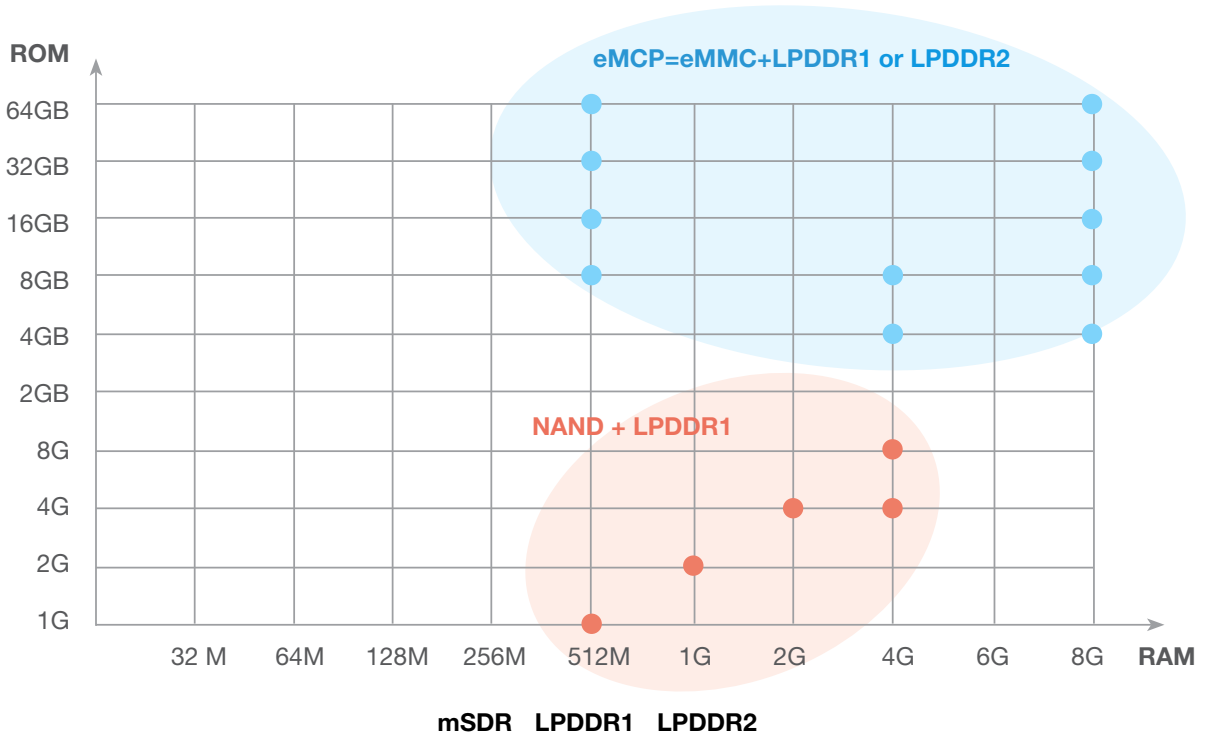
B : Include Bad Block
D : Daisychain Sample
L : 1~5 Bad Block
N : ini. 0 blk, add. 10 blk
S : All Good Block
0 : NONE (Containing Wafer, CHIP, BIZ, Exception handling code)

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 (x8)	1Gb (x32)	1.8V - 1.8V	130FBGA
	2Gb (x16)	1Gb (x16)	1.8V - 1.8V	130FBGA
	4Gb (x16)	2Gb (x32)	1.8V - 1.8V	137FBGA
		2Gb*2 (x32, 2CS/2CKE)	1.8V - 1.8V	137FBGA

eMCP: eMMC + LPDDR2

Memory	eMMC Density	DRAM Density/Organization	Voltage (eMMC-DRAM)	Package
eMMC & MDRAM	4GB	4Gb	3.3V/1.8V - 1.8V/1.2V	162FBGA
		4Gb*2 (x32, 1ch, 2CS)	3.3V/1.8V - 1.8V/1.2V	162FBGA
	8GB	4Gb*2 (x32, 1ch, 2CS)	3.3V/1.8V - 1.8V/1.2V	162FBGA
	16GB	4Gb*2 (x32, 1ch, 2CS)	3.3V/1.8V - 1.8V/1.2V	186FBGA
	32GB	4Gb*2 (x32, 1ch, 2CS)	3.3V/1.8V - 1.8V/1.2V	186FBGA
	64GB	4Gb*2 (x32, 1ch, 2CS)	3.3V/1.8V - 1.8V/1.2V	186FBGA

eMCP: eMMC + MDDR

Memory	eMMC Density	DRAM Density/Organization	Voltage (eMMC-DRAM)	Package
eMMC & MDRAM	4GB	2Gb*2 (x32, 2CS/CKE)	3.3V/1.8V - 1.8V	153FBGA
	8GB	512Mb (x16)	3.3V/1.8V - 1.8V	169FBGA
	16GB	512Mb (x16)	3.3V/1.8V - 1.8V	169FBGA
	32GB	512Mb (x16)	3.3V/1.8V - 1.8V	169FBGA
	64GB	512Mb (x16)	3.3V/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	2mm 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 III - 6Gb/s	2.5" 7mmT	Thin SATA	PM830	27nm 32Gb MLC	64GB	MZ7PC064HADR-00000	Mass production
					128GB	MZ7PC128HAFU-00000	Mass production
					256GB	MZ7PC256HAFU-00000	Mass production
					512GB	MZ7PC512HAGH-00000	Mass production
	mSATA	PCIe	PM830	21nm 32Gb MLC	32GB	MZMPC032HBCD-00000	Mass production
					64GB	MZMPC064HBDR-00000	Mass production
					128GB	MZMPC128HBFU-00000	Mass production
					256GB	MZMPC256HBGJ-00000	Mass production
SATA II - 3Gb/s	2.5" 15mmT	Thin SATA	SM825	32nm 32Gb E-MLC	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-506BB

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 24X	H/H	Tray	X	SH-224BB

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-208DB

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	LTI216XM01	21.6"	960x960	Super narrow	D-LED	450 nits	4000:1	8ms	60Hz	Aug. 2012		
	LTI460HN03	46"	FHD	Narrow + Black	CCFL	1500 nits	3,000:1	8ms	60Hz	Now	High Bright, Hi Temp LC, 1/4 Pol.	Yes
	LTI460HN01	46"	FHD	Super narrow	D-LED	700 nits	3,000:1	8ms	60Hz	Now	5.7mm Active to Active	Yes
	LTI460HN07	46"	FHD	Super narrow	D-LED	450 nits	3,000:1	8ms	60Hz	Q3, 2012		
	LTI460AA05	46"	HD	Super narrow	CCFL	450 nits	4,000:1	8ms	60Hz	Ltd Avail.	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	Yes
	LTI550HN04	55"	FHD	Super narrow	D-LED	450 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	40"	FHD	Narrow	CCFL	700 nits	3,000:1	8ms	60Hz	Now		Yes
	LTI400HA08	40"	FHD	Narrow + Black	CCFL	700 nits	3,000:1	8ms	60Hz	Now		Yes
	LTI400HA10	40"	FHD	Narrow	E-LED	700 nits	3500:1	8ms	60Hz	Oct. 2012		
	LTI460HN05	46"	FHD	Narrow + Black	CCFL	700 nits	3,500:1	8ms	60Hz	Now		Yes
	LTI550HN03	55"	FHD	Narrow	CCFL	700 nits	4,000:1	8ms	60Hz	Now		Yes
	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		Yes
	LTI460HN04	46"	FHD	Normal	CCFL	450 nits	3,000:1	8ms	60Hz	Now		Yes
	LTI550HN02	55"	FHD	Normal	CCFL	450 nits	3,500:1	8ms	60Hz	Now		Yes
	LTI700HA01	70"	FHD	Normal	CCFL	450 nits	2,000:1	8ms	60Hz	Now	E-Board; Landscape mode only	
	LTI700HA02	70"	FHD	Normal	E-LED	400 nits	4,000:1	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	LVDS Input	

TABLETS

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

MONITORS

Size	PN	Mode	Resolution	H(RGB)	V	Aspect Ratio	PPI	Brightness (nits)	MP
19"	LTM190BT07	TN	WXGA+	1440	900	16:9	96	250	Ltd Avail.
20"	LTM200KT03	TN	HD+	1600	900	16:09	92	250	Ltd Avail.
	LTM200KT10	TN	HD+	1600	900	16:09	92	250	Now
21.5"	LTM215HT04	TN	FHD	1920	1080	16:9	103	250	Ltd Avail.
22"	LTM220MT05	TN	WSXGA+	1680	1050	16:10	90	250	Ltd Avail.
	LTM220MT09	TN	WSXGA+	1680	1050	16:10	90	250	Now
23"	LTM230HT10	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	16:10	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

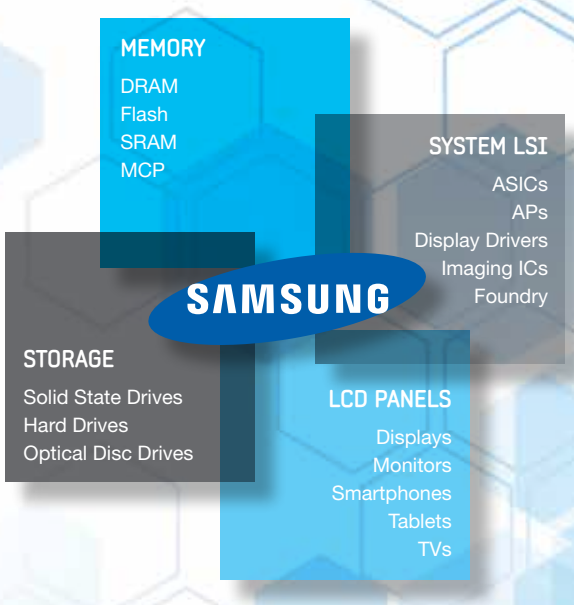
Name	Location	Phone
Adelsa	Ciudad Juarez	52-656-613-3517
Adelsa	Monterrey	52-818-214-0011
Adelsa	Mexico City (HQ)	52-555-560-5002
Adelsa	Guadalajara	52-333-122-3054
ATMI	Washington	425-869-7636
ATMI	Oregon	503-643-8307
Bear/VAI	Ohio	440-526-1991
Bear/VAI	Western PA	440-526-1991
Bear/VAI	Indiana/Kentucky	440-832-7637
Bear/VAI	Michigan	440-526-1991
Bestronics	San Diego	858-673-4300
Core	Illinois	847-843-8888
Core	Wisconsin	414-791-1666
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

Name	Location	Phone
Infinity Sales	Los Angeles	818-880-6480
Infinity Sales	Orange County	714-669-8520
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	905-275-3516
New Tech Solutions	Massachusetts	781-229-8888
New Tech Solutions	CT/NY	585-204-2183
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	512-538-2810

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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