



Samsung Semiconductor, Inc.
Product Selection Guide

Memory and Storage
January 2009



DRAM	Pages 4-14	
www.samsung.com/semi/dram <ul style="list-style-type: none"> • DDR3 SDRAM • DDR2 SDRAM • DDR • SDRAM • Mobile SDRAM • RDRAM 	<ul style="list-style-type: none"> • Graphics DDR SDRAM • DRAM Ordering Information • OneDRAM™: see Fusion 	DRAM

FLASH	Pages 15-19	
www.samsung.com/semi/flash <ul style="list-style-type: none"> • SLC Flash • MLC Flash • SD and microSD Cards • Flash Product Ordering Information • Solid State Drive: see Storage 	<ul style="list-style-type: none"> • OneNAND™: see Fusion • moviNAND™: see Fusion • Flex-OneNAND™: see Fusion 	FLASH

SRAM	Pages 20 -25	
www.samsung.com/semi/sram <ul style="list-style-type: none"> • UtRAM • Asynchronous SRAM • NtRAM • Late-write R-R SRAM • DDR / II / II+ SRAM • QDR / II / II+ SRAM 	<ul style="list-style-type: none"> • Synchronous SRAM Ordering Information 	SRAM

MULTI-CHIP PACKAGE	Pages 26-27	
www.samsung.com/semi/mcp <ul style="list-style-type: none"> • NAND/DRAM • OneNAND/DRAM • Flex-OneNAND/DRAM • OneNAND/DRAM/OneDRAM • moviNAND/NAND/DRAM 	<ul style="list-style-type: none"> • NOR/UtRAM • NOR/DRAM • OneDRAM/OneNAND/NAND 	MCP

FUSION MEMORY	Page 28	
FUSION MEMORY www.samsung.com/semi/fusion <ul style="list-style-type: none"> • OneNAND™ • Flex-OneNAND™ • moviNAND™ • OneDRAM™ 		FUSION

STORAGE	Pages 29-33	
Solid State Drives www.samsungssd.com <ul style="list-style-type: none"> • Flash Solid State Drives Hard Disk Drives www.samsung.com/hdd <ul style="list-style-type: none"> • Hard Disk Drives 	Optical Disk Drives www.samsungodd.com <ul style="list-style-type: none"> • External DVD • Internal DVD • Internal COMBO • Internal CD 	STORAGE

SLC NAND FLASH

Family	Density	Tech	Part Number	Package Type	Org.	Vol(V)	MOQ		Remarks
							Tray	T/R	
							-xxxx0xx	-xxx0Txx	
8Gb Based 4KB/page	64Gb DSP	51nm	K9NCG08U5M-PCB0	TSOP1	x8	3.3	960	1,000	
	32Gb QDP		K9WBG08U1M-PCB0	TSOP1	x8	3.3	960	1,000	
			K9WBG08U1M-PIB0	TSOP1	x8	3.3	960	1,000	
			K9KAG08U0M-PCB0	TSOP1	x8	3.3	960	1,000	
	16Gb DDP		K9KAG08U0M-PIB0	TSOP1	x8	3.3	960	1,000	
			K9F8G08U0M-PCB0	TSOP1	x8	3.3	960	1,000	
	8G mono		K9F8G08U0M-PIB0	TSOP1	x8	3.3	960	1,000	
4Gb Based 2KB/page	16Gb QDP	63nm	K9WAG08U1A-PCB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9WAG08U1B-PCB0000; A-die EOL:LTBO due Dec'08
			K9WAG08U1A-PIB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9WAG08U1B-PIB0000; A-die EOL: LTBO due Dec'08
			K9WAG08U1A-IIB0	ULGA	x8	3.3	960	2,000	A-die EOL: LTBO due Dec'08
		59nm	K9WAG08U1B-PCB0	TSOP1	x8	3.3	960	1,000	
			K9WAG08U1B-PIB0	TSOP1	x8	3.3	960	1,000	
			K9WAG08U1B-KIB0	ULGA HF & LF	x8	3.3	960	2,000	
	8Gb DDP	63nm	K9K8G08U0A-PCB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9K8G08U0B-PCB0000; A-die EOL: LTBO due Dec'08
			K9K8G08U0A-PIB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9K8G08U0B-PIB0000; A-die EOL: LTBO due Dec'08
			K9K8G08U1A-IIB0	ULGA	x8	3.3	960	2,000	A-die EOL/LTBO due Dec'08
		59nm	K9K8G08U0B-PCB0	TSOP1	x8	3.3	960	1,000	
			K9K8G08U0B-PIB0	TSOP1	x8	3.3	960	1,000	
			K9K8G08U1B-KIB0	ULGA HF & LF	x8	3.3	960	2,000	
	4Gb	63nm	K9F4G08U0A-PCB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9F4G08U0B-PCB0000; A-die EOL: LTBO due Dec'08
			K9F4G08U0A-PIB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9F4G08U0B-PIB0000; A-die EOL: LTBO due Dec'08
			K9F4G08U0A-IIB0	ULGA	x8	3.3	960	2,000	A-die EOL: LTBO due Dec'08
		59nm	K9F4G08U0B-PCB0	TSOP1	x8	3.3	960	1,000	
			K9F4G08U0B-PIB0	TSOP1	x8	3.3	960	1,000	
			K9F4G08U0B-KIB0	ULGA HF & LF	x8	3.3	960	2,000	
2Gb	2Gb	63nm	K9F2G08U0A-PCB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9F2G08U0B-PCB0000; A-die EOL: LTBO due Dec'08
			K9F2G08U0A-PIB0	TSOP1	x8	3.3	960	1,000	qualify 59nm B-die: K9F2G08U0B-PIB0000; A-die EOL: LTBO due Dec'08
		59nm	K9F2G08U0B-PCB0	TSOP1	x8	3.3	960	1,000	
			K9F2G08U0B-PIB0	TSOP1	x8	3.3	960	1,000	
1Gb	1Gb	63nm	K9F1G08U0B-PCB0	TSOP1	x8	3.3	960	1,000	59nm C-die coming Oct'08: K9F1G08U0C- PCB0000; B-die EOL: LTBO due Mar'09
			K9F1G08U0B-PIB0	TSOP1	x8	3.3	960	1,000	59nm C-die coming Oct'08: K9F1G08U0C- PIB0000; B-die EOL: LTBO due Mar'09
			K9F1G08R0B-JIB0	63 FBGA(9.5x12)	x8	1.8	1,120	2,000	1.8v B-die supported through 2009
		59nm	K9F1G08U0C-PCB0	TSOP1	x8	3.3	960	1,000	
			K9F1G08U0C-PIB0	TSOP1	x8	3.3	960	1,000	
512Mb	512Mb	63nm	K9F1208U0C-PCB0	TSOP1	x8	3.3	960	1,000	
			K9F1208U0C-PIB0	TSOP1	x8	3.3	960	1,000	
			K9F1208R0C-JIB0	63 FBGA(8.5x13)	x8	1.8	1,120	2,000	
			K9F1208U0C-JIB0	63 FBGA(8.5x13)	x8	3.3	1,120	2,000	
256Mb	256Mb	90nm	K9F5608U0D-PCB0	TSOP1	x8	3.3	960	1,000	
			K9F5608U0D-PIB0	TSOP1	x8	3.3	1,000	1,000	
			K9F5608R0D-JIB0	63 FBGA(9x11)	x8	1.8	1,280	2,000	
			K9F5608U0D-JIB0	63 FBGA(9x11)		3.3	1,280	2,000	

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)