



Samsung Semiconductor, Inc.
Product Selection Guide

September 2006

MEMORY AND STORAGE

SECTION A	PAGE
DRAM	
DDR3 SDRAM	3a
DDR2 SDRAM	3a-4a
DDR SDRAM	4a-5a
SDRAM	6a-7a
RDRAM	7a
MOBILE SDRAM	8a
GRAPHICS DDR SDRAM	8a
DRAM ORDERING INFORMATION	9a-11a
FLASH	
NAND, OneNAND, NOR FLASH	12a
NAND FLASH ORDERING INFORMATION	13a
ASYNCHRONOUS SRAM	
LOW-POWER SRAM	14a
LOW-VOLTAGE AND LOW-POWER SRAM	14a
MICRO-POWER AND LOW-VOLTAGE SRAM	14a
HIGH DENSITY, LOW POWER (UtRAM)	15a
HIGH-SPEED ASYNCHRONOUS FAST SRAM	15a
ASYNCHRONOUS SRAM ORDERING INFORMATION	16a
SYNCHRONOUS SRAM	
SPB & FT SRAM	17a-18a
NtRAM	18a-19a
LATE-WRITE R-R SRAM	19a-20a
DDR / II / II+ SRAM	20a-22a
QDR / II / II+ SRAM	22a-23a
SYNCHRONOUS SRAM ORDERING INFORMATION	24a
MULTI-CHIP PACKAGE	
NAND/DRAM	25a
NOR/SRAM and NOR/UtRAM	26a
OneNAND/DRAM	26a
NOR/DRAM	26a
STORAGE	
HARD DISK DRIVES	27a
OPTICAL STORAGE SOLUTIONS	28a-29a

SYSTEM LSI

SECTION B	PAGE
ASICs	3b – 5b
ASIC ORDERING INFORMATION	6b
LCD DRIVER ICs	7b – 8b
LCD DRIVER IC ORDERING INFORMATION	9b
MOBILE APPLICATION PROCESSORS	10b
CMOS IMAGE SENSORS	10b
MICROCONTROLLERS	11b-14b
MICROCONTROLLER ORDERING INFORMATION	15b
SERIAL EPROMS	16b

TFT-LCD

SECTION C	PAGE
MONITOR/INDUSTRIAL LCD PANELS	
15", 17"	3c
19"	3c
20.1", 21.3"	4c
22.0", 23.0", 24.0", 30.0"	4c
LCD TV/A.V.	
HD 23", 26", 32", 40", 46"	5c
FULL HD 40", 46", 52", 57"	5c
MOBILE PHONES	
MAIN DISPLAYS	6c
MAIN + EXTERNAL DISPLAYS	6c
INFORMATION DISPLAYS	
40", 46", 57", 82"	7c
DIGITAL IMAGING: ENTERTAINMENT	
DSC/DVC/PHOTO PRINTERS/PMP/VOIP/GAMES	8c
MOBILE AV	
MINI PCS/CNS/CAR TVS/P-DVDS/ INDUSTRIAL APPLICATIONS	9c

DDR3 SDRAM UNBUFFERED MODULES

Density	Org	Speed (Mbps)	Part Number	Rank	Composition	Package
256MB	32Mx64	800/1066/1333	M378B3374EZO-C(E7/F8/G9)	1	512Mb(32M x16) * 4	RoHS
512MB	64Mx64	800/1066/1333	M378B6573EZO-C(E7/F8/G9)	1	512Mb(64M x8) * 8	RoHS
512MB	64Mx64	800/1066/1333	M378B6474CZO-C(E7/F8/G9)	1	1Gb(64M x16) * 4	RoHS
1GB	128Mx64	800/1066/1333	M378B2973EZO-C(E7/F8/G9)	2	512Mb(64M x8) * 16	RoHS
1GB	128Mx64	800/1066/1333	M378B2873CZO-C(E7/F8/G9)	1	1Gb(128M x8) * 8	RoHS
2GB	256Mx64	800/1066/1333	M378B5673CZO-C(E7/F8/G9)	2	1Gb(128M x8) * 16	RoHS

NOTES: E7=DDR3-800 (5-5-5)

F8 = DDR3-1066 (7-7-7)

G9=DDR3-1333 (8-8-8)

Voltage: 1.5V

DDR3 SDRAM COMPONENTS

Density	Org	Speed (Mbps)	Part Number	Package	Package Dimension
512Mb	128M x4	800/1066/1333	K4B510446E-ZC(E7/F8/G9)	82ball FBGA	10x11.5mm
512Mb	64M x8	800/1066/1333	K4B510846E-ZC(E7/F8/G9)	82ball FBGA	10x11.5mm
512Mb	32M x16	800/1066/1333	K4B511646E-ZC(E7/F8/G9)	100ball FBGA	10x11.5mm
1Gb	256M x4	800/1066/1333	K4B1G0446C-ZC(E7/F8/G9)	94ball FBGA	11x18mm
1Gb	128M x8	800/1066/1333	K4B1G0846C-ZC(E7/F8/G9)	94ball FBGA	11x18mm
1Gb	64M x16	800/1066/1333	K4B1G1646C-ZC(E7/F8/G9)	112ball FBGA	11x18mm

NOTES: E7=DDR3-800 (5-5-5)

F8 = DDR3-1066 (7-7-7)

G9=DDR3-1333 (8-8-8)

Voltage: 1.5V

DDR2 SDRAM REGISTERED MODULES

Density	Org	Speed (Mbps)	Part Number	Parity			
				Register	Rank	Composition	Package
512MB	64Mx72	400/533	M393T6553CZ3-C(CC/D5)	N	1	(64M x8)*9	Lead-free
512MB	64Mx72	400/533/667	M393T6553CZA-C(CC/D5/E6)	Y	1	(64M x8)*9	Lead-free
1GB	128Mx72	400/533	M393T2950CZ3-C(CC/D5)	N	1	(128M x4)*18	Lead-free
1GB	128Mx72	400/533	M393T2953CZ3-C(CC/D5)	N	2	(64M x8)*18	Lead-free
1GB	128Mx72	400/533/667	M393T2950CZA-C(CC/D5/E6)	Y	1	(128M x4)*18	Lead-free
1GB	128Mx72	400/533/667	M393T2953CZA-C(CC/D5/E6)	Y	2	(64M x8)*18	Lead-free
2GB	256Mx72	400/533	M393T5750CZ3-C(CC/D5)	N	2	(128M x4)*36	Lead-free
2GB	256Mx72	400/533	M393T5660AZ3-C(CC/D5)	N	1	(256M x4)*18	Lead-free
2GB	256Mx72	400/533	M393T5663AZ3-C(CC/D5)	N	2	(128M x8)*18	Lead-free
2GB	256Mx72	400/533/667	M393T5750CZA-C(CC/D5/E6)	Y	2	(128M x4)*36	Lead-free
2GB	256Mx72	400/533/667	M393T5660AZA-C(CC/D5/E6)	Y	1	(256M x4)*18	Lead-free
2GB	256Mx72	400/533/667	M393T5663AZA-C(CC/D5/E6)	Y	2	(128M x8)*18	Lead-free
4GB	512Mx72	400/533	M393T5168AZ0-C(CC/D5)	N	2	st. (512M x4)*18	Lead-free
4GB	512Mx72	400/533/667	M393T5166AZA-C(CC/D5/E6)	Y	2	st. (512M x4)*18	Lead-free

NOTES: 00=Intel AMB

01=IDT AMB

Voltage for AMB:1.5V

Voltage for DRAM:1.8V

Module Height=1.2"

DDR2 SDRAM FULLY BUFFERED MODULES

Density	Org	Speed (Mbps)	Part Number	Rank	Composition	Package
512MB	64Mx72	533	M395T6553CZ4-CD5(00/10)	1	(64M x8)*9	Lead-free
512MB	64Mx72	667	M395T6553CZ4-CE6(00/10)	1	(64M x8)*9	Lead-free
1GB	128Mx72	533	M395T2953CZ4-CD5(00/10)	2	(64M x8)*18	Lead-free
1GB	128Mx72	667	M395T2953CZ4-CE6(00/10)	2	(64M x8)*18	Lead-free
2GB	256Mx72	533	M395T5750CZ4-CD5(00/10)	2	(128M x4)*36	Lead-free
2GB	256Mx72	667	M395T5750CZ4-CE6(00/10)	2	(128M x4)*36	Lead-free
4GB	512Mx72	533	M395T5166AZ4-CD5(00/10)	2	st. (512M x4)*18	Lead-free
4GB	512Mx72	533	M395T5166AZ4-CE6(00/10)	2	st. (512M x4)*18	Lead-free

NOTES: 00=Intel AMB

01=IDT AMB

Voltage for AMB:1.5V

Voltage for DRAM:1.8V Module Height=1.2"

DDR2 DRAM SODIMM MODULES

Density	Org	Speed (Mbps)	Part Number	Rank	Composition	Package
256MB	32Mx64	400/533/667	M470T3354CZ3-C(CC/D5/E6)	1	(32M x16)*4	Lead-free
512MB	64Mx64	400/533/667	M470T6554CZ3-C(CC/D5/E6)	2	(32M x16)*8	Lead-free
1GB	128Mx64	400/533/667	M470T2953CZ3-C(CC/D5/E6)	2	(64M x8)*16	Lead-free
1GB	128Mx64	400/533/667	M470T2864AZ3-C(CC/D5/E6)	2	(64M x16)*8	Lead-free
2GB	256Mx64	400/533/667	M470T5669AZ0-C(CC/D5/E6)	2	st.(256M x8)*8	Lead-free

NOTES: CC=PC2-3200 (DDR2-400 @ CL=3) D5 =PC2-4200 (DDR2-533 @ CL=4) E6=PC2-5300 (DDR2-667 @ CL=5) Voltage: 1.8V Module Height=1.2"

DDR2 SDRAM UNBUFFERED MODULES

Density	Org	Speed (Mbps)	Part Number	Rank	Composition	Package
256MB	32Mx64	400/533/667/800	M378T3354CZ3-C(CC/D5/E6/E7)	1	(32M x16)*4	Lead-free
512MB	64Mx64	400/533/667/800	M378T6553CZ3-C(CC/D5/E6/E7)	1	(64M x8)*8	Lead-free
1GB	128Mx64	400/533/667/800	M378T2953CZ3-C(CC/D5/E6/E7)	2	(64M x8)*16	Lead-free
2GB	256Mx64	400/533/667	M378T5663AZ3-C(CC/D5/E6)	2	(128M x8)*16	Lead-free

NOTES: CC=PC2-3200 (DDR2-400 @ CL=3) D5 = PC2-4200 (DDR2-533 @ CL=4) E6=PC2-5300 (DDR2-667 @ CL=5) E7=PC2-6400 (DDR2-800 @ CL=5) Voltage: 1.8V Module Height =1.2"

DDR2 SDRAM COMPONENTS

Density	Org	Speed (Mbps)	Part Number	Package	Dimension
512Mb	128M x4	400/533/667	K4T51043QC-ZC(CC/D5/E6)	60ball FBGA	10x11mm
512Mb	64M x8	400/533/667/800	K4T51083QC-ZC(CC/D5/E6/E7)	60ball FBGA	10x11mm
512Mb	32M x16	400/533/667	K4T51163QC-ZC(CC/D5/E6)	84ball FBGA	11x13mm
1Gb	256M x4	400/533/667	K4T1G044QA-ZC(CC/D5/E6)	68ball FBGA	11x18mm
1Gb	128M x8	400/533/667	K4T1G084QA-ZC(CC/D5/E6)	68ball FBGA	11x18mm
1Gb	64M x16	400/533/667	K4T1G164QA-ZC(CC/D5/E6)	84ball FBGA	11x18mm

NOTES: CC=DDR2-400 (3-3-3) D5 = DDR2-533 (4-4-4) E6=DDR2-667 (5-5-5) E7=DDR2-800 (5-5-5) Voltage: 1.8V

DDR SDRAM 1U DIMM MODULES: REGISTERED

Density	Org	Speed (Mbps)	Composition	Part Number	Component Package	# Banks Module	Notes
512MB	64Mx72	333/400	(64Mx8)*9	M312L6523DZ3 - CB3/CCC	FBGA	1	Pb-free
512MB	64Mx72	333/400	(64Mx8)*9	M312L6523CZ3 - CB3/CCC	FBGA	1	Pb-free
1GB	128Mx72	333/400	(128Mx4)*18	M312L2920CZ3 - CB3/CCC	FBGA	1	Pb-free
2GB	256Mx72	266	(St. 256Mx4)*18	M312L5628CU0 - CB0	TSOP	2	Pb-free
2GB	256Mx72	333/400	(128Mx4)*36	M312L5720CZ3-CB3/CCC	FBGA	2	Pb-free
4GB	512Mx72	266/333	(St. 512Mx4)*18	M312L5128AU0-CB0/CB3	TSOP	2	Pb-free
4GB	512Mx72	400	(St. 512Mx4)*18	M312L5128AU1-CCC	TSOP	2	Pb-free

NOTES: B0 = DDR266 (133MHz @ CL=2.5) Type: 184-pin A2 = DDR266 (133MHz @ CL=2) B3 = DDR333 (166MHz @ CL=2.5) CC = DDR400 (200MHz @ CL=3)

DDR DRAM SODIMM MODULES

Density	Org	Speed (Mbps)	Composition	Part Number	Notes
512MB	64Mx64	333	(32M x 16)*4	M470L3224CU0 -C(L)B3	Pb-free
512MB	64Mx64	333	(32M x 16)*4	M470L6524DU0-CB300	Pb-free
1GB	128MX64	333	(64M x 8)*16	M470L2923BNO - C(L)B3	
1GB	128MX64	333	(64M x 8)*16	M470L2923DVO-CB300	Pb-free

NOTES: B0 = DDR266 (133MHz @ CL=2.5)
Type: 200-pin, Double Sided

A2 = DDR266 (133MHz @ Cl=2)
Height(in): 1.25

B3 = DDR333 (166MHz @ CL=2.5)

CC = DDR400 (200MHz @ CL=3)

DDR SDRAM DIMM MODULES: UNBUFFERED

Density	Org	Speed (Mbps)	Composition	Part Number	Notes
512MB	64MX64	333/400	(64M x 8) *8	M368L6523CUS-CB3/CCC	Pb-free
512MB	64MX64	333/400	(64M x 8) *8	M368L6523DUS-CB3/CCC	Pb-free
512MB	64Mx72	333/400	(64M x 8) *9	M381L6523CUM-CB3/CCC	Pb-free
512MB	64Mx72	333/400	(64M x 8) *9	M381L6523DUM-CB3/CCC	Pb-free
1GB	128Mx64	333/400	(64M x 8) *16	M368L2923CUN-B3/CCC	Pb-free
1GB	128Mx64	333/400	(64M x 8) *16	M368L2923DUN-CB3/CCC	Pb-free
1GB	128Mx72	333/400	(64M x 8) *18	M381L2923CUM-CB3/CCC	Pb-free
1GB	128Mx72	333/400	(64M x 8) *18	M381L2923DUM-CB3/CCC	Pb-free

NOTES: B0 = DDR266 (133MHz @ CL=2.5)
Type: 184-pin

A2 = DDR266 (133MHz @ Cl=2)
Package: TSOP components

B3 = DDR333 (166MHz @ CL=2.5)
Voltage: 2.5V

CC = DDR400 (200MHz @ CL=3)

DDR SDRAM COMPONENTS

Density	Org	Speed (Mbps)	Part Number	Package	Notes
256M	64Mx4	266	K4H560438H-UC(L)B0	66 pin TSOP	Pb-free
256M	64Mx4	333/400	K4H560438H-ZC(L)CC/B3	60 ball FBGA	Pb-free
256M	32Mx8	333/400	K4H560838H-UC(L)B3/CCC	66 pin TSOP	Pb-free
256M	32Mx8	333/400	K4H560838H-ZC(L)B3/CCC	60 ball FBGA	Pb-free
256M	16Mx16	333/400	K4H561638H-UC(L)B3/CCC	66 pin TSOP	Pb-free
256M	16Mx16	333/400	K4H561638H-ZC(L)B3/CCC	60 ball FBGA	Pb-free
512M	128Mx4	266	K4H510438C-UC(L)B0	66 pin TSOP	Pb-free
512M	128Mx4	266	K4H510438D-UC(L)B0	66 pin TSOP	Pb-free
512M	128Mx4	333/400	K4H510438C-ZC(L)B3/CCC	60 ball FBGA	Pb-free
512M	128Mx4	333/400	K4H510438D-ZC(L)B3/CCC	60 ball FBGA	Pb-free
512M	64Mx8	266/333/400	K4H510838C-UC(L)B0/B3/CCC	66 pin TSOP	Pb-free
512M	64Mx8	333/400	K4H510838C-ZC(L)B3/CCC	60 ball FBGA	Pb-free
512M	64Mx8	333/400	K4H510838D-UC(L)B3/CCC	66 pin TSOP	Pb-free
512M	32Mx16	333/400	K4H511638C-UC(L)B3/CCC	66 pin TSOP	Pb-free
512M	32Mx16	333/400	K4H511638C-ZC(L)B3/CCC	60 ball FBGA	Pb-free
512M	32Mx16	333/400	K4H511638D-UC(L)B3/CCC	66 pin TSOP	Pb-free
1Gb	256Mx4	266/333/400	K4H1G0438A-UCB0/B3/CCC	66 pin TSOP	Pb-free
1Gb	128Mx8	266/333/400	K4H1G0838A-UCB0/B3/CCC	66 pin TSOP	Pb-free
2Gb	25MX4 *2	333	K4H2G0638A-UCB3000	66 pin TSOP	Pb-free

NOTES: B0 = DDR266 (133MHz @ CL=2.5)

A2 = DDR266 (133MHz @ Cl=2)

B3 = DDR333 (166MHz @ CL=2.5)

CC = DDR400 (200MHz @ CL=3)

1U SDRAM DIMM MODULES, PC133 / PC100 COMPLIANT: REGISTERED

LOW-PROFILE DIMMs (1.2-INCH HEIGHT)

Density	Org	Speed	Composition	Part Number	# Banks		Comments
					Module	Refresh	
128MB**	16Mx72	PC133	(16x8)*9	M390S1723ITU - C7A00	1	8K	
256MB	32Mx72	PC133	(32Mx8)*9	M390S3253HUU - C7A00	1	8K	
512MB	64Mx72	PC133	(64Mx4)*18	M390S6450HUU - C7A00	2	8K	stacked
1GB	128Mx72	PC133	(St.128Mx4)*18	M390S2858ETU - C7A00	2	8K	
1GB	128Mx72	PC133	(128Mx4)*18	M390S2950DUU - C7A00	2	8K	
2GB	256Mx72	PC133	(St.128Mx4)*18	M390S5658DUU - C7A00	2		

NOTES: St. = Stacked components

Type: 168 pin, Double sided

Package: TSOP Components

Voltage: 3.3V

**Die rev. change - 128Mb component F-die to I-die

stacked, avail Q204

SDRAM SODIMM MODULES

Density	Org	Speed	Composition	Part Number	Height	# Banks
					(in)	Module
128MB**	16Mx64	PC133	(8Mx16)*8	M464S1724ITS-L7A00	1.15	1
256MB	32Mx64	PC133	(16Mx16)*8	M464S3254HUS-L7A00	1.25	1
256MB	32Mx64	PC133	(32Mx16)*4	M464S3354DUS-C(L)7A	1.25	1
512MB	64Mx64	PC133	(32Mx16)*8	M464S6554DUS-C(L)7A	1.18	1
512MB	64Mx64	PC133	(64Mx8)*16	M464S6453HV0-C75/L7500	1.25	2

NOTES: DS = Double-Sided

L = Commercial Temp., Low Power

Interface: SSTL-2

Banks: 4

Latency: CL6

Refresh: 8K/32ms

** Die rev. change - 128Mb component F-die to I-die

SDRAM DIMM MODULES, PC133 COMPLIANT: UNBUFFERED

Density	Org	Speed (Mbps)	Composition	Part Number	# Banks
					Module
128MB**	16Mx64	PC133	128M: (16Mx8)*8	M366S1723ITS-C7A00	1
128MB	16Mx64	PC133	256M: (16Mx16)*4	M366S1654HUS-C7A00	1
128MB**	16Mx72	PC133	128M: (16Mx8)*9	M374S1723ITS-C7A00	1
128MB	16Mx72	PC133	256M: (16Mx16)*5	M374S1654ETS- C7A00	1
128MB**	32Mx64	PC133	128M: (16Mx8)*16	M366S3323ITS- C7A00	2
128MB**	32Mx72	PC133	128M: (16Mx8)*18	M374S3323ITS-C7A00	2
256MB	32Mx64	PC133	256M: (32Mx8)*8	M366S3253HUS-C7A00	1
256MB	32Mx64	PC133	256M: (16Mx16)*8	M366S3254HUS-C7A00	1
256MB	32Mx64	PC133	256M: (32Mx8)*8	M366S3253US-C7A00	1
512MB	64Mx64	PC133	256M: (32Mx8)*16	M366S6453HUS-C7A00	2
1GB	128Mx64	PC133	512M: (64Mx8)*16	M366S2953DUS-C7A00	2

NOTES: Type: 168 pin

Package: TSOP components

Voltage: 3.3V

**Die rev. change - 128Mb component F-die to I-die

SDRAM COMPONENTS

Density	Org	Speed (Mbps)	Part Number	Refresh	Pkg TSOP	Comments
64Mb**	8Mx8	133	K4S640832K-UC(75)000	4K	54	
64Mb**	4Mx16	133/143/166	K4S641632K-UC(L)(75/70/60)000	4K	54	
64Mb**	2Mx32	143/166/200	K4S643232H-UC(70/60/50)000	4K	86	
128Mb**	16Mx8	133	K4S280832I-UC(L)(75)000	4K	54	
128Mb**	8Mx16	133/166	K4S281632I-UC(L)(75/60)000	4K	54	
256Mb	64Mx4	133	K4S560432H-UC(L)(75)000	8K	54	
256Mb	32Mx8	133	K4S560832H-UC(L)(75)000	8K	54	
256Mb	16Mx16	133/166	K4S561632H-UC(L)(75/60)000	8K	54	
512Mb	128Mx4	133	K4S510632D-UC(L)(75)000	8K	54	stacked
512Mb	64Mx8	133	K4S510732D-UC(L)(75)000	8K	54	stacked
512Mb	128Mx4	133	K4S510432D-UC(L)(75)000	8K	54	
512Mb	64Mx8	133	K4S510832D-UC(L)(75)000	8K	54	
512Mb	32Mx16	133	K4S511632D-UC(L)(75)000	8K	54	
1Gb	256Mx4	133	K4S1G0632D-UC(L)(75)000	8K	54	stacked

NOTES:

1 L = Commercial Temp., Low Power
 2 # Banks: 4
 3 Package: TC = TSOP; UC = Lead Free

4 Voltage: 3.3V
 5 Speed: PC133 (133MHz CL=3/PC100 CL2)
 6 For Ind. Temp., check with SSI Marketing

* In EOL process
 ** Die rev. change - 64Mb H-die to K-die, 128Mb F-die to I-die

RDRAM COMPONENTS

Density	Org	Speed (Mbps)	Part Number	Refresh	Package	Notes
128M	x16	800/1066	K4R271669F-SCK8/S8	16K/32ms	54ball FBGA	
288M	x18	800/1066	K4R881869E-GCM8/T9	16K/32ms	92ball FBGA	lead-free only
576M*	x18	1066	K4R761869A-GCT9	32K/32ms	92ball FBGA	lead-free only

NOTES: Voltage: 2.5 v

* In EOL Process

RIMM™ MODULES

Density	Org	Speed (Mbps)	# of Devices	Part Number	Component	Comments
128MB ECC	x18	800/1066Mbps	4	MR18R1624EG0-CM8/T9	288Mb	lead-free only
256MB ECC	x18	800/1066Mbps	8	MR18R1628EG0-CM8/T9	288Mb	lead-free only
512MB ECC	x18	800/1066Mbps	16	MR18R162GEG0-CM8/T9	288Mb	lead-free only
128MB NON-ECC	x16	800/1066Mbps	4	MR16R1624EG0-CM8/T9	256Mb	lead-free only
256MB NON-ECC	x16	800/1066Mbps	8	MR16R1628EG0-CM8/T9	256Mb	lead-free only
512MB NON-ECC	x16	800/1066Mbps	16	MR16R162GEG0-CM8/T9	512Mb	lead-free only
144MB NexMod	x18	800/1066Mbps	4	MN18R1624EF0-CT9	288Mb	lead-free only
288MB NexMod	x18	800/1066Mbps	8	MN18R1628EF0-CT9	288Mb	lead-free only
576MB NexMod *	x18	800/1066Mbps	8	MN18R3268AEF0-CT9	576Mb	lead-free only

NOTES: * In EOL Process

MOBILE SDRAM COMPONENTS

Density	Org	Part Number	Refresh	Power	# Pins
					TSOP/BGA
64Mb	4Mx16	K4M641633K-(1)(2)(3)(4)	4K	3.0V	FBGA-54balls
64Mb	4Mx16	K4M64163LK-(1)(2)(3)(4)	4K	2.5V	FBGA-54balls
64Mb	4Mx16	K4M64163PK-(1)(2)(3)(4)	4K	1.8V	FBGA-54balls
64Mb	2MX32	K4S643233H-(1)(2)(3)(4)	4K	3.0V	FBGA-90balls
64Mb	2MX32	K4S64323LH-(1)(2)(3)(4)	4K	2.5V	FBGA-90balls
128Mb	8MX16	K4M281633H-(1)(2)(3)(4)	4K	3.0V	FBGA-54balls
128Mb	8MX16	K4M28163LH-(1)(2)(3)(4)	4K	2.5V	FBGA-54balls
128Mb	8MX16	K4M28163PH-(1)(2)(3)(4)	4K	1.8V	FBGA-54balls
128Mb	4MX32	K4M283233H-(1)(2)(3)(4)	4K	3.0V	FBGA-90balls
128Mb	4MX32	K4M28323LH-(1)(2)(3)(4)	4K	2.5V	FBGA-90balls
128Mb	4MX32	K4M28323PH-(1)(2)(3)(4)	4K	1.8V	FBGA-90balls
256Mb	16Mx16	K4M561633G-(1)(2)(3)(4)	8K	3.0V	FBGA-54balls
256Mb	16Mx16	K4M56163LG-(1)(2)(3)(4)	8K	2.5V	FBGA-54balls
256Mb	16Mx16	K4M56163PG-(1)(2)(3)(4)	8K	1.8V	FBGA-54balls
256Mb	16Mx16	K4X56163PG-(1)(2)(3)(4)	8K	1.8V	FBGA-60balls
256Mb	8Mx32	K4M563233G-(1)(2)(3)(4)	8K	3.0V	FBGA-90balls
256Mb	8Mx32	K4M56323LG-(1)(2)(3)(4)	8K	2.5V	FBGA-90balls
256Mb	8Mx32	K4M56323PG-(1)(2)(3)(4)	8K	1.8V	FBGA-90balls
256Mb	8Mx32	K4X56323PG-(1)(2)(3)(4)	8K	1.8V	FBGA-90balls
512Mb	32Mx16	K4M511633C-(1)(2)(3)(4)	8K	3.0V	FBGA-54balls
512Mb	32Mx16	K4M51163LC-(1)(2)(3)(4)	8K	2.5V	FBGA-54balls
512Mb	32Mx16	K4M51163PC-(1)(2)(3)(4)	8K	1.8V	FBGA-54balls
512Mb	32Mx16	K4X51163PC-(1)(2)(3)(4)	8K	1.8V	FBGA-60balls
512Mb	16Mx32	K4M513233C-(1)(2)(3)(4)	8K	3.0V	FBGA-90balls
512Mb	16Mx32	K4M51323LC-(1)(2)(3)(4)	8K	2.5V	FBGA-90balls
512Mb	16Mx32	K4M51323PC-(1)(2)(3)(4)	8K	1.8V	FBGA-54balls
512Mb	16Mx32	K4X51323PC-(1)(2)(3)(4)	8K	1.8V	FBGA-54balls

NOTES:

(1) Package: 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

(2) Temp & Power:

C : Commercial(-25 ~ 70°C), Normal

L : 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(-40~85°C), Normal

P : Industrial, Low

H : Industrial, Low, i-TCSR & PASR & DS

(3)-(4) Speed:

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

GRAPHICS DDR SDRAM COMPONENTS

Type	Density	Org	Die	Part Number	Package	VDD/VDDQ	Speed Bin (MHz)	Remarks
GDDR4	512Mb	16Mx32	E	K4U52324Q	136 FBGA	1.8/1.8V	1100/1200/1400	CS now
GDDR3	512Mb	16Mx32	C	K4J52324Q	136 FBGA	1.8/1.8V	500/600/700	EOL'd
					136 FBGA	2.0/2.0V	800/900/1000	EOL'd
	512Mb	16Mx32	E	K4J52324Q	136 FBGA	1.8/1.8V	700/800	CS now
					136 FBGA	1.9/1.9V	900/1000	CS now
	256Mb	8Mx32	G	K4J55323Q	136 FBGA	1.8/1.8V	700/800	
					136 FBGA	2.0/2.0V	900/1000	
GDDR2	512Mb	32Mx16	C	K4N51163Q	84 FBGA	1.8/1.8V	300/350/400	
	256Mb	16Mx16	G	K4N56163Q	84 FBGA	1.8/1.8V	350/400	
					84 FBGA	2.0/2.0V	450/500	
GDDR1	256Mb	16Mx16	H	K4D551638	66 TSOPII	2.35~2.7V	200/250	
	128Mb	4Mx32	G	K4D26323Q	144 FBGA	1.8/1.8V	300/350	EOL'd
				K4D263238	144 FBGA	2.5/2.5V	300/350	EOL'd
			I	K4D263238	144 FBGA	2.5/2.5V	200/250	
				K4D263238	100 TQFP	2.5/2.5V	200/250	
		8Mx16	I	K4D261638	66 TSOPII	2.5/2.5V	200/250	CL-tRCD-tRP 3-3-3 for 200MHz

NOTES: * clock cycle time

** all products are 4 banks

Part No. Suffix	07	08	09	1A	11	12	14	16	20	22	25	2A	33	40	50
Description	0.71ns (1400MHz)	0.83ns (1200MHz)	0.90ns (1100MHz)	1ns (1000MHz)	1.11ns (900MHz)	1.25ns (800MHz)	1.429ns (700MHz)	1.667ns (600MHz)	2.0 ns (500MHz)	2.2 ns (450MHz)	2.5 ns (400MHz)	2.86 NS (350MHz)	3.3 ns (300MHz)	4.0 ns (250MHz)	5.0 ns (200MHz)

DRAM ORDERING INFORMATION

K	4	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

1. Memory (K)

66: 64M, 8K/64ms

S: SSTL-2, 2.2V, 1.8V

2. DRAM:4

68: 768M, 8K/64ms

U: DRSL, 1.8V, 1.2V

72: 72M, 8K/32ms

Y: SSTL(LP), 2.5V, 2.5V

76: 576M, 32K/32ms

3. Small Classification

A: Advanced Dram Technology

B: DDR3 SDRAM

D: DDR SGRAM

E: EDO

F: FP

H: DDR SDRAM

J: GDDR3 SDRAM

K: Mobile SDRAM PEA

L: Mobile L2RAM

M: Mobile SDRAM

N: DDR SGRAM II

R: Direct RDRAM

S: SDRAM

T: DDR SDRAM II'

U: GDDR4 SDRAM

V: Mobile DDR SDRAM PEA

X: Mobile DDR SDRAM

Y: XDR DRAM

Z: Value Added DRAM

∞ PEA: Power Efficient Address

80: 8M, 2K/32ms

88: 288M, 16K/32ms

89: 288M, 8K/32ms

1G: 1G, 8K/64ms

2G: 2G, 8K/64ms

4G: 4G, 8K/64ms

2A: 128M, 4K/64ms with TCSR

5A: 256M, 8K/64ms with TCSR

6A: 64M, 4K/64ms with TCSR

10. Generation

M: 1st Generation

A: 2nd Generation

B: 3rd Generation

C: 4th Generation

D: 5th Generation

E: 6th Generation

F: 7th Generation

G: 8th Generation

H: 9th Generation

I: 10th Generation

J: 11th Generation

K: 12th Generation

Y: Partial DRAM(2nd)

Z: Partial DRAM (for RAMOSTAK Product)

6~7. Organization

01: x1

02: x2

03: x2
(Including x1)

04: x4

05: x4 (2CS)

06: x4 Stack (Flexframe)

07: x8 Stack (Flexframe)

08: x8

09: x9

15: x16 (2CS)

16: x16

17: x16 (Including x8/ x4)

18: x18

30: x32 (2CS, 2CKE)

31: x32 (2CS)

32: x32 36: x36

A8: x8 Stack (70-mono)

11. "----"

12. Package

- Advanced DRAM Technology

G: WBGA

L: TSOP2-400F(LF)

T: TSOP2 Z: BOC(LF)

- DDR SDRAM

J: TSOP2-400(LF, DDP)

T: TSOP2-400

K: TSOP2-400(DDP)

U: TSOP2-400(LF)

G: BOC, WBGA

Z: BOC(LF)

P: BOC(DDP)

Q: ISM

N: STSOP2

V: STSOP2(LF)

S: POP(DDP)

X: POP(LF, DDP)

- DDR SDRAM II

G: BOC

Z: BOC(LF)

S: BOC(Smaller)

Y: BOC(Smaller, LF)

R: WLP

- DDR3 SDRAM

G: BOC

Z: BOC(LF)

- DDR SGRAM

E: FBGA(LF, DDP)

G : FBGA

J: FBGA(DDP)

V: FBGA(LF)

P: FBGA(LLDDP)

M: FBGA(1DQS)

N: FBGA(1DQS,LF)

H: BOC

L: TSOP2-400(LF)

T: TSOP2-400

Q: TQFP

U: TQFP(LF)

4~5. Density, Refresh

111: 1G, 64K/16ms

15: 16M, 1K/16ms

16: 16M, 2K/32ms

17: 16M, 4K/64ms

26: 128M, 4K/32ms

27: 128M, 16K/32ms

28: 128M, 4K/64ms

32: 32M, 2K/32ms

40: 4M, 512/8ms

41: 4M, 1K/16ms

44: 144M, 16K/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

57: 256M, 16K/32ms

58: 256M, 8K/32ms

62: 64M, 2K/16ms

64: 64M, 4K/64ms

8. Bank

1: 1Bank

2: 2Bank

3: 4Bank

4: 8Bank

5: 16Bank

6: 32Bank

9. Interface, VDD, VDDQ

0: NONE, NONE, NONE

1: TTL, 5.0V, 5.0V

2: LVTTTL, 3.3V, 3.3V

3: LVTTTL, 3.0V, 3.0V

4: LVTTTL, 2.5V, 2.5V

5: SSTL(LP), 1.8V, 1.8V

6: SSTL, 1.5V, 1.5V

7: SSTL-2, 3.3V, 2.5V

8: SSTL-2, 2.5V, 2.5V

9: RSL, 2.5V, 2.5V

A: SSTL, 2.5V, 1.8V

H: SSTL-2 DLL, 3.3V, 2.5V

J: LVTTTL, 3.0V, 1.8V

L: LVTTTL, 2.5V, 1.8V

M: LVTTTL, 1.8V, 1.5V

N: LVTTTL, 1.5V, 1.5V

P: LVTTTL, 1.8V, 1.8V

Q: SSTL, 1.8V, 1.8V

R: SSTL-2, 2.8V, 2.8V

DRAM ORDERING INFORMATION

K	4	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

- EDO & FP (tRAC)

40: 40ns
50: 50ns
45: 45ns
60: 60ns

- Direct RDRAM (tCC, tRAC)

C6: 300MHz, 53.3ns w/ consumer PKG
C8: 400MHz, 45ns w/ consumer PKG
C9: 533MHz, 32ns w/ consumer PKG
G6: 300MHz(3.3ns), 53.3ns
K7: 356MHz(2.8ns), 45ns
K8: 400MHz(2.5ns), 45ns
M8: 400MHz(2.5ns), 40ns
M9: 533MHz(1.9ns), 35ns
N1: 600MHz(1.667ns), 32ns
N9: 533MHz(1.9ns), 32ns
P3: 667Mhz(1.5ns), 31ns
R6: 800Mhz(1.25ns), 27ns
S8: 400MHz, 45ns SC
S9: 533MHz(1.9ns), 35ns SC
T9: 533MHz(1.9ns), 32ns, tDAC 3

DS: Daisychain Sample

*SC (Short channel)

- Mobile SDRAM

15: 15ns@CL2
1L: 10ns@CL3
80: 8ns@CL3
90: 9.0ns@CL3(12ns@CL2)
95: 9.5ns@CL3(12ns@CL2)
DP: Daisychain (PCB)
DS: Daisychain Sample
DY: Daisychain (Sanyo PCB)

- Mobile SDRAM PEA

1L: 10ns@CL3
75: 7.5ns@CL3
90: 9.0ns@CL3(12ns@CL2)

- Mobile DDR SDRAM

C0: 15ns@CL3
C3: 7.5ns@CL3
CA: 9ns@CL3
DP: Daisychain (PCB)
DS: Daisychain
DY: Daisychain (Sanyo PCB)
C2: 10ns@CL3
C6: 6ns@CL3

- Mobile DDR SDRAM PEA

C3: 7.5ns@CL3
CA: 9ns@CL3
C6: 6ns@CL3

- Mobile L2RAM

L0: 100Mhz, CL3
L2: 166Mhz, CL4
L1: 133Mhz, CL3

- SDRAM (tCC: Default CL3)

10: 10ns, PC66
15: 15ns
1H: 10ns@CL2, PC100
33: 3.3ns
45: 4.5ns
55: 5.5ns
60: 6ns
70: 7ns
75: 7.5ns, PC133
7B: 7.5ns PC133, CL3, TRCD2, TRP2
7C: 7.5ns PC133, CL2, TRCD2, TRP2
80: 8ns
96: 9.6ns
DP: Daisychain (PCB)
DS: Daisychain

DY: Daisychain (Sanyo PCB)

< Only SDRAM TPB Code >

S0: 7.0ns BIN
U0: 6.0ns BIN
W0: 8.0ns BIN
T0: 5.5ns BIN
V0: 7.5ns BIN
G0: 5.6ns BIN

- DDR SGRAM (tCC: Default CL3)

20: 2.0ns
22: 2.2ns(450MHz)
30: 3ns
35: 3.5ns
3N 3.32ns(301MHz)
45: 4.5ns
55: 5.5ns
70: 7ns
2B: 2.94ns(340MHz)
5A: 5ns@CL3(TRCD3, TRP3)
21: 2.1ns(475MHz)
25: 2.5ns
33: 3.3ns
36: 3.6ns
40: 4ns
50: 5ns
60: 6ns
2A: 2.86ns(350MHz)
2C: 2.66ns(375MHz)

< Only SDRAM TPB Code >

- DDR SGRAM II

12: 1.25ns
15: 1.5ns (667MHz)
18: 1.818ns
2A: 2.86ns(350MHz)
22: 2.2ns
30: 3.0ns
37: 3.75ns
14: 1.429ns
16: 1.667ns
1K: 1.996ns
20: 2ns
25: 2.5ns
33: 3.3ns

- GDDR3 SDRAM

11: 1.1ns
14: 1.429ns
16: 1.667ns
20: 2.0ns
25: 2.5ns
33: 3.3ns
40: 4.0ns
2A: 2.86ns
12: 1.25ns
15: 1.5ns(667MHz)
18: 1.818ns
22: 2.2ns
30: 3.0ns
36: 3.6ns
1A: 1.0ns

- GDDR4 SDRAM

15: 1.5ns(667MHz)
XDR DRAM
A2: 2.4Gbps, 36ns, 16Cycles
A3: 3.2Gbps, 27ns, 16Cycles
B3: 3.2Gbps, 35ns, 20Cycles
B4: 4.0Gbps, 28ns, 20Cycles
C3: 3.2Gbps, 35ns, 24Cycles
C4: 4.0Gbps, 28ns, 24Cycles
DS: Daisychain Sample
DRAM COMMON
00: NONE

16. Packing Type (16 digit)

Common to all products, except of Mask ROM
Divided into TAPE & REEL(In Mask ROM, divided into TRAY, AMMO Packing Separately)

Type	Packing Type	New Marking
Component	TAPE & REEL	T
	Other (Tray, Tube, Jar)	0 (Number)
	Stack	S
Component	TRAY	Y
(Mask ROM)	AMMO PACKING	A
	Module	MODULE TAPE & REEL
MODULE Other Packing		M

NOTES:

- 1) µgBGA® packages are registered trademarks of Tessera.
- 2) (M): Mirror
- 3) (LF): Lead Free

NAND FLASH DISCRETE COMPONENTS

Density	TSOP	BGA/LGA	Organization	Voltage(V)	Package	Comments
	Part Number	Part Number				
SLC						
256Mb	K9F5608U0D-PCB	K9F5608U0D-JIB	x8	3.3V	48TSOP, 63FBGA	
512Mb	K9F1208U0B-PCB	K9F1208U0B-JIB	x8	3.3V	48TSOP, 63FBGA	Best case for S/B long-term support
1Gb	K9F1G08U0A-PCB	K9F1G08U0A-JIB	x8	3.3V	48TSOP, 63FBGA	Moving to B-die in Q4'06
2Gb	K9F2G08U0A-PCB	K9F2G08U0A-IIB	x8	3.3V	48TSOP, 52ULGA	
4Gb	K9F4G08U0A-PCB	K9F4G08U0A-IIB	x8	3.3V	48TSOP, 52ULGA	
8Gb	K9K8G08U0A-PCB	K9K8G08U0A-IIB	x8	3.3V	48TSOP, 52ULGA	
16Gb	K9WAG08U1A-PCB	K9WAG08U1A-IIB	x8	3.3V	48TSOP, 52TLGA	
32Gb	K9NBG08U5A-PCB	N/A	x8	3.3V	DSP 48TSOP	
MLC						
8Gb	K9G8G08U0M-PCB	N/A	x8	3.3V	48TSOP	
16Gb	K9LAG08U0M-PCB	N/A	x8	3.3V	48TSOP	
32Gb	K9HBG08U1M-PCB	N/A	x8	3.3V	48TSOP	

NOTE: All parts lead free

OneNAND™ FLASH

Density	Part Number	Organization	Package	Voltage(V)	Temperature	Comments
128Mb	KFG2816U1M-PIB0000	x16	48TSOP (12x20)	3.3V	Industrial	
	KFG2816Q1M-DEB0000	x16	67 FBGA	1.8V	Extended	
	KFG2816U1M-DIB0000	x16	(7x9)	3.3V	Industrial	
256Mb	KFG5616Q1M-PEB0000	x16	48 TSOP	1.8V	Extended	No New Design
256Mb	KFG5616U1A-PIB5000	x16	48TSOP (12x20)	3.3V	Industrial	
	KFG5616Q1A-DEB5000	x16	67 FBGA	1.8V	Extended	
	KFG5616U1A-DIB5000	x16	(7x9)	3.3V	Industrial	
512Mb	KFG1216Q2A-DEB5000	x16	63 FBGA	1.8V	Extended	
	KFG1216U2A-DIB5000	x16	(9.5x12)	3.3V	Industrial	
1Gb	KFG1G16Q2M-DEB5000	x16	63 FBGA(10x13)	1.8V	Extended	No New Design
	KFG1G16Q2A-DEB6000	x16	63 FBGA(10x13)	1.8V	Extended	
2Gb DDP	KFH2G16Q2M-DEB5000	x16	63 FBGA (11x13)	1.8V	Extended	No New Design
2Gb mono	KFG2G16Q2M-DEB6000	x16	63 FBGA (11x13)	1.8V	Extended	
4Gb QDP	KFW4G16Q2M-DEB5000	x16	63 FBGA (11x13)	1.8V	Extended	No New Design
4Gb DDP	KFN4G16Q2M-DEB8000	x16	63 FBGA (11x13)	1.8V	Extended	

NOTE: All parts lead free

NOR FLASH

Density	TSOP	FBGA	Block	Voltage	Temperature	Comments
	Part Number	Part Number	Architecture			
16Mb	K8D1716UTC-PI07	K8D1716UTC-FI07	Top	3.3V	Industrial	Dual Bank, Async
	K8D1716UBC-PI07	K8D1716UBC-FI07	Bottom	3.3V	Industrial	Dual Bank, Async
32Mb	K8D3216UTC-PI07	N/A	Top	3.3V	Industrial	Dual Bank, Async
	K8D3216UBC-PI07	N/A	Bottom	3.3V	Industrial	Dual Bank, Async
	N/A	K8S3215ETE-SE7C	Top	1.8V	Industrial	Mux'd Burst
64Mb	K8D6316UTM-PI07	K8D6316UTM-DI07	Top	3.3V	Industrial	Dual Bank, Async
	K8D6316UBM-PI07	K8D6316UBM-DI07	Bottom	3.3V	Industrial	Dual Bank, Async
	N/A	K8S6415ETB-DE7C	Top	1.8V	Extended	Mux'd Burst
128Mb	N/A	K8S2815ETB-SE7C	Top	1.8V	Extended	Mux'd Burst
256Mb	N/A	K8S5615ETA-SE7C	Top	1.8V	Extended	Mux'd Burst

NOTE: All parts lead free

NAND FLASH ORDERING INFORMATION

K	9	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1. Memory (K)

2. NAND Flash: 9

3. Small Classification (SLC: Single Level Cell, MLC: Multi Level Cell, SM: SmartMedia, S/B: Small Block)

- A: SLC + Muxed I/F Chip
- B: Muxed I/F Chip
- S: SLC Single SM
- D: SLC Dual SM
- Q: 4CHIP SM
- T: SLC SINGLE (S/B)
- E: SLC DUAL (S/B)
- R: SLC 4DIE STACK (S/B)
- F: SLC Normal
- G: MLC Normal
- K: SLC 2-Die Stack
- W: SLC 4-Die Stack
- J: Non-Muxed OneNAND
- U: 2 STACK MSP
- V: 4 STACK MSP

4~5. Density

- 12: 512M 16: 16M
- 28: 128M 32: 32M
- 40: 4M 56: 256M
- 64: 64M 80: 8M
- 1G: 1G 2G: 2G
- 4G: 4G 8G: 8G
- 00: NONE

6~7. Organization

- 00: NONE 08: x8
- 16: x16

8. Vcc

- C: 5.0V(4.5V~5.5V)
- D: 2.65V(2.4V~2.9V)
- E: 2.3V~3.6V
- 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 Rn/B
- 4: Quad nCE & Single Rn/B
- A: Mask Option 1

10. Generation

- M: 1st Generation
- A: 2nd Generation
- B: 3rd Generation
- C: 4th Generation
- D: 5th Generation
- Y: Partial NAND(2nd)
- Z: Partial NAND(1st)
- M: 1st Generation
- A: 2nd Generation
- B: 3rd Generation
- C: 4th Generation
- D: 5th Generation
- Y: Partial NAND(2nd)
- Z: Partial NAND(1st)

11. "--"

12. Package

- A: COB B: TBGA
- C: CHIP BIZ D: 63-TBGA
- E: TSOP1(LF,1217) F: WSOP1(LF)
- G: FBGA H: TBGA(LF)
- J: FBGA(LF) K: TSOP1(1217)
- L: LGA M: tLGA
- P: TSOP1(LF) Q: TSOP2(LF)
- R: TSOP2-R S: SMARTMEDIA
- T: TSOP2 V: WSOP
- W: WAFER Y: TSOP1

13. Temp

- C: Commercial I: Industrial
- 0: NONE

14. Bad Block

- B: Include Bad Block
- D: Daisychain Sample
- L: 1~5 Bad Block
- N: Ini. All Good, Add. 10 Blocks
- S: All Good Block
- 0: NONE

15. NAND-Reserved

- 0: Reserved

16. Packing Type (16 digit)

Common to all products, except of Mask ROM
Divided into TAPE & REEL(In Mask ROM, divided into TRAY, AMMO Packing Separately)

Type	Packing Type	New Marking
Component	TAPE & REEL	T
	Other (Tray, Tube, Jar)	0 (Number)
	Stack	S
Component	TRAY	Y
(Mask ROM)	AMMO PACKING	A
Module	MODULE TAPE & REEL	P
	MODULE Other Packing	M

LOW-POWER (5V) SRAM

Density	Part Number	Organization	Vcc (V)	Speed(ns)	Operating Temp	Operating Current (mA)	Standby Current (uA)	Package	Production Status
8Mbit	K6X8008C2B	1Mx8	4.5 - 5.5	55,70	C,I	50	50	TSOP2(44)	EOL
	K6X8016C3B	512x16	4.5 - 5.5	55,70	C,I	60	50	TSOP2(44)	EOL
4Mbit	K6X4016C3F	256x16	4.5 - 5.5	55,70	I,A	50	20,30	TSOP2(44)	EOL
	K6X4008C1F	512x8	4.5 - 5.5	55,70	I,A	40	20,30	32SOP,TSOP	EOL
1Mbit	K6T1008C2E	128x8	4.5 - 5.5	55,70	C,I	50	10	32DIP,32SOP,TSOP1(32)	EOL
	K6X1008C2D	128x8	4.5 - 5.5	55,70	I,A	35	15,25	32SOP,TSOP1(32)	EOL
256Kbit	K6T0808C1D	32x8	4.5 - 5.5	55,70	C,I	60	5	28SOP,TSOP1(28)	EOL
	K6X0808C1D	32x8	4.5 - 5.5	55,70	C,I	35	25	28SOP	EOL

NOTE: Lead-free available upon request

LOW-VOLTAGE & LOW-POWER SRAM

Density	Part Number	Organization	Vcc (V)	Speed (ns)	Operating Temp	Operating Current (mA)	Standby Current (uA)	Package	Production Status
8Mbit	K6X8008T2B	1024Kx8	2.7 - 3.6	55,70	C,I	40	40	TSOP2(44)	EOL
	K6X8016T3B	512Kx16	2.7 - 3.6	55,70	C,I	45	40	TSOP2(44)	EOL
4Mbit	K6X4008T1F	512x8	2.7 - 3.6	70,85	I,A	30	20,30	32SOP,TSOP2(32)	EOL
	K6X4016T3F	256x16	2.7 - 3.6	70,85	I,A	40	20,30	TSOP2(44)	EOL
1Mbit	K6F1008U2C	128x8	2.7 - 3.3	55,70	I	2	0.5	32TSOP1	EOL
	K6X1008T2D	128x8	2.7 - 3.6	70,85	I,A	25	10,20	32SOP,TSOP2(32)	EOL
	K6F1008V2C	128x8	3.0 - 3.6	55,70	I	3	0.5	25SOP1	EOL

MICRO-POWER & LOW-VOLTAGE SRAM

Density	Part Number	Organization	Vcc (V)	Speed (ns)	Operating Temp	Operating Current (mA)	Standby Current (uA)	Package	Production Status
16Mbit	K6F1616U6C	1x16	2.7 - 3.3	55,70	I	3	1	48-FBGA	EOL, LTB due no later than 12/31/06
	K6F1616R6C	1x16	1.65 - 2.2	70	I	3	1	48-FBGA	EOL, LTB due no later than 12/31/06
8Mbit	K6F8016R6B	512x16	1.65 - 2.2	70,85	I	3	1	48-TBGA	EOL
	K6F8016U6B	512x16	2.7 - 3.3	55,70	I	4	1	48-TBGA	EOL
4Mbit	K6F4008R2G	512Kx8	1.65 - 2.20	70,85	I	2	0.5	36TBGA	EOL, LTB due no later than 12/31/06
	K6F4008U2G	512Kx8	2.7 - 3.3	45,55,70	I	2	0.5	36TBGA	EOL, LTB due no later than 12/31/06
	K6F4016R4E	256Kx16	1.65 - 2.20	70,85	I	2	0.5	48TBGA	EOL, LTB due no later than 12/31/06
	K6F4016R6G	256Kx16	1.65 - 2.20	70,85	I	2	0.5	48TBGA	EOL, LTB due no later than 12/31/06
	K6F4016U4G	256Kx16	2.7 - 3.3	55,70	I	2	0.5	48TBGA	EOL, LTB due no later than 12/31/06
	K6F4016U6G	256Kx16	2.7 - 3.3	55,70	I	2	0.5	48TBGA	EOL, LTB due no later than 12/31/06
2Mbit	K6F2016U4E	128x16	2.7 - 3.3	55,70	I	2	0.5	48-TBGA	EOL
	K6F2016R4E	128x16	1.65 - 2.2	70,85	I	2	0.5	48-FBGA	EOL
	K6F2008U2E	256x8	2.7 - 3.3	55,70	I	2	0.5	32TSOP1	EOL
	K6F2008V2E	256x8	3.0 - 3.6	55,70	I	3	0.5	32TSOP1	EOL
1Mbit	K6F1016U4C	64x16	2.7 - 3.3	55,70	I	2	0.5	48-FBGA	EOL

UtRAM (High Density & Low Power)

Density	Part Number	Organization	Vcc (V)	Speed (ns)	Operating Temp	Operating Current (mA)	Standby Current (uA)	Package	Production Status
32Mbit	K1S321615M	2Mx16	3	100	E	20	150	48-TBGA	EOL
	K1S321611C	2Mx16	3	70	I	35	100	48-FBGA	Mass Production
	K1S32161CD	2Mx16	3	70	I	35	100	48-FBGA	Mass Production
	K1S32161BCD	2Mx16	1.8	70	I	35	100	48-FBGA	Mass Production
	K1S32161CD	2Mx16	3	70	E	35	100	48-TBGA	Mass Production
16Mbit	K1S161615M	1Mx16	3	70	I	20	70	48-TBGA	EOL
	K1S1616B1M	1Mx16	1.8	70	I	35	60	48-TBGA	EOL

HIGH-SPEED (4Mbit) ASYNCHRONOUS FAST SRAM

Density	Part Number	Organization	Vcc (V)	Speed (ns)	Operating Temp	Operating Current (mA)	Standby Current (uA)	Package	Production Status
4Mbit	K6R4016C1D	256Kx16	5	10	I	65, 55	20, 5	44SOJ, 44TSOP2, 48TBGA	Mass Production
	K6R4016V1D	256Kx16	3.3	10	I	80, 65	20, 5(1.2)	44SOJ, 44TSOP2, 48TBGA	Mass Production
	K6R4004C1D	1Mx4	5	10, 12	I	65, 55	20, 5	32 SOJ	EOL
	K6R4004V1D	1Mx4	3.3	8, 10	I	80, 65	20, 5	32 SOJ	EOL
	K6R4008C1D	512Kx8	5	10	I	65, 55	20, 5	36 SOJ, 44 TSOP2	Mass Production
	K6R4008V1D	512Kx8	3.3	10	I	80, 65	20, 5	36 SOJ, 44 TSOP2	Mass Production
3Mbit	K6R3024V1D	128x24	3.3	9, 10, 12	C,I	170,150,130	40,15	119PBGA	EOL
1Mbit	K6R1008V1D	128x8	3.3	8, 10, 12	C,I	170,150,130	20,5	32SOJ,32TSOP2	EOL
	K6R1008C1D	128x8	5	10, 12, 15	C,I	170,150,130	20,5	32SOJ,32TSOP2	EOL
	K6R1004V1D	256x4	3.3	8, 10, 12	C,I	170,150,130	20,5	32SOJ	EOL
	K6R1004C1D	256x4	5	10, 12, 15	C,I	170,150,130	20,5	32SOJ	EOL
	K6R1016V1D	64x16	3.3	8, 10, 12	C,I	170,150,130	20,5	44SOJ,44TSOP2,48TBGA	EOL
	K6R1016C1D	64x16	5	10, 12, 15	C,I	170,150,130	20,5	44SOJ,44TSOP2,48TBGA	EOL

NOTE: Ordering Information: http://www.samsung.com/Products/Semiconductor/Support/Label_CodeInfo/Async_SRAM.pdf

ASYNCHRONOUS SRAM ORDERING INFORMATION

K	6	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Memory (K)			10. Generation									14~15. Speed (tAA)						
2. Async SRAM: 6			M: 1st Generation A: 2nd Generation B: 3rd Generation C: 4th Generation D: 5th Generation E: 6th Generation F: 7th Generation G: 8th Generation H: 9th Generation									- fCMOS Cell + LPSRAM & Poly Load Cell + LPSRAM & TFT Cell + LPSRAM 10: 100ns 12: 120ns 15: 150ns 25: 25ns(only fCMOS Cell) 30: 300ns 35: 35ns(except Poly Load Cell) 45: 45ns(except fCMOS Cell) 55: 55ns 60: 60ns(only fCMOS Cell) 70: 70ns 85: 85ns 90: 90ns(only fCMOS Cell) DS: Daisychain Sample						
3. Small Classification			11. "-----"									- High Speed (LPSRAM) 20: 20ns 25: 25ns - High Voltage (LPSRAM) 55: 55ns 70: 70ns 85: 85ns - Corner Vcc/Vss + Fast SRAM 10: 10ns 12: 12ns 13: 13ns 15: 15ns 17: 17ns 20: 20ns 25: 25ns 30: 30ns 35: 35ns 45: 45ns - BICMOS & Center Vcc/Vss + Fast SRAM 06: 6ns 08: 8ns 09: 9ns 10: 10ns 12: 12ns 13: 13ns 15: 15ns 17: 17ns 20: 20ns 25: 25ns 30: 30ns(only Center Vcc/Vss + Fast SRAM) 35: 35ns(only Center Vcc/Vss + Fast SRAM) 7A: 7.2ns(only BICMOS) 8A: 8.6ns(only BICMOS) DS: Daisychain Sample						
E: Corner Vcc/Vss + Fast SRAM F: fCMOS Cell + LPSRAM H: High Speed(LPSRAM) X: High Voltage(LPSRAM) J: BICMOS L: Poly Load Cell + LPSRAM R: Center Vcc/Vss + Fast SRAM T: TFT Cell + LPSRAM			12. Package									- BICMOS & Center Vcc/Vss + Fast SRAM 06: 6ns 08: 8ns 09: 9ns 10: 10ns 12: 12ns 13: 13ns 15: 15ns 17: 17ns 20: 20ns 25: 25ns 30: 30ns(only Center Vcc/Vss + Fast SRAM) 35: 35ns(only Center Vcc/Vss + Fast SRAM) 7A: 7.2ns(only BICMOS) 8A: 8.6ns(only BICMOS) DS: Daisychain Sample - Async SRAM COMMON 00: NONE (Containing Wafer, CHIP BIZ, Exception code)						
4~5. Density			A: TBGA(LF) B: SOP(LF) C: CHIP BIZ D: DIP E: TBGA F: FBGA G: SOP H: BGA J: SOJ K: SOJ(LF) L: TSOP1-0813.4F(LF) P: TSOP1-0820F(LF) Q: TSOP2-400R(LF) R: TSOP-R T: TSOP U: TSOP2-400(LF) W: WAFER Z: UBGA									- Common to all products, except of Mask ROM - Divided into TAPE & REEL(In Mask ROM, divided into TRAY, AMMO Packing Separately)						
06: 64K 08: 256K 09: 512K 10: 1M 16: 16M 20: 2M 30: 3M 32: 32M 40: 4M 60: 6M 64: 64M 80: 8M			* Exception - 1MFSRAM B-ver 32-SOJ-300 > S 28-SOJ-300 > S - 512K/1M/2M/4M LPSRAM 32-TSOP1-0813.4F > Y 32-TSOP1-0813.4 > Y 32-TSOP1-0813.4R > N - 4M LPSRAM 32-TSOP2-400F > V 32-TSOP2-400R > M									16. Packing Type (16 digit)						
6~7. Organization			13. 1st Chip Speed															
01: x1 04: x4 08: x8 16: x16 18: x18 24: x24 32: x32			- COMMON (Temp,Power) A: Automotive,Normal B: Commercial,Low Low C: Commercial,Normal D: Extended,Low Low E: Extended,Normal F: Industrial,Low Low I: Industrial,Normal L: Commercial,Low M: Military,Normal N: Extended,Low P: Industrial,Low Q: Automotive,Low R: Industrial,Super Low T: Extended,Super Low U: Commercial,Ultra Super Low 0: NONE,NONE - WAFER, CHIP BIZ Level Division 0: NONE,NONE 1: Hot DC sort 2: Hot DC,selected AC sort 3: Cold/Hot DC,selected AC sort									Type Packing Type New Marking Component TAPE & REEL T Other (Tray, Tube, Jar) 0 (Number) Stack S Component TRAY Y (Mask ROM) AMMO PACKING A Module MODULE TAPE & REEL P MODULE Other Packing M						
8. Vcc			5: 1.5V C: 5.0V Q: VDD 3.0V/VDDQ 1.8V R: 1.65V~2.2V S: 2.5V T: 2.7V~3.6V U: 3.0V V: 3.3V W: 2.2V~3.3V															
9. Mode			1: CS Low Active 2: CS1, CS2 - Dual Chip Select Signal 3: Single Chip Select with /LB,/UB(tOE) 4: Single Chip Select with /LB,/UB(tCS) 5: Dual Chip Select with /LB,/UB(tOE) 6: Dual Chip Select with /LB,/UB(tCS) 7: I/Os Control with /BYTE 8: CDMA Function 9: Multiplexed Address A: Mirror Chip Option															

SPB & FT (36Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status	Comments		
K7A323600M	1Mx36	SPB	3.3	2.6, 3.1, 4.0	250, 200, 138	3.3, 2.5	100TQFP (L / LF)	EOL in Q1'07	2E1D		
K7A321800M	2Mx18	SPB	3.3	2.6, 3.1, 4.0	250, 200, 138	3.3, 2.5	100TQFP (L / LF)	EOL in Q1'07	2E1D		
K7B323625M	1Mx36	SB	3.3	6.5, 7.5	133, 118	3.3, 2.5	100TQFP (L / LF)	EOL in Q1'07	-		
K7B321825M	2Mx18	SB	3.3	6.5, 7.5	133, 118	3.3, 2.5	100TQFP (L / LF)	EOL in Q1'07	-		
K7A323630C	1Mx36	SPB	3.3, 2.5	3.1	200	3.3, 2.5	100TQFP (LF/Lead Free) only)	Q3'06 (E/S)	2E1D		
K7A321830C	2Mx18	SPB	3.3, 2.5	3.1	200	3.3, 2.5	100TQFP (Lead Free only)	Q3'06 (E/S)	2E1D		
K7B323635C	1Mx36	SB	3.3, 2.5	7.5	118	3.3, 2.5	100TQFP (Lead Free only)	Q3'06 (E/S)	-		
K7B321835C	2Mx18	SB	3.3, 2.5	7.5	118	3.3, 2.5	100TQFP (Lead Free only)	Q3'06 (E/S)	-		

NOTES: 2E1D = 2-cycle Enable and 1-cycle Disable

NOTES: 200MHz could cover 167MHz, 133MHz speed option

SPB & FT (18Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status	Comments		
K7A163630B	512Kx36	SPB	3.3, 2.5	2.6, 3.5	250, 167	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A163631B	512Kx36	SPB	3.3, 2.5	3.1	200	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E2D		
K7A161830B	1Mx18	SPB	3.3, 2.5	2.6, 3.5	250, 167	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A161831B	1Mx18	SPB	3.3, 2.5	3.1	200	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E2D		
K7B163635B	512Kx36	SB	3.3, 2.5	7.5	117	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	-		
K7B161835B	1Mx18	SB	3.3, 2.5	7.5	117	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	-		

NOTES: 2E1D = 2-cycle Enable and 1-cycle Disable 2E2D = 2-cycle Enable and 2-cycle Disable

NOTES: 250MHz could cover 200MHz speed option / 167MHz could cover 133MHz speed option

SPB & FT (8Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status	Comments		
K7A803600B	256x36	SPB	3.3	3.5, 3.8	167, 138	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A803609B	256x36	SPB	3.3	2.6	250	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A801800B	512x18	SPB	3.3	3.5, 3.8	167, 138	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A801809B	512x18	SPB	3.3	2.6	250	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7B803625B	256x36	SB	3.3	6.5, 7.5	133, 117	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	-		
K7B801825B	512x18	SB	3.3	6.5, 7.5	133, 117	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	-		

NOTES: 2E1D = 2-cycle Enable and 1-cycle Disable
2E2D = 2-cycle Enable and 2-cycle Disable

Recommended speed options for SPB are 250MHz and 167MHz

Recommended access speed option for SB is 6.5ns

SPB & FT (4Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status	Comments		
K7A403600B	128Kx36	SPB	3.3	3.5, 4.0	167, 138	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A401800B	256Kx18	SPB	3.3	3.5, 4.0	167, 138	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A403609B	128Kx36	SPB	3.3	2.4, 2.8	250, 200	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A401809B	256Kx18	SPB	3.3	2.4, 2.8	250, 200	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7A403200B	128Kx32	SPB	3.3	3.5, 4.0	167, 138	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production	2E1D		
K7B403625B	128Kx36	SB	3.3	6.5, 7.5	133, 118	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production			
K7B401825B	256Kx18	SB	3.3	6.5, 7.5	133, 118	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production			

NOTES: 2E1D = 2-cycle Enable and 1-cycle Disable 2E2D = 2-cycle Enable and 2-cycle Disable

NOTES: 250MHz could cover 200MHz speed option / 167MHz could cover 133MHz speed option

SPB & FT (2Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status	Comments		
K7A203600B	64Kx36	SPB	3.3	4	138	2.5, 3.3	100 TQFP	Will be EOL'd in Q1'07	2E1D		
K7A203200B	64Kx32	SPB	3.3	4	138	2.5, 3.3	100 TQFP	Will be EOL'd in Q1'07	2E1D		

NOTES: 2E1D = 2-cycle Enable and 1-cycle Disable

2E2D = 2-cycle Enable and 2-cycle Disable

NtRAM (72Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status			
K7N643645M	2Mx36	SPB	2.5	2.6, 3.5	250, 167	2.5	100TQFP(LF Only), 165FBGA	Mass Production			
K7N641845M	4Mx18	SPB	2.5	2.6, 3.5	250, 167	2.5	100TQFP(LF Only), 165FBGA	Mass Production			

NOTES: 250MHz could cover 200MHz speed option / 167MHz could cover 133MHz speed option

NtRAM (36Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status			
K7N323645M	1Mx36	SPB	2.5	2.6, 3.2, 3.5, 4.2	250, 200, 167, 133	2.5	100TQFP, 165FBGA	EOL in Q1'07			
K7N321845M	2Mx18	SPB	2.5	2.6, 3.2, 3.5, 4.2	250, 200, 167, 133	2.5	100TQFP, 165FBGA	EOL in Q1'07			
K7N323601M	1Mx36	SPB	3.3	2.6, 3.2, 3.5, 4.2	250, 200, 167, 133	3.3, 2.5	100TQFP, 165FBGA	EOL in Q1'07			
K7N321801M	2Mx18	SPB	3.3	2.6, 3.2, 3.5, 4.2	250, 200, 167, 133	3.3, 2.5	100TQFP, 165FBGA	EOL in Q1'07			
K7M323625M	1Mx36	FT	3.3	7.5	118	3.3, 2.5	100TQFP	EOL in Q1'07			
K7M321825M	2Mx18	FT	3.3	7.5	118	3.3, 2.5	100TQFP	EOL in Q1'07			
K7N32363SC	1Mx36	SPB	3.3, 2.5	2.6, 3.5	250, 167	3.3, 2.5	100TQFP(LF only), 165FBGA	Q3'06 (E/S)			
K7N32183SC	2Mx18	SPB	3.3, 2.5	2.6, 3.5	250, 167	3.3, 2.5	100TQFP(LF only), 165FBGA	Q3'06 (E/S)			
K7M323635C	1Mx36	FT	3.3, 2.5	7.5	118	3.3, 2.5	100TQFP (LF only)	Q3'06 (E/S)			
K7M321835C	2Mx18	FT	3.3, 2.5	7.5	118	3.3, 2.5	100TQFP (LF only)	Q3'06 (E/S)			

NOTES: Recommended speed options for SPB are 250MHz and 167MHz

Recommended access speed option for SB is 7.5ns

NOTES: 250MHz could cover 200MHz speed option / 167MHz could cover 133MHz speed option

NtRAM (18Mbit) SRAM

Part		Operating		Access Time		Speed		I/O		Production	
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status			
K7N161831B	1Mx18	SPB	3.3, 2.5	2.6, 3.5	250, 167	3.3, 2.5	100TQFP(LF only from 2H'07), 165FBGA	Mass Production			
K7N163631B	512Kx36	SPB	3.3, 2.5	2.6, 3.5	250, 167	3.3, 2.5	100TQFP(LF only from 2H'07), 165FBGA	Mass Production			
K7M161835B	1Mx18	FT(SB)	3.3	6.5	133	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production			
K7M163635B	512Kx36	FT(SB)	3.3	6.5	133	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production			

NOTES: 250MHz could cover 200MHz speed option / 167MHz could cover 133MHz speed option / 6.5ns could cover 7.5ns speed option

NtRAM (8Mbit) SRAM

Part	Operating	Access Time	Speed	I/O	Production			
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status
K7N803601B	256Kx36	SPB	3.3	3.5, 4.2	167,133	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N801801B	512Kx18	SPB	3.3	3.5, 4.2	167,133	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N803609B	256Kx36	SPB	3.3	2.6	250	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N801809B	512Kx18	SPB	3.3	2.6	250	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N803645B	256Kx36	SPB	2.5	3.5, 4.2	167,133	2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N801845B	512Kx18	SPB	2.5	3.5, 4.2	167,133	2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N803649B	256Kx36	SPB	2.5	2.6	250	2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N801849B	512Kx18	SPB	2.5	2.6	250	2.5	100TQFP (LF only from 2H'07)	Mass Production
K7M801825B	512Kx18	FT	3.3	6.5,7.5	133,117	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production
K7M803625B	256Kx36	FT	3.3	6.5,7.5	133,117	3.3, 2.5	100TQFP (LF only from 2H'07)	Mass Production

NtRAM (4Mbit) SRAM

Part	Operating	Access Time	Speed	I/O	Production			
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status
K7N403601B	128Kx36	SPB	3.3	3.5, 4.2	167,133	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N401801B	256Kx18	SPB	3.3	3.5, 4.2	167,133	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N403609B	128Kx36	SPB	3.3	2.6, 3.0	250,200	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production
K7N401809B	256Kx18	SPB	3.3	2.6, 3.0	250,200	3.3,2.5	100TQFP (LF only from 2H'07)	Mass Production

LATE-WRITE R-R (32Mbit) SRAM

Part	Operating	Access Time	Speed	I/O	Production			
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status
K7P321888M	2Mx18	SP	1.8	1.7, 2.0	300,250	1.5 (Max 1.8)	119BGA	EOL in Q2'07
K7P323688M	1Mx36	SP	1.8	1.7, 2.0	300,250	1.5 (Max 1.8)	119BGA	EOL in Q2'07
K7P321866M	2Mx18	SP	2.5	1.6, 2.0	300,250	1.5 (Max 1.8)	119BGA	EOL in Q2'07
K7P323666M	1Mx36	SP	2.5	1.6, 2.0	300,250	1.5 (Max 1.8)	119BGA	EOL in Q2'07
K7P321874C	2Mx18	SP	1.8 / 2.5V	1.6, 2.0	300,250	1.5 (Max 1.8)	119BGA	Q3'06 (C/S)
K7P323674C	1Mx36	SP	1.8 / 2.5V	1.6, 2.0	300,250	1.5 (Max 1.8)	119BGA	Q3'06 (C/S)

LATE-WRITE R-R (16Mbit) SRAM

Part	Operating	Access Time	Speed	I/O	Production			
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status
K7P161866A	1Mx18	SP	2.5	2	250	1.5 (Max 1.9)	119BGA	Mass Production
K7P163666A	512Kx36	SP	2.5	1.6	300,250	1.5 (Max.1.9)	119BGA	Mass Production

LATE-WRITE R-R (8Mbit) SRAM

Part	Operating	Access Time	Speed	I/O	Production			
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status
K7P801811B	512Kx18	SP	3.3	1.5,1.6,2.0	333,300,250	1.5 (Max.2.0)	119BGA	Mass Production
K7P803611B	256Kx36	SP	3.3	1.5,1.6,2.0	333,300,250	1.5 (Max.2.0)	119BGA	Mass Production
K7P801866B	512Kx18	SP	2.5	1.5,1.6,2.0	333,300.25	1.5 (Max.2.0)	119BGA	Mass Production
K7P803666B	256Kx36	SP	2.5	1.5, 1.6, 2.0	333, 300,250	1.5 (Max 2.0)	119BGA	Mass Production
K7P801822B	512Kx18	SP	3.3	1.5, 1.6, 2.0	333, 300,250	2.5/3.3	119BGA	Mass Production
K7P803622B	256Kx36	SP	3.3	3.3,2.5,2.0	250,200,166	2.5/3.3	119BGA	Mass Production

LATE-WRITE R-R & R-L (4Mbit) SRAM

Part	Operating	Access Time	Speed	I/O	Production			
Number	Organization	Mode	Vdd (V)	tCD(ns)	tCYC (MHz)	Voltage (V)	Package	Status
K7P401822B	256Kx18	SP	3.3	2.5,2.7,3.0	250,200,167	2.5/3.3	119BGA	Mass Production
K7P401823B	256Kx18	SP	3.3	6.5	167	2.5/3.3	119BGA	Mass Production
K7P403622B	128Kx36	SP	3.3	2.5,2.7,3.0	250,200,167	2.5/3.3	119BGA	Mass Production

DDR (8Mbit) SRAM

Part	Access Time	Cycle Time	I/O	Production			
Number	Organization	Vdd (V)	tCD (ns)	(MHz)	Voltage (V)	Package	Status
K7D803671B	256Kx36	2.5	1.7/1.9/2.1	333, 330, 250	1.5(Max 2.0)	153BGA	Mass Production
K7D801871B	512Kx18	2.5	1.7/1.9/2.1	333, 330, 250	1.5(Max 2.0)	153BGA	Mass Production

DDR (16Mbit) SRAM

Part	Access Time	Cycle Time	I/O	Production			
Number	Organization	Vdd (V)	tCD (ns)	(MHz)	Voltage (V)	Package	Status
K7D161874B	1Mx18	1.8~2.5	2.3	330, 300	1.5~1.9	153BGA	Mass Production
K7D163674B	512Kx36	1.8~2.5	2.3	330, 300	1.5~1.9	153BGA	Mass Production

DDR (32Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Package	Production Status
K7D321874A	2Mx18	1.8~2.5	2.0	400, 375, 333	1.5~1.8	153BGA	EOL in Q4'06
K7D323674A	1Mx36	1.8~2.5	2.0	400, 375, 333	1.5~1.8	153BGA	EOL in Q4'06
K7D321874C	2Mx18	1.8~2.5	2.0	400, 375, 333	1.5~1.8	153BGA	Q3'06 (C/S)
K7D323674C	1Mx36	1.8~2.5	2.0	400, 375, 333	1.5~1.8	153BGA	Q3'06 (C/S)

DDR II CIO/SIO (18Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Package	Production Status	Comments
K7I161882B	1Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-2B
K7I161884B	1Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-4B
K7J161882B	1Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	SIO-2B
K7J163682B	512Kx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	SIO-2B
K7I163682B	512Kx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-2B
K7I163684B	512Kx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-4B

NOTES: 2B = Burst of 2

4B = Burst of 4

SIO = Separate I/O

CIO = Common I/O

DDR II CIO/SIO (36Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Package	Production Status	Comments
K7I321882M	2Mx18	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	CIO-2B
K7I321884M	2Mx18	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	CIO-4B
K7J321882M	2Mx18	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	SIO-2B
K7I323682M	1Mx36	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	CIO-2B
K7I323684M	1Mx36	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	CIO-4B
K7J323682M	1Mx36	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	SIO-2B
K7I321882C	2Mx18	1.8	0.45	330,300,250	1.5,1.8	165FBGA	Q3'06 (C/S)	CIO-2B
K7I321884C	2Mx18	1.8	0.45	330,300,250	1.5,1.8	165FBGA	Q3'06 (C/S)	CIO-4B
K7J321882C	2Mx18	1.8	0.45	330,300,250	1.5,1.8	165FBGA	Q3'06 (C/S)	SIO-2B
K7I323682C	1Mx36	1.8	0.45	330,300,250	1.5,1.8	165FBGA	Q3'06 (C/S)	CIO-2B
K7I323684C	1Mx36	1.8	0.45	330,300,250	1.5,1.8	165FBGA	Q3'06 (C/S)	CIO-4B
K7J323682C	1Mx36	1.8	0.45	330,300,250	1.5,1.8	165FBGA	Q3'06 (C/S)	SIO-2B

NOTES: 2B = Burst of 2

4B = Burst of 4

SIO = Separate I/O

CIO = Common I/O

C-die will support high-speed bins only 330, 300, 250MHz, which can cover slow-speed bins (200MHz, 167MHz) using stable DLL circuit.

DDR II CIO/SIO (72Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Production Package	Status	Comments
K7I641882M	4Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-2B
K7I641884M	4Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-4B
K7J641882M	4Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	SIO-2B
K7I643682M	2Mx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-2B
K7I643684M	2Mx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	CIO-4B
K7J643682M	2Mx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	SIO-2B

NOTES: 2B = Burst of 2

4B = Burst of 4

SIO = Separate I/O

CIO = Common I/O

DDR II+ CIO/SIO (18Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Production Package	Status	Comments
K7K1618T2C	1Mx18	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	DDRII + CIO-2B
K7K1636T2C	512Kx36	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	DDRII + CIO-2B

NOTES: Offer 2-clock latency now; we can also support 2.5-clock latency with 500MHz speed based on demand.

DDR II+ CIO/SIO (36Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Production Package	Status	Comments
K7K3218T2C	2Mx18	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	DDRII + CIO-2B
K7K3236T2C	1Mx36	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	DDRII + CIO-2B

NOTES: Offer 2-clock latency now; we can also support 2.5-clock latency with 500MHz speed based on demand.

QDR I, II (18Mbit) SRAM

Part Number	Organization	Vdd (V)	Access Time tCD (ns)	Cycle Time (MHz)	I/O Voltage (V)	Production Package	Status	Comments
K7R160982B	2Mx9	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II - 2B
K7R161882B	1Mx18	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II - 2B
K7R161884B	1Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II - 4B
K7Q161862B	1Mx18	1.8v / 2.5v	2.5	167	1.5,1.8	165FBGA	Mass Production	QDR I - 2B
K7Q161864B	1Mx18	1.8v / 2.5v	2.5	167	1.5,1.8	165FBGA	Mass Production	QDR I - 4B
K7R163682B	512Kx36	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II - 2B
K7R163684B	512Kx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II - 4B
K7Q163662B	512Kx36	1.8v / 2.5v	2.5	167	1.5,1.8	165FBGA	Mass Production	QDR I - 2B
K7Q163664B	512Kx36	1.8v / 2.5v	2.5	167	1.5,1.8	165FBGA	Mass Production	QDR I - 4B

NOTES: 2B = Burst of 2

4B = Burst of 4

QDR II (36Mbit) SRAM

Part			Access Time	Cycle Time	I/O	Production		
Number	Organization	Vdd (V)	tCD (ns)	(MHz)	Voltage (V)	Package	Status	Comments
K7R320982M	4Mx9	1.8	0.45,0.50	200,167	1.5,1.8	165FBGA	EOL in Q4'06	QDR II-2B
K7R321882M	2Mx18	1.8	0.45,0.50	200,167	1.5,1.8	165FBGA	EOL in Q4'06	QDR II-2B
K7R321884M	2Mx18	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	QDR II-4B
K7R323682M	1Mx36	1.8	0.45,0.50	200,167	1.5,1.8	165FBGA	EOL in Q4'06	QDR II-2B
K7R323684M	1Mx36	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	EOL in Q4'06	QDR II-4B
K7R320982C	4Mx9	1.8	0.45	300, 250, 200	1.5,1.8	165FBGA	Q3'06 (C/S)	QDR II-2B
K7R321882C	2Mx18	1.8	0.45	300, 250, 200	1.5,1.8	165FBGA	Q3'06 (C/S)	QDR II-2B
K7R321884C	2Mx18	1.8	0.45	333, 300, 250	1.5,1.8	165FBGA	Q3'06 (C/S)	QDR II-4B
K7R323682C	1Mx36	1.8	0.45	300, 250, 200	1.5,1.8	165FBGA	Q3'06 (C/S)	QDR II-2B
K7R323684C	1Mx36	1.8	0.45	333, 300, 250	1.5,1.8	165FBGA	Q3'06 (C/S)	QDR II-4B

NOTES: 2B = Burst of 2

4B = Burst of 4

C-die will support high-speed bins only 300, 250, 200MHz, which can cover slow-speed bin (167MHz) using stable DLL circuit.

QDR II (72Mbit) SRAM

Part			Access Time	Cycle Time	I/O	Production		
Number	Organization	Vdd (V)	tCD (ns)	(MHz)	Voltage (V)	Package	Status	Comments
K7R640982M	8Mx9	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II-2B
K7R641882M	4Mx18	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II-2B
K7R641884M	4Mx18	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II-4B
K7R643682M	2Mx36	1.8	0.45,0.45,0.50	250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II-2B
K7R643684M	2Mx36	1.8	0.45,0.45,0.45,0.50	300,250,200,167	1.5,1.8	165FBGA	Mass Production	QDR II-4B

NOTES: 2B = Burst of 2

4B = Burst of 4

The recommended speed bins are 250MHz, 200MHz for 2B part, 300MHz, 250MHz for 4B part.

QDR II+ (18Mbit) SRAM

Part			Access Time	Cycle Time	I/O	Production		
Number	Organization	Vdd (V)	tCD (ns)	(MHz)	Voltage (V)	Package	Status	Comments
K7S1618T4C	1Mx18	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	QDR II + 4B
K7S1636T4C	512Kx36	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	QDR II + 4B

NOTES: Offer 2-clock latency now; we can also support 2.5-clock latency with 500MHz speed based on demand.

QDR II+ (36Mbit) SRAM

Part			Access Time	Cycle Time	I/O	Production		
Number	Organization	Vdd (V)	tCD (ns)	(MHz)	Voltage (V)	Package	Status	Comments
K7S3218T4C	1Mx36	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	QDR II + 4B
K7S3236T4C	2Mx18	1.8	0.45	400, 333	1.5	165FBGA	Q3'06 (E/S)	QDR II + 4B

NOTES: Offer 2-clock latency now; we can also support 2.5-clock latency with 500MHz speed based on demand.

MCP: NAND/DRAM

DENSITY		Memory Combination	VCC (V)		ORGANIZATION		Part No.	PACKAGE INFORMATION			
FLASH	DRAM		FLASH	DRAM	FLASH	DRAM		Size	Type		
256Mb	128Mb	ND256128	1.8V	1.8V	x8	x16	K5D5629ACC-D0900000	10.5x13x1.4	107FBGA		
256Mb	256Mb	ND256256	1.8V	1.8V	x8	x16	K5D5657ACB-D0900000	10.5x13x1.4	107FBGA		
			2.65V	1.8V	x8	x16	K5D5657DCB-D0900000	10.5x13x1.4	107FBGA		
256Mb	512Mb	ND256512	3.0V	2.5V	x8	x32	K5D5613HCA-D0900000	10.5x13x1.2	137FBGA		
			3.3V	3.3V	x8	x32	K5D5613VCM-D0900000	10.5x13x1.2	137FBGA		
256Mb	1Gb	NDD256512512	3.0V	2.5V	x8	x16	KAL005005M-DGYY000	10.5x13x1.4	137FBGA		
			1.8V	1.8V	x8	x16	K5D5629ACC-D0900000	10.5x13x1.2	107FBGA		
	128Mb	ND256128	1.8V	1.8V	x8	x16	K5D5657ACB-D0900000	10.5x13x1.2	107FBGA		
			2.65V	1.8V	x8	x16	K5D5657DCB-D0900000	10.5x13x1.2	107FBGA		
512Mb	256Mb	ND512256	1.8V	1.8V	x8	x16	K5D1257ACB-D0900000	10.5x13x1.2	107FBGA		
			2.65V	1.8V	x8	x16	K5D1257DCA-D0900000	10.5x13x1.4	107FBGA		
			1.8V	1.8V	x8	x32	K5D1258ACM-D0900000	11.5x13x1.2	137FBGA		
			2.65V	1.8V	x8	x32	K5D1258DCM-D0900000	10.5x13x1.4	137FBGA		
512Mb	512Mb	NDD512256256	2.65V	1.8V	x8	x32	KAL003004M-DG55000	10.5x13x1.4	137FBGA		
			ND512512	2.65V	1.8V	x8	x16	K5D1212DCA-D0900000	10.5x13x1.2	107FBGA	
				1.8V	1.8V	x8	x32	K5D1213ACM-D0900000	10.5x13x1.2	137FBGA	
				1.8V	1.8V	x8	x16(D)	K5E1212ACB-D075000	11.5x13x1.4	202FBGA	
1Gb	256Mb	NND512512256	2.65V	1.8V	x8	x16	KAG00K007A-DGG5000	10.5x13x1.4	107FBGA		
1Gb	512Mb	NNDD512512256256	2.65V	1.8V	x8	x16	KBE00F003A-D411000	10.5x13x1.4	107FBGA		
			1.8V	1.8V	x8	x16	KBE00G003M-D429000	10.5x13x1.4	107FBGA		
			3.0V	3.0V	x8	x16	KBE00J006A-D411000	10.5x13x1.4	107FBGA		
			2.65V	1.8V	x8	x32	KBE00F005A-D411000	10.5x13x1.4	137FBGA		
			1.8V	1.8V	x8	x32	KBE00G005A-D411000	10.5x13x1.4	137FBGA		
				NND512512512	1.8V	1.8V	x8	x16	KAG004003M-DDD5000	10.5x13x1.4	107FBGA
					2.65V	1.8V	x8	x16	KAG00K003M-DGG5000	10.5x13x1.4	107FBGA
					1.8V	1.8V	x8	x32	KAG00400SM-DDDY000	10.5x13x1.4	137FBGA
					NDD1G256256	1.8V(L)	1.8V	x8	x32	KAL00T00KM-DG55000	11.5x13x1.2
					3.0V	2.65V	x8	x32	KAL00Z00LM-DA55000	11.5x13x1.4	137FBGA
					ND1G512	2.65V	1.8V	x8	x16	K5D1G12DCM-D0900000	10.5x13x1.4
						2.65V	1.8V	x8	x32	K5D1G13DCM-D0900000	10.5x13x1.4
							1.8V	1.8V	x8	x32	K5D1G13ACD-D075000
							1.8V(L)	1.8V	x8	x16	K5D1G12ACM-D0900000
							1.8V(L)	1.8V	x8	x32	K5E1G13ACM-D075000
			1Gb	1Gb			ND1G512512	1.8V(L)	1.8V	x8	x16
2Gb	512Mb	NNDD1G1G256256	2.65V(L)	1.8V	x8	x32	KBE00S005M-D411000	12x14x1.4	137FBGA		
			3.3V(L)	3.0V	x8	x16	KBE00U006M-D411000	12x14x1.4	107FBGA		
			1.8V(L)	1.8V	x8	x32	KBE00H005M-D411000	11.5x13x1.4	137FBGA		
			1.8V(L)	2.8V	x8	x32	KBE00H00BM-D413000	11.5x13x1.4	137FBGA		
			NND1G1G512	2.65V	1.8V	x8	x16	KAG006003M-DGG5000	12.0x14x1.4	107FBGA	
				2.65V	1.8V	x8	x32	KAG006003M-DGG5000	12.0x14x1.4	137FBGA	
					1.8V(L)	1.8V	x8	x32(D)	KAG001002M-DGGY000	11.5x13x1.4	137FBGA
					2.65V	1.8V	x8	x16	KAG006003A-D115000	10.5x13x1.4	107FBGA
					2.65V	1.8V	x8	x32	KAG00600SA-D115000	10.5x13x1.4	137FBGA
					2Gb	1Gb	NNDD1G1G512512	1.8V	1.8V	x8	x32
			2.65V	1.8V	x8	x32	KBE00S00AA-D435000	10.5x13x1.4	137FBGA		
			2.65V(L)	3.0V	x8	x32	KBE00100GM-431000	11.5x13x1.4	137FBGA		

NOTES:

1. N = NAND, D= DRAM memory combination indicates the type, density, and number of die stacks in the MCP. (Ex. NDD256256256 = 256Mb NAND + 256Mb DRAM + 256Mb DRAM).
2. When ordering Tape and Reel, please indicate by the letter "T" on the 3rd to last field in the part number. (Ex. K5D5629ACC-D090T00)
3. (D) Denotes DDR SDRAM packaged in MCP
4. (L) Denotes Large Block NAND packaged in MCP

MCP: NOR/SRAM AND NOR/UtRAM

DENSITY		Memory	VCC (V)				ORGANIZATION			PACKAGE INFORMATION	
FLASH	SRAM	Combination	FLASH	SRAM	FLASH	SRAM	BOOT	NOR OPR.	Part No.	Size	Type
32Mb	4Mb	RS3204	3.0V	3.0V	x8/x16	x8/x16	BOTTOM	Async. No Page	K5A3240CBM-F755000	8x11x1.2	69FBGA
	8Mb	RS3208	3.0V	3.0V	x8/x16	x8/x16	TOP	Async. No Page	K5A3281CTM-D755000	8x11x1.2	69FBGA
			3.0V	3.0V	x8/x16	x8/x16	BOTTOM	Async. No Page	K5A3281CBM-D755000	8x11x1.2	69FBGA
32Mb	8Mb	RS3208	3.0V	3.0V	x8/x16	x8/x16	TOP	Async. No Page	K5A3281CTM-D755000	8x11x1.2	69FBGA
			3.0V	3.0V	x8/x16	x8/x16	BOTTOM	Async. No Page	K5A3281CBM-D755000	8x11x1.2	69FBGA
64Mb	32Mb	RU6432	3.0V	3.0V	x16	x16	TOP	Async. No Page	K5J6332CTM-D770000	8x11.6x1.4	69FBGA
			3.0V	3.0V	x16	x16	BOTTOM	Async. No Page	K5J6332CBM-D770000	8x11.6x1.4	69FBGA
128Mb	32Mb	RU12832	3.0V	3.0V	x16	x16	TOP/BOT	Async. Page Mode	K5L2931CAM-D770000	8x11.6x1.2	64FBGA
			1.8V	1.8V	x16	x16	TOP	Sync Mux	K5N2828ATM-SS66000	8.0x9.2x1.2	56FBGA
128Mb	64Mb	RU12864	3.0V	3.0V	x16	x16	TOP/BOT	Async Page Mode	K5L2963CAM-D770000	8x11.6x1.2	64FBGA
			1.8V	1.8V	x16	x16	TOP	Sync	K5L2864ATM-DF66000	8x12x1.4	115FBGA
256Mb	64Mb	RU25664	3.0V	3.0V	x16	x16	TOP/BOT	Async Page Mode	K5L5563CAM-D770000	8x11.6x1.2	84FBGA
256Mb	128Mb	RU256128	1.8V	2.6/1.8V	x16	x16	TOP/BOT	Async Page Mode	K5L5527CAM-D770000	8x11.6x1.2	84FBGA

NOTES:

1. R= NOR, S= SRAM, U= UTRAM Memory combination indicates the type, density, and number of die stacks in the MCP. (Ex. RRU646432 = 64Mb NOR + 64Mb NOR + 32Mb UTRAM).
2. When ordering Tape and Reel, please indicate by the letter "T" on the 3rd to last field in the part number. (Ex. K5D5629ACC-D090T00)
3. All NOR Flash have demuxed Add/Data lines unless otherwise indicated in NOR OPR column.
4. All packages are pin compatible to Spansion's MCP pin out.

MCP: OneNAND™/DRAM

DENSITY		Memory Combination	VCC (V)		ORGANIZATION		Part No.	Size	Type
FLASH	DRAM		FLASH	DRAM	FLASH	DRAM			
256Mb	256Mb	OD1256256	3.3V	3.3V	x16	x32	K5R5658VCM-DR75000	8x13x1.4	188FBGA
			3.3V	1.8V	x16	x32	K5R5658LCM-DR75000	8x13x1.4	188FBGA
512Mb	512Mb	OD512512	1.8V	1.8V	x16	x16(D)	K5W1212ACM-DK75000	11.5x13x1.4	167FBGA
			1.8V	1.8V	x16	x32	K5R1213ACA-DK75000	11.5x13x1.0	202FBGA
1Gb	512Mb	OD1G512	1.8V	1.8V	x16	x16	K5R1G12ACM-DK90000	11.5x13x1.4	167FBGA
			1.8V	1.8V	x16	x32	K5R1G13ACA-DK75000	11.5x13x1.0	202FBGA
3Gb	512Mb	O00D1G1G1G512	1.8V	1.8V	x16	x32	KBR00Y00EA-D434000	11.5x13x1.4	167FBGA

NOTES:

1. O= OneNAND, D= DRAM Memory combination indicates the type, density, and number of die stacks in the MCP. (Ex. OD1G512 = 1Gb OneNAND + 512Mb SDRAM).
2. When ordering Tape and Reel, please indicate by the letter "T" on the 3rd to last field in the part number. (Ex. K5R5658VCM-DR75T00)
3. (D) Denotes DDR SDRAM packaged in MCP.
4. All OneNAND Flash have demuxed Add/Data lines.

MCP: NOR/DRAM

DENSITY		Memory	VCC (V)				ORGANIZATION			PACKAGE INFORMATION	
FLASH	SRAM	Combination	FLASH	SRAM	FLASH	SRAM	BOOT	NOR OPR.	Part No.	Size	Type
64Mb	256Mb	RD64256	3.0V	2.6V	x16	x32	TOP	Async. No Page	K5H6358ETA-D775000	10x11x0.8	145FBGA
64Mb	512Mb	RD64512	3.0V	1.8V	x16	x32(D)	TOP	Async. No Page	K5Y6313LTM-D790000	10.5x12x1.4	151FBGA
512Mb	256Mb	RRD512256	1.8V	1.8V	x16	x16(D)	TOP	Sync MLC	KAS35000AM-S44Y000	11x10x1.3	133FBGA
512Mb	512Mb	RRD256256512	1.8V	1.8V	x16	x16	T+B	Sync	KAS280003M-DUU5000	11.5x13x1.4	167FBGA

NOTES:

1. R= NOR, D= DRAM Memory combination indicates the type, density, and number of die stacks in the MCP. (Ex. RDD32128128 = 32Mb NOR + 128Mb DRAM + 128Mb DRAM).
2. When ordering Tape and Reel, please indicate by the letter "T" on the 3rd to last field in the part number. (Ex. K5H6358ETA-D775T00)
3. All NOR Flash have demuxed Add/Data lines.

3.5" HARD DISK DRIVES (HDD)

		Capacity	RPMs	Model	# of Heads	# of Disks	Interface	Buffer Size	Seek Time	MTBF		
SpinPoint V Series	V80 Series PATA/2MB	120GB	5400 rpm	SV1203N	3	2	ATA-133	2MB	8.9ms	500K hrs		
		160GB	5400 rpm	SV1604N	4	2	ATA-133	2MB	8.9ms	500K hrs		
	V120 CE Series	250GB	5400 rpm	HA250JC	4	2	ATA-133	2MB	8.9ms	500K hrs		
SpinPoint P Series	P40 Series PATA/2MB	40GB	7200 rpm	SP0411N	1	1	ATA-133	2MB	10ms	500K hrs		
		40GB	7200 rpm	SP0401N	1	1	ATA-133	2MB	10ms	500K hrs		
	SATA 1.5Gb/s	40GB	7200 rpm	SP0411C	1	1	S-ATA 1.5G	2MB	10ms	500K hrs		
		P80 Series PATA/2MB	80GB	7200 rpm	SP0802N	2	1	ATA-133	2MB	8.9ms	500K hrs	
			80GB	7200 rpm	SP0822N	2	1	ATA-133	2MB	8.9ms	500K hrs	
			120GB	7200 rpm	SP1203N	3	2	ATA-133	2MB	8.9ms	500K hrs	
			160GB	7200 rpm	SP1604N	4	2	ATA-133	2MB	8.9ms	500K hrs	
			160GB	7200 rpm	SP1624N	4	2	ATA-133	2MB	8.9ms	500K hrs	
			PATA/8MB	80GB	7200 rpm	SP0812N	2	1	ATA-133	8MB	8.9ms	500K hrs
				80GB	7200 rpm	SP0842N	2	1	ATA-133	8MB	8.9ms	500K hrs
	120GB	7200 rpm		SP1213N	3	2	ATA-133	8MB	8.9ms	500K hrs		
	160GB	7200 rpm		SP1614N	4	2	ATA-133	8MB	8.9ms	500K hrs		
	SATA 1.5Gb/s	160GB	7200 rpm	SP1644N	4	2	ATA-133	8MB	8.9ms	500K hrs		
		80GB	7200 rpm	SP0812C	2	1	S-ATA 1.5G	8MB	8.9ms	500K hrs		
		120GB	7200 rpm	SP1213C	3	2	S-ATA 1.5G	8MB	8.9ms	500K hrs		
		160GB	7200 rpm	SP1614C	4	2	S-ATA 1.5G	8MB	8.9ms	500K hrs		
	P80 SD Series SATA 3.0Gb/s	40GB	7200 rpm	HD040GJ	1	1	S-ATA 3G	8MB	8.9ms	500K hrs		
		80GB	7200 rpm	HD080HJ	2	1	S-ATA 3G	8MB	8.9ms	500K hrs		
		120GB	7200 rpm	HD120IJ	3	2	S-ATA 3G	8MB	8.9ms	500K hrs		
		160GB	7200 rpm	HD160JJ	4	2	S-ATA 3G	8MB	8.9ms	500K hrs		
	P120 Series PATA/8MB	200GB	7200 rpm	SP2014N	4	2	ATA-133	8MB	8.9ms	500K hrs		
250GB		7200 rpm	SP2514N	4	2	ATA-133	8MB	8.9ms	500K hrs			
SATA 3.0Gb/s	200GB	7200 rpm	SP2004C	4	2	S-ATA 3G	8MB	8.9ms	600K hrs			
	250GB	7200 rpm	SP2504C	4	2	S-ATA 3G	8MB	8.9ms	600K hrs			
SpinPoint T Series	T133 Series PATA/8MB	300GB	7200 rpm	HD300LD	6	3	ATA-133	8MB	8.9ms	600K hrs		
		400GB	7200 rpm	HD400LD	6	3	ATA-133	8MB	8.9ms	600K hrs		
	SATA 3.0Gb/s	300GB	7200 rpm	HD300LJ	6	3	S-ATA 3G	8MB	8.9ms	600K hrs		
		400GB	7200 rpm	HD400LJ	6	3	S-ATA 3G	8MB	8.9ms	600K hrs		

2.5" HARD DISK DRIVES (HDD)

		Capacity	RPMs	Model	# of Heads	# of Disks	Interface	Buffer Size	Seek Time	MTBF
SpinPoint M Series	M40 Series	40GB	5400 rpm	MP0402H	2	1	ATA-6	8MB	12ms	330K hrs
		60GB	5400 rpm	MP0603H	3	2	ATA-6	8MB	12ms	330K hrs
		80GB	5400 rpm	MP0804H	4	2	ATA-6	8MB	12ms	330K hrs
	M40S Series SATA 1.5Gb/s	40GB	5400 rpm	HM040HI	2	1	S-ATA	8MB	12ms	330K hrs
		60GB	5400 rpm	HM060II	3	2	S-ATA	8MB	12ms	330K hrs
		80GB	5400 rpm	HM080JI	4	2	S-ATA	8MB	12ms	330K hrs
	M60 Series	40GB	5400 rpm	HM040HC	2	1	ATA-6	8MB	12ms	330K hrs
		60GB	5400 rpm	HM060HC	2	1	ATA-6	8MB	12ms	330K hrs
		80GB	5400 rpm	HM080IC	3	2	ATA-6	8MB	12ms	330K hrs
		100GB	5400 rpm	HM100JC	4	2	ATA-6	8MB	12ms	330K hrs
		120GB	5400 rpm	HM120JC	4	2	ATA-6	8MB	12ms	330K hrs
	SATA 1.5Gb/s (3.0Gb/s)	40GB	5400 rpm	HM041HI	2	1	S-ATA	8MB	12ms	330K hrs
		60GB	5400 rpm	HM060HI	2	1	S-ATA	8MB	12ms	330K hrs
		80GB	5400 rpm	HM080II	3	2	S-ATA	8MB	12ms	330K hrs
		100GB	5400 rpm	HM100JI	4	2	S-ATA	8MB	12ms	330K hrs
120GB		5400 rpm	HM120JI	4	2	S-ATA	8MB	12ms	330K hrs	

SN-M242D

Basic Specs	Seek Time (Average)	Drive Speed	Supported Disc	Media Capacity
Horizontal/vertical drive mounting	ROM/RW:120ms	Read	CD	CD
Solenoid tray loading	DVD-Single:130ms	Speed	CD-ROM Max. 24X (3,600KB/sec)	CD-DA; CD-ROM; CD-ROM
Dimensions (WxHxD in mm):	DVD-Dual:140ms		CD-RW Max. 24X (3,600KB/sec)	XA; CD-I; CD-Extra/CD-Plus;
Interface: P-ATA	DVD-DL(±R):140ms		DVD-Single Max. 8X (10,800KB/sec)	Video-CD; CD-R; CD-RW &
2MB buffer memory	DVD±R/RW:140ms		DVD-Dual Max. 6 (10,800KB/sec)	HSRW; Super Audio CD; US & US+ RW
		Write	CD-R Max. 24X (3,600KB/sec)	DVD
		Speed	CD-RW Max. 10X (1,500KB/sec)	DVD-ROM; DVD-Dual; DVD-Video; DVD-R; DVD+R;
			US-RW Max. 24X (3,600KB/sec)	DVD+RW; DVD-RW
			US+ CD-RW Max. 24X (3,600KB/sec)	DVD
				5/9/10/18 G DVD-Single/Dual (PTP, OTP) (read only)
				3.9/4.7 G DVD-R (read only)
				4.7G DVD+R (read only)
				DVD±RW (read only)
				80mm DVD

SN-S082D

Basic Specs	Seek Time (Average)	Drive Speed	Supported Disc	Media Capacity
Horizontal/vertical drive mounting	CD-ROM:130ms	Read	CD	CD
Solenoid tray loading	NS CD-RW:130ms	Speed	CD-ROM Max. 24X (3,600KB/sec)	650MB CD-ROM (read only)
Dimensions (WxHxD in mm):	HS/US CD-RW:130ms		CD-R Max. 24X (3,600KB/sec)	120mm/80mm CD
128 x 12.7 x 127	DVD-Single:130ms		NS CD-RW Max. 24x	800/700/650MB CD-Recordable (read & write)
Interface: P-ATA	DVD-Dual:150ms		HS/US CD-RW Max.24x	700/650MB CD-Rewritable (read & write)
2MB buffer memory	DVD-R/+R:150ms		DVD-Single Max. 8x	700/650MB High-Speed CD-Rewritable (read & write)
	DVD-RW/+RW:150ms		DVD-Double Max. 6x	700/650MB Ultra & Ultra+ Speed CD-Rewritable (read & write)
		Write	DVD-R/+R Max. 8x	
		Speed	DVD-RW/+RW Max. 6x	DVD
			DVD-RAM 5x	DVD-ROM; DVD-Video;
			CD-R Max. 24X (3,600KB/sec)	DVD-R; DVD+R; DVD±RW;
			NS CD-RW 4X (600KB/sec)	DVD+R DL; DVD-R DL;
			HS CD-RW Max. 10X (1,500KB/sec)	support DVD-R/RW CPRM (read/write); DVD-RAM (read only)
			US/US+ RW Max. 24X	
			DVD+R Max. 8X	
			DVD+RW Max. 8X (8x media) Max. 4x (4x media)	
			DVD+R DL Max. 6x	
			DVD-R Max. 8X	
			DVD-R DL Max, 6x	
			DVD-RW Max 6X (6x media), Max. 4x (4x media)	

SH-S182D

Basic Specs	Seek Time (Average)	Drive Speed	Supported Disc	Media Capacity	
Horizontal/vertical drive mounting	CD-ROM/R/RW:110ms	Read	DVD-ROM Max.16X (21,600KB/sec)	CD	120mm CD-ROM (read only)
Solenoid tray loading	DVD-Single:130ms	Speed	DVD-RAM Max.12X (16,200KB/sec)	CD	80mm CD (horizontal mount only)
Dimensions (WxHxD in mm):	DVD-Dual:140ms		DVD-Dual	Video-CD; CD-R; CD-RW	800/700/650MB CD-Recordable (read & write)
148.2 x 42 x 170	DVD±R/RW:140ms		DVD± RW Max. 8X (10,800KB/sec)		700/650MB Low/High/Ultra-Speed CD Rewritable (read & write)
Interface: P-ATA			DVD±R Max. 12X (16,200KB/sec)		
2MB buffer memory			DVD±R DL Max. 8X (10,800KB/sec)		
			CD-ROM Max. 48X (7,200 KB/sec)		
			CD-R/CD-RW Max. 40X (6,000 KB/sec)		
		Write	DVD-RAM Max. 12X (16,200 KB/sec)	DVD	5/9/10/18G DVD-Single/Dual (PTP, OTP) (read only)
		Speed	DVD+R Max. 18X (24,300KB/sec)	DVD-R; DVD+R; DVD_R DL;	3.9/4.7G DVD-ROM (read only)
			DVD-R Max.18X (24,300KB/sec)	DVD±RW; DVD-RAM	DVD±RW, DVD±R, DVD±R DL (read & write)
			DVD±RW Max. 8X (10,800KB/sec),		80mm DVD (horizontal mount only)
			6X (8,100KB/sec)		
			DVD±R Double L Max. 8X (10,800/sec)		
			CD-R Max. 48X (7,200KB/sec)		
			HS-RW Max. 10X (1,500KB/sec)		
			US-RW Max. 32X (4,800KB/sec)		

SH-S182M

Basic Specs	Seek Time (Average)	Drive Speed	Supported Disc	Media Capacity	
Horizontal/vertical drive mounting	CD-ROM/R/RW:110ms	Read	DVD-ROM Max.16X (21,600KB/sec)	CD	120mm CD-ROM (read only)
Solenoid tray loading	DVD-Single:130ms	Speed	DVD-RAM Max.12X (16,200KB/sec)	CD	80mm CD (horizontal mount only)
Dimensions (WxHxD in mm):	DVD-Dual:140ms		DVD-Dual	Video-CD; CD-R; CD-RW	800/700/650MB CD-Recordable (read & write)
148.2 x 42 x 170	DVD±R/RW:140ms		DVD± RW Max. 8X (10,800KB/sec)		700/650MB Low/High/Ultra-Speed CD Rewritable (read & write)
Interface: P-ATA			DVD±R Max. 12X (16,200KB/sec)		
(Light Scribe)			DVD±R DL Max. 8X (10,800KB/sec)		
2MB buffer memory			CD-ROM Max. 48X (7,200 KB/sec)		
			CD-R/CD-RW Max. 40X (6,000 KB/sec)		
		Write	DVD-RAM Max. 12X (16,200 KB/sec)	DVD	5/9/10/18G DVD-Single/Dual (PTP, OTP) (read only)
		Speed	DVD+R Max. 18X (24,300KB/sec)	DVD-R; DVD+R; DVD_R DL;	3.9/4.7G DVD-ROM (read only)
			DVD-R Max.18X (24,300KB/sec)	DVD±RW; DVD-RAM	DVD±RW, DVD±R, DVD±R DL (read & write)
			DVD±RW Max. 8X (10,800KB/sec),		80mm DVD (horizontal mount only)
			6X (8,100KB/sec)		
			DVD±R Double L Max. 8X (10,800/sec)		
			CD-R Max. 48X (7,200KB/sec)		
			HS-RW Max. 10X (1,500KB/sec)		
			US-RW Max. 32X (4,800KB/sec)		

SYSTEM LSI

SECTION B	PAGE
ASICs	3b – 5b
ASIC ORDERING INFORMATION	6b
LCD DRIVER ICs	7b – 8b
LCD DRIVER IC ORDERING INFORMATION	9b
MOBILE APPLICATION PROCESSORS	10b
CMOS IMAGE SENSORS	10b
MICROCONTROLLERS	11b-14b
MICROCONTROLLER ORDERING INFORMATION	15b
SERIAL EPROMS	16b

ASIC FOUNDRY TECHNOLOGY LIBRARY

Technology		Process	Core Voltage	I/O Voltage	Cell Size
G/HS/LP/RF/MS	L09	90nm	1.0~1.2V	1.8~3.3V	SRAM : 0.79~1.25 um ²
G/HS/LP/RF	L06	65nm (Common Platform)	1.0~1.2V	1.8V~2.5V	SRAM : 0.499~0.676 um ²
Logic	L13	0.13um	1.2~1.5V	2.5~3.3V	SRAM : 1.85~2.43 um ²
(Embedded DRAM)	LD13	0.13um	1.0~1.5V	2.5~3.3V	DRAM : 0.34 um ²
MDL	LD18	0.18um	1.8V	3.3V/5V	DRAM : 0.45 um ²
(Embedded Flash)	LFS13	0.13um	1.0~1.5V	2.5~3.3V	Flash : <0.28 um ²
MFL	LF18	0.18um	1.8V	3.3V/5V	Flash : 0.63 um ²
(Embedded Flash)	LF13	0.13um	1.0~1.5V	2.5~3.3V	Flash : 0.45 um ²
BiCMOS	BH3515	0.35um	15V	3.3V/5V	
	BH3505	0.35um	5V	3.3V/5V	
	BH1805	0.18um	1.8V	3.3V/5V	
	BH1305	0.13um	1.2V~1.5V	2.5/3.3V	
RF (SiGe BiCMOS)	BS3550	0.35um	3.3V	3.3V/5V	ft : 50GHz
	BS1850	0.18um	1.8V	2.5~3.3V	ft : 120GHz
	BS13200	0.13um	1.2V~1.5V	2.5~3.3V	ft : 200GHz

ASIC TECHNOLOGY LIBRARY

Technology	Library		Core Voltage	Core Voltage	I/O Receive	I/O Drive	Maximum
Name	Name(s)	Description	(Nominal) (V)	Tolerance (V)	Voltage (V)	Voltage (V)	Vgs (V)
LF13	MFL150	0.13um Merged Flash Memory with Logic	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
LD13	MDL150	0.13um Merged DRAM with Logic	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
L13	STDH150	0.13um High-Speed Standard Cell with L13HS	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STDH150HD	0.13um High-Density Standard Cell with L13HS	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STD150	0.13um High-Density Standard Cell with L13G	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STD150HS	0.13um High-Speed Standard Cell with L13G	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STD150HVT	"0.13um Low-Leakage and High-Density Standard Cell with L13G High-VTH option"	1.2	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STD150OD	"0.13um High-Speed Standard Cell with L13G Over-Drive option"	1.5	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STD150HVTOD	"0.13um Low-Leakage and High-Density Standard Cell with L13G High-VTH and Over-Drive option"	1.5	-0.1	2.5/3.3/5.0T	2.5/3.3	3.3
	STDL150	"0.13um Low Leakage and High-Density Standard Cell with L13LP"	1.5	-0.1	1.5/2.5/3.3/5.0T	1.5/2.5/3.3	3.3
LF18	MFL130	0.18um Merged Flash Memory with Logic	1.8	-0.15	1.8/2.5/3.3/5.0T	1.8/2.5/3.3	3.3
LD18	MDL130	0.18um Merged DRAM with Logic	1.8	-0.15	1.8/2.5/3.3/5.0T	1.8/2.5/3.3	3.3
L18	STD130	0.18um High-Density Standard Cell with L18	1.8	-0.15	1.8/2.5/3.3/5.0T	1.8/2.5/3.3	3.3
	STD131	0.18um High-Speed Standard Cell with L18	1.8	-0.15	1.8/2.5/3.3/5.0T	1.8/2.5/3.3	3.3
	STDL130	"0.18um Low Leakage and High-Density Standard Cell with L18LP"	1.8	-0.15	1.8/2.5/3.3/5.0T	1.8/2.5/3.3	3.3
	STDL131	"0.18um Low Leakage and High Performance Standard Cell with L18LP"	1.8	-0.15	1.8/2.5/3.3/5.0T	1.8/2.5/3.3	3.3
L25	STD110	0.25um High-Density Standard Cell	2.5	-0.2	2.5/3.3/5.0	2.5/3.3	3.3
	STDM110	0.25um Low Voltage High-Density Standard Cell	1.8	-0.15	2.5/3.3/5.0	2.5/3.3	3.3
	STD111	0.25um High Performance Standard Cell	2.5	-0.2	2.5/3.3/5.0	2.5/3.3	3.3
LF35	MFL90	0.35um Merged Flash Memory with Logic	3.3	-0.3	3.3/5.0	3.3	3.3
L35H	STDH90	0.35um High-Density Standard Cell with dual gate oxide	3.3	-0.3	3.3/5.0	3.3/5.0	5
L35	STD90	0.35um High-Density Standard Cell	3.3	-0.3	3.3/5.0	3.3	3.3

ASIC CORE LIBRARY

I/O LIBRARY

		0.35μm	0.25μm	0.18μm	---0.13μm---		
		STD90 /STD90M	STD110	STD130	STD150HS	STD150G	STD150LP
I/O	CMOS, TTL I/O Buffers	A	A	A	A	A	A
I/O-IP	3/5V tolerant	A	A	A	A	A	A
	Slew control	A	A	A	A	A	A
	PVT impedance control	NA	G	G	G	G	G
	True 5V I/O	A	NA	NA	NA	NA	NA
	AGP4X	NA	NA	NA	NA	NA	NA
	ATA5	A	A	AR	AR	AR	AR
	ATA6	NA	NA	AR	G	AR	AR
	CardBus/PCI	AR	AR	AR	AR	AR	AR
	GTL	A	AR	AR	G	G	G
	HSTL	G	G	AR	G	G	G
	IEEE1284	A	NA	NA	NA	NA	NA
	LVDS	G	AR	AR	AR	AR	AR
	OSC (KHz)	A	A	A	A	A	A
	OSC (MHz)	A	A	A	A	A	A
	PCI	A	A	AR	AR	AR	AR
	PECL	AR	AR	AR	G	G	G
	SSTL	AR	A	AR	AR	AR	AR
	Ultra2- SCSI (LVD)	D	NA	NA	NA	NA	NA
USB1.1	A	A	A	A	A	A	

NOTES: * I/O review sheet (I/O interface for I/O-IP review sheet in NCTS (New Cell Traveler Sheet))

- | | |
|---|---|
| 1 A = Available | 6 E = Under development (design and layout will be finished by the date) |
| 2 AR = Available upon Request | 7 F = Scheduled (design and layout will be finished by the date) |
| 3 B = Under test (test will be finished by the date) | 8 G = Will be developed based upon customer's request (SEC has more than 90% confidence for silicon result) |
| 4 C = In fabrication line (fab. out date) | 9 TBD = To Be Determined |
| 5 D = GDS is available but silicon has not been verified (SEC has more than 90% confidence in silicon result) | 10 NA = Not Available |
| | * For further information, please contact: jhprk@samsung.co.kr |

ASIC LEGACY FOUNDRY

Product	Technology	Feature	Production	Comments
CMOS Legacy	2.0μm ~ 0.5μm	S/D Poly, D/TLM	Foundry	5V with Mixed Signal (Optional)
Hi Voltage CMOS	0.8μm ~ 0.13μm	S/D Poly, D/TLM	Foundry	12, 13V, 15V, 20V, 30V, 45V
EEPROM	0.8μm ~ 0.35μm	D Poly, D/TLM	Foundry	
CIS	0.8μm ~ 0.5μm	S/D Poly, D/TLM	Foundry	B&W, RGB, Full Color

ASIC DIGITAL CORES

DSP Cores	CPU Cores	Interface Cores	BUS Architecture
<ul style="list-style-type: none"> SSP1820 (OAK Compatible 16-Bit DSP Core) TeakLite (TeakLite Compatible 16-Bit DSP Core) Teak (Teak Compatible 16-Bit DSP Core) 	<ul style="list-style-type: none"> SAM17(8)X (ARM7TDMI Compatible RISC Processor) SAM40X (ARM9TDMI Compatible RISC Processor) SAM42X (ARM920T Compatible RISC Processor) SAM44X (ARM940T Compatible RISC Processor) 	<ul style="list-style-type: none"> USB1.1 Function Controller USB2.0 Function Controller USB1.1 Host Controller USB FS OTG Controller USB2.0 Phy (L18) USB2.0 Phy (L13) IEEE1394a Link IEEE1394a DV Link IEEE1394a Phy (L18) PCI Bridge PCI Device PCI2AHB Ethernet MAC (10/100) 	<ul style="list-style-type: none"> AMBA2.0 (Micro Pack v2.0) AMBA3.0 (ADK)
	<ul style="list-style-type: none"> ARM920T (ARM920T Compatible RISC Processor) ARM940T (ARM940T Compatible RISC Processor) ARM926EJS (ARM926EJ-S Compatible RISC Processor) ARM1020E (ARM1020E Compatible RISC Processor) ETM9 (Embedded Trace Macrocell for ARM9 core) ETM7 (Embedded Trace Macrocell for ARM7 core) ARM946E-S (ARM946E-S Compatible RISC Processor) ARM7TDMI-S (ARM7TDMI-S Compatible RISC Processor) ARM1136JF-S (ARM1136JF-S Compatible RISC Processor) 		

ASIC MIXED-SIGNAL IPs

High Resolution & Performance for Mixed-Signal Cores (based on proven silicon)	Low-Voltage Mixed-Signal Cores for SoC	Full Customer Support Specific Cores
<ul style="list-style-type: none"> ADC: 1.8V 8-bit 250MHz ADC 1.8V 10-bit 150MHz ADC 3.3V 14-bit 80MHz ADC DAC: 3.3V 8-bit 300MHz DAC 3.3V 12-bit 80MHz ADC 3.3V 14-bit 40MHz DAC 1.2V 8-bit 80MHz DAC PLL: 3.3V 800MHz FSPLL 1.8V 200MHz Pixel Clock Gen 1.2V 230MHz Dithered PLL CODEC: 3.3V 16-bit Audio DAC 3.3V 16-bit Audio CODEC 	<ul style="list-style-type: none"> ADC: 1.2V 8-bit 30MHz ADC 1.2V 10-bit 100MHz ADC DAC: 1.2V 8-bit 2MHz DAC PLL: 1.2V 100M/300M/500M FSPLL CODEC: 2.5V 16-bit Audio DAC 	<ul style="list-style-type: none"> Support for various kinds of MSC architectures The shortest TAT for customer-specific cores

ASIC LINE-UP TABLE FOR COMPILED MEMORY

	STD90		STD110 MDL120		STD130		STDL130		STDH150		STD150		STDL1	
	L35	L25	L25	LD25	L18	L18	L18L	L18L	L13HS	L13HS	L13G	L13G	L13LP	L13LP
	HD	HD	LP	HD	HD	LP	HD	LP	HD	LP	HD	LP	HD	LP
SPSRAM	A	A	A	A	A	A	A	A	A	NA	A	A	AR	A
SPSRAMBW	A	A	NA	A	A	A	A	A	A	NA	A	A	AR	A
SPSRAMR	NA	NA	NA	NA	A	NA	A	NA	A	NA	A	A	AR	A
DPSRAM	A	A	A	A	A	A	A	A	A	NA	A	A	AR	A
DPSRAMBW	NA	NA	NA	NA	A	A	A	A	A	NA	A	A	AR	A
DPSRAMR	NA	NA	NA	NA	NA	NA	NA	NA	A	NA	A	A	AR	A
SPARAM	A	A	A	NA	NA	NA	NA	NA	NA	NA	NA	NA	AR	NA
SPARAMBW	NA	NA	NA	NA	A	NA	A	NA	NA	NA	NA	NA	AR	NA
ARFRAM	NA	A	NA	NA	A	NA	NA	NA	NA	NA	NA	NA	NA	NA
SRFRAM	NA	NA	NA	NA	NA	NA	NA	NA	A	NA	A	NA	A	NA
DROM @ Active	A	A	A	A	A	NA	A	NA	NA	NA	NA	NA	NA	NA
MIROM @ Met-2	A	A	A	A	A	NA	A	NA	NA	NA	NA	NA	NA	NA
VROM @ Via-1	NA	NA	NA	NA	NA	NA	NA	NA	A	NA	A	NA	A	NA
FIFO	NA	NA	NA	NA	A	NA	A	NA	AR	NA	AR	NA	AR	NA
CAM	NA	NA	NA	NA	A	NA	A	NA	AR	NA	A	NA	AR	NA
HCSPSRAM	NA	NA	NA	NA	A	NA	NA	NA	AR	NA	A	NA	AR	NA
HCVROM @ Via-1	NA	NA	NA	NA	A	NA	NA	NA	AR	NA	A	NA	AR	NA

NOTES: A = Available AR = Available Upon Request E = Under Development (design and layout will be finished by the date) NA = Not Available

ASIC ORDERING INFORMATION

S	6	X	X	X	X	X	X	X	X	-	X	X	X	X	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1. System LSI (S)			12~14. Package Type								(14) Packing				
2. Large Classification: ASIC (6)			- In Case of PKG (12) Package Type A : SDIP B : BUMP BIZ C : CHIP BIZ E : LQFP J : ELP K : TR N : COB Q : QFP S : SOP T : TQFP W : WAFER X : ETQFP								- In Case of TAB / COF (12)(13) Film Type 00~49 → TAB 50~99 → COF				
3. Small Classification											(14) Revision				
A : STN (Character)		B : STN (Graphic)										1st Version → X			
C : TFT (Large)		D : TFT (Mobile)										15. Custom			
F : TFT (Midsmall)		E : OELD										0 : No Grinding 1 : 250±10um			
P : PDI (DUAL)		T : TCON										5 : 200±10um			
V : Process Vehicle											8 : 300±10um (CHIP BIZ) 9 : 280±10um				
4~7.			(13) Reserved												
Serial No			- PKG Option 0 : none 1 : Special Handling 1 2 : Special Handling 2 3 : Special Handling 3 A : Test Condition 1 B : Customer Option 1 C : Customer Option 2 D : Customer Option 3 E : Customer Option 4 G : Customer Option 6 H : Customer Option 7 J : Customer Option 8 K : Customer Option 9 L : Customer Option 10 M : Customer Option 11 N : Customer Option 12 P : Customer Option 13								A : 300±10um				
8. Version											C : 300±10um (Wafer)				
A~Z											G : 375±10um (CHIP BIZ) J : 425±10um				
*1st Version → X											K : 400±10um L : 450±10um				
9~10. Mask Option											M : 470±10um (Wafer) N : 470±10um				
- STN (Character)											R : 350±10um (Wafer) U : 610±10um				
00~99 : Font											V : 500±10um (CHIP BIZ)				
- STN (Graphic)											W : 425±10um (Wafer)				
Mask Option											X : 425±10um (CHIP BIZ)				
- TFT Device											Y : 470±10um (CHIP BIZ)				
Mask Option			- WAFER 0 : BUMP 1 : NO BUMP								Z : No Grinding (CHIP / Wafer)				
11. " - "															

STN CHARACTER LCD DRIVER ICs

Part Number	Segment	CG				Interface (Bit)	VDD (V)	Vlcd (Max. V)	DC/DC Convert (Times)	Package
		Common	ROM (Ch.)	CGRAM (Ch.)						
S6A0031	80	8	10160 (254)	80 (2)	8-Apr	2.4~5.5	6		Au bump chip	
S6A0032	80	16	10160 (254)	80 (2)	8-Apr	2.4~5.5	6		Au bump chip	
S6A0065			40			2.7~5.5	13		Bare die/64QFP	
S6A0069	40	16	10080 (236)	512 (8)	8-Apr	2.7~5.5	13		Bare die/80QFP	
S6A0070	80	16	8320 (224)	512 (8)	8-Apr	2.7~5.5	10		Bare die/Au bump chip	
S6A0071	60	32	8400 (240)	512 (8)	8-Apr	2.4~5.5	13	2	Au bump chip/TCP	
S6A0072	40	16	9600 (240)	160 (4)	8-Apr	2.7~5.5	11		Au bump chip	
S6A0073	60	34	9600 (240)	512 (8)	4-Jan	2.7~5.5	13	2~3	Bare die	
S6A0074	80	34	9600 (240)	512 (8)	4-Jan	2.7~5.5	13	2~3	Bare die	
S6A0075	100	34	9600 (240)	512 (8)	4-Jan	2.7~5.5	13	2~3	Bare die	
S6A0078	120	34	9600 (240)	512 (8)	4-Jan	2.7~5.5	13	2~3	Bare die/TCP	
S6A0079	120	34	9600 (240)	512 (8)	4-Jan	2.7~5.5	13	2~3	Bare die	
S6A0090	64	26	10240 (256)	160 (4)	4-Jan	2.4~5.5	11	2~3	Au bump chip/TCP	
S6A0093	80	26	10240 (256)	320 (8)	4-Jan	2.4~5.5	6	4	Au bump chip/TCP	
S6A0094*	80	34	21760 (544)	80 (6)	4-Jan	2.2~3.6	7	4	Au bump chip	
S6A0067	80					2.7~5.5	10		Bare die/100QFP	
S6A2068	60	16	8320 (224)	512 (8)	8-Apr	2.7~5.5	10		Bare die/	

NOTES: Devices marked with an asterisk (*) are under development.
TCP (Tape Carrier Package)

Bare die is equivalent term with bare chip, pellet or die.
COF (Chip On Film) is available in case of TCP.

STN GRAPHIC LCD DRIVER ICs

Part Number	Segment	Common	DDRAM (Bits)	Interface (Bit)	VDD (V)	Vlcd (Max. V)	DC/DC Convert (Times)	Package
S6B0086	V	80		4-Jan	2.7~5.5	28		
S6B0715	100	33	8580	8-Jan	2.4~5.5	15	2~4	Au bump chip/TCP
S6B0717	100	55	6500	8-Jan	2.4~5.5	15	2~5	Au bump chip/TCP
S6B0718	104	81	9256	8-Jan	2.4~3.6	15	3~6	Au bump chip/TCP
S6B0719	160	105	16800	8-Jan	2.4~3.6	15	3~6	Au bump chip/TCP
S6B0723	132	65	8580	8-Jan	2.4~5.5	15	2~5	TCP
S6B0724	132	65	8580	8-Jan	2.4~5.5	15	2~5	Au bump chip
S6B0725	104	65	6860	8-Jan	2.4~3.6	15	2~5	Au bump chip
S6B0728	132	128	16896	8-Jan	2.4~3.6	15	3~7	Au bump chip/TCP
S6B0741	128	129	33024	8-Jan	1.8~3.3	15	3~6	TCP
S6B0755	128	65	8320	8-Jan	1.8~3.3	15	3~5	Au bump chip/TCP
S6B0756	96	65	6240	8-Jan	1.8~3.3	12	2~4	Au bump chip
S6B0759	128	81	10368	8-Jan	1.8~3.3	15	3~6	Au bump chip/TCP
S6B2400	96	65	12480	8-Jan	1.8~3.3	12	3~5	Au bump chip
S6B0794	160	160		8-Apr	2.4~5.5	32		Au bump chip/TCP
S6B0796	240	240		8-Apr	2.4~5.5	32		Au bump chip/TCP
S6B1713	132	65	8580	8-Jan	2.4~5.5	15	2~5	Au bump chip/TCP

NOTES: Bare die is equivalent term with bare chip, pellet or die.
TCP (Tape Carrier Package)
COF (Chip On Film) is available in case of TCP.

STN GRAPHIC COLOR LCD DRIVER ICs

Device Name	Segment	Common	Color Depth	DDRAM (Bits)	VDD (V)	Vlcd (Max. V)	DC/DC Convert	
							(Times)	Package
S6B33A1	132	160	256/4k	266,112	1.8~3.6	20	V	Au bump chip
S6B33A2	128	129	256/4k	196,608	1.8~3.3	20	V	Au bump chip
S6B33B0	144	177	256/4k/65k	405,504	1.8~3.3	20	V	Au bump chip
S6B3300*	104	80	256/4k	99,840	1.8~3.3	15	V	Au bump chip

NOTES: Devices marked with an asterisk (*) are under development.
 TCP (Tape Carrier Package)
 Bare die is equivalent term with bare chip, pellet or die.
 COF (Chip On Film) is available in case of TCP.

STN GRAPHIC LCD DRIVER ICs

Part		Bit Map Area			Vlcd		Package
Number	RGB	Gate	Color Depth	(RAM)	VCI(V)	(Max. V)	
S6D0110	132	176	260K	132*18*176	2.5~3.3	25V Max	Au bumped chip
S6D0114	132	176	260K	132*18*176	2.5~3.3	25V Max	Au bumped chip
S6D0117	132	132	260K	132*132*18	2.5~3.3	25V Max	Au bumped chip
S6D0118	176	240	260K	176*18*240	2.5~3.3	25V Max	Au bumped chip
S6D0123	132	176	260K	132*18*176	2.5~3.3	25V Max	Au bumped chip
S6D0129	240	320	260K	240*18*320	2.5~3.3	30V Max	Au bumped chip

NOTES: TCP (Tape Carrier Package)
 COF (Chip On Film) is available in case of TCP

LCD DRIVER IC ORDERING INFORMATION

S	6	X	X	X	X	X	X	X	X	-	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. System LSI (S)			11. " - "								(14) Packing			
2. Large Classification: LDI (6)			12~14. Package Type								- In Case of TAB / COF			
3. Small Classification			- In Case of PKG								(12)(13) Film Type			
A : STN (Character)		B : STN (Graphic)		C : CHIP BIZ		E : LQFP		B : BUMP BIZ		00~49 → TAB				
C : TFT (Large)		D : TFT (Mobile)		J : ELP		K : TR		E : LQFP		50~99 → COF				
F : TFT (Midsmall)		E : OELD		N : COB		Q : QFP		E : LQFP		(14) Revision				
P : PDI (DUAL)		T : TCON		S : SOP		T : TQFP		T : TQFP		1st Version → X				
V : Process Vehicle				W : WAFER		X : ETQFP		X : ETQFP		15. Back Lap				
4~7.			(13) Reserved											
Serial No.			- PKG Option								0 : No Grinding 1 : 250±10um			
8. Version			0 : none								5 : 200±10um			
A~Z			1 : Special Handling 1		2 : Special Handling 2		8 : 300±10um (CHIP BIZ)		9 : 280±10um					
*1st Version → X			3 : Special Handling 3		A : Test Condition 1		A : 300±10um							
9~10. Mask Option			B : Customer Option 1		C : Customer Option 2		C : 300±10um (Wafer)							
- STN (Character)			D : Customer Option 3		E : Customer Option 4		G : 375±10um (CHIP BIZ)		J : 425±10um					
00~99: Font			G : Customer Option 6		H : Customer Option 7		K : 400±10um		L : 450±10um					
- STN (Graphic)			J : Customer Option 8		K : Customer Option 9		M : 470±10um (Wafer)		N : 470±10um					
Mask Option			L : Customer Option 10		M : Customer Option 11		R : 350±10um (Wafer)		U : 610±10um					
- TFT Device			N : Customer Option 12		P : Customer Option 13		V : 500±10um (CHIP BIZ)							
Mask Option			- WAFER				W : 425±10um (Wafer)							
			O : BUMP		1 : NO BUMP		X : 425±10um (CHIP BIZ)							
							Y : 470±10um (CHIP BIZ)							
							Z : No Grinding (CHIP / Wafer)							

MOBILE APPLICATION PROCESSORS

Part Number	Max CPU(Cache) Freq	Memory Interface	Data Bus (bit)	Features	I/O Pins	Interrupt (Ext)	Timer/ Counter	Serial Interface	DMA	PKG	
S3C44B0	ARM7TDMI (8KB)	66MHz	ROM/SRAM SDRAM	8,16,32	Mono/Color/Gray STN Cont., 10 ADC x 8	71	31(8)	WDT/16TCx5 Internal 16TC	UARTx2 IIC/IIS	4-ch	160LOFP 160FBGA
S3C2412	ARM926EJ-S (8KB-I,8KB-D)	200/266MHz	ROM/SRAM SDRAM/mSDRAM NAND	8,16,32	TFT/STN(65K) LCD Cont., NAND Boot, 10 ADCx8(TSP), USB hostx2, USB device, SD(SDIO)/MMC	115	55(24)	WDT/16TCx4 Internal 16TC	UARTx3 SPIx2/IIC/IIS	4-ch	272FBGA
S3C2413	ARM926EJ-S (8KB-I,8KB-D)	266MHz	ROM/SRAM SDRAM/mSDRAM DDR/mDDR NAND/oneNAND	8,16,32	TFT/STN LCD Cont., ATA Interfaces, NAND Boot, 10 ADCx8(TSP), USB hostx2, USB device, SD(SDIO)/MMC, Camera I/F	129	55(24)	WDT/16TCx4 Internal 16TC	UARTx3 SPIx2/IIC/IIS	4-ch	289FBGA
S3C2440	ARM920T (16KB-I,16KB-D)	300MHz 400MHz	ROM/SRAM SDRAM/mSDRAM NAND	8,16,32	TFT/STN LCD Controller, NAND Boot, 10 ADCx8(TSP), USB hostx2, USB device, SD(SDIO)/MMC, Camera I/F AC97	130	59(24)	WDT/16TCx4 Internal 16TC	UARTx3 SPIx2/IIC/IIS	4-ch	289FBGA
SC32442	ARM920T (16KB-I,16KB-D)	300MHz 400MHz	Stacked with 32/64MB mSDRAM, 64/128MB NAND	8,16,32	TFT/STN LCD Controller, NAND Boot, 10 ADCx8(TSP), USB hostx2, USB device, SD(SDIO)/MMC, Camera I/F AC97	130	59(24)	WDT/16TCx4 Internal 16TC	UARTx3 SPIx2/IIC/IIS	4-ch	332FBGA
S3C24A0	ARM926EJ-S (16KB-I, 16KB-D)	266MHz	ROM/SRAM SDRAM/mSDRAM NAND	8,16,32	TFT/STN LCD Controller, AC97, Camera I/F, NAND Boot, 10 ADCx8(TSP), MPEG4 CODEC,SD(SDIO)/MMC 8bit Modem I/F(4KB dual), Memory Stick	32	60(19)	WDT/16TCx4 Internal 16TC	UARTx2(IrDA) SPI/IIC/IIS IrDA(v1.1)	4-ch	337FBGA
S3C2460	ARM926EJ-S (16KB-I,16KB-D) Teak DSP	266MHz	ROM/SRAM SDRAM/mSDRAM mDDR/NAND	8,16,32	TFT/STN LCD Controller, AC97, Camera I/F, NAND Boot, 10 ADCx8(TSP), MPEG4 CODEC,SD(SDIO)/MMC USB hostx2, USB device, USB OTG 2D,3D Graphic/Memory Stick	154	61(16)	WDT/16TCx4 Internal 16TC	UARTx3(IrDA) SPIx2/IIC/IIS IrDA(v1.1)	4-ch	416FBGA
S3C2443	ARM920T (16KB-I,16KB-D)	400MHz 533MHz	ROM/SRAM SDRAM/mSDRAM DDR/mDDR NAND/oneNAND	8,16,32	TFT/STN LCD Controller, AC97, Camera I/F, ATA Interfaces, NAND Boot, 10 ADCx10(TSP), SD(SDIO)/MMC/HS MMC 8bit Modem I/F(4KB dual), USB hostx2, USB 2.0 Device	174	69(23)	WDT/16TCx4 Internal 16TC	UARTx4(IrDA) SPIx2/IIC/IIS IrDA(v1.1)	6-ch	400FBGA

CMOS IMAGE SENSORS

Part Number	Type	Resol.	O/F	Pixels Horizontal	Pixels Vertical	Pixel Size	Package	Production Status
S5K53BE	SOC	VGA	1/5.8"	640	480	4	wafer or die	MP
S5KA3A	SOC	VGA	1/10"	640	480	2.25	wafer or die	Sampling
S5K3AA	SOC	SXGA	1/3.2"	1280	1024	3.5	wafer or die	MP
S5K4AA	SOC	SXGA	1/4"	1280	1024	2.8	wafer or die	MP
S5K5AA	SOC	SXGA	1/5"	1280	1024	2.25	wafer or die	Sampling
S5K3BAF	SOC	UXGA	1/3.2"	1600	1200	2.8	wafer or die	Sampling
S5K3B1F	CIS	UXGA	1/3.2"	1600	1200	2.8	wafer or die	Sampling
S5K4BA	SOC	UXGA	1/4"	2048	1024	2.25	wafer or die	MP
S5K3C1F	CIS	QXGA	1/2.7"	2048	1536	2.5	wafer or die	Under Development

NOTE: * O/F: Optical Format

4-BIT MICROCONTROLLER FAMILY

Part Name	Package	ROM	RAM	Interrupt (Int/Ext)	Timer/ Counters	LCD (Seg/Com)	ADC (Bit x Ch)	PWM(1) (BitxCh)	Max. OSC. Freq.	OTP Equivalent	
	Type	Kbytes	Nibble								I/O Pins
S3C1xxx (KS51) Series											
S3C1840DZO-DKB1	20DIP	1	32	15/19					6MHz	1.8~3.6	n/a
S3C1840DZO-SKB1	20SOP										
S3C1840DZO-SMB1	24SOP										
S3C1850DZO-SMB1	24SOP	1	32	19					6MHz	1.8~3.6	n/a
S3C1860XZO-DKB1	20DIP	1	32	15					6MHz	1.8~3.6	n/a
S3C1860XZO-SKB1	20SOP										
S3C7xxx (KS57) Series											
S3C7048DZO-AQB4	42SDIP	4	512	36	3/4	BT/WT/8Tx2	Yes		6MHz	1.8~5.5	S3P7048D
S3C7048DZO-QZR4	44QFP										
S3C7048DZO-AQB8	42SDIP	8									
S3C7048DZO-QZR8	44QFP										
S3C70F4XZO-AVB4	30SDIP	4	512	24	3/2	BT/WT/8TC	Yes	Comx4	6MHz	1.8~5.5	S3P70F4X
S3C70F4XZO-SOB4	32SOP										
S3C7235DZO-QWR8	80QFP	8	512	40	3/3	BT/WT/WDT/8T	Yes	32/4	6MHz	1.8~5.5	S3P7235X
S3C7235DZO-QWR5		16									
S3C72H8XZO-QTR8	64QFP	8	512	21	3/3	BT/WT/WDT/8T/16T		26/4	6MHz	1.8~5.5	S3P72H8X
S3C72K8XZO-QWR8	80QFP	8	1024	27	3/4	BT/WT/8TC	Yes	40/8	6MHz	2.0~5.5	S3P72K8X
S3C72M9XZO-QAR5	128QFP	16	3840	51	5/4	BT/WT/WDT/8T/16T	Yes	80/16	6MHz	1.8~5.5	S3P72M9X
S3C72M9XZO-QAR7		24									
S3C72M9XZO-QAR9		32									
S3C72N5XZO-QWR8	80QFP	8	512	40	3/3	BT/WT/8TC	Yes	32/4	6MHz	1.8~5.5	S3P72N5X
S3C72N5XZO-QWR5		16									
S3C72P9XZO-QXR5	100QFP	16	1056	39	4/4	BT/WT/8TC/16TC	Yes	56/16	6MHz	1.8~5.5	S3P72P9X
S3C72P9XZO-QXR7		24									
S3C72P9XZO-QXR9		32									
S3C72Q5XZO-QXR8	100QFP	8	5264	39	3/3	BT/WT/8TCx2		60/12	6MHz	1.8~5.5	S3P72Q5X
S3C72Q5XZO-QXR5		16									
S3C7324XZO-QTR4	64QFP	4	256	32	2/3	BT/WT/WDT/8T		28/4	6MHz	1.8~5.5	S3P7324X
S3C7335XZO-QWR8	80QFP	8	512	56	4/4	BT/WT/WDT/8T	Yes	28/4	6MHz	1.8~5.5	S3P7335X
S3C7335XZO-QWR5		16									
S3C7414DZO-AQB4	42SDIP	4	256	35	5/3	BT/WT/WDT/8Tx2	Yes	8x6	6MHz	1.8~5.5	S3P7414D
S3C7414DZO-QZR4	44QFP										
S3C7515DZO-ATB5	64SDIP	16	512	55	4/3	BT/WT/8Tx2	Yes		6MHz	2.0~5.5	S3P7515D
S3C7515DZO-QTR5	64QFP										
S3C7528DZO-AQB4	42SDIP	4	768	35	3/3	BT/WT/WDT/8Tx2			6MHz	1.8~5.5	S3P7528D
S3C7528DZO-QZR4	44QFP										
S3C7528DZO-AQB8	42SDIP	8									
S3C7528DZO-QZR8	44QFP										
S3C7544XZO-AMB4	24SDIP	4	512	17	2/2	BT/WDT/8T			6MHz	1.8~5.5	S3P7544X
S3C7544XZO-SMB4	24SOP										
S3C7559XZO-ATB9	64SDIP	32	1024	55	4/3	BT/WT/WDT/8Tx2	Yes		6MHz	1.8~5.5	S3P7559X
S3C7559XZO-QTR9	64QFP										
S3C7565XZO-QXR5	100QFP	16	5120	49	5/4	BT/WT/WDT/8T/16T	Yes	60/16	6MHz	1.8~5.5	S3P7565X
S3C7588AZO-COC8	44Pellet	8	768	25	4/4	BT/WT/WDT/8TCx2			3.58MHz	2.7~5.5	S3P7588X

NOTES:

*Under development. Contact Samsung sales office for availability.

- (1) () S/W supported PWM
(2) SIO mode can be selected by S/W

- (3) Flash: Writing endurance is 10K times
(4) MTP: Writing endurance is 100 times

Abbreviations:
ADC=Analog to Digital Converter

DTMF=Dual Tone Multi Frequency
CAS=CPE Alerting Signal
PWM=Pulse Width Modulation
SIO=Serial Input/Output
8T/16T=8-bit /16-bit Timer

BT/WT/WDT=Basic/Watch/Watchdog Timer
DAC=Digital to Analog Converter
ZCD=Zero Cross Detection circuit
Com=Comparator
FSK=Frequency Shift Keying

8-BIT MICROCONTROLLER FAMILY

Part Name	Package Type	ROM	RAM		Interrupt (Int/Ext)	Timer/ Counter	Serial Interface	LCD (Seg/Com)	ADC (Bit x Ch)	PWM(1) (BitxCh)	Max. OSC.		OTP or Flash Equivalent
		Kbytes	Bytes	I/O Pins							Freq.	Vdd (V)	
S3C9xxx (KS86) Series													
S3C9228AZ0-AQB8	42SDIP	8	256	36	4/10	BT/WT/8TCx2	SIO	16x8	10x4		8MHz	2.0-5.5	S3P9228A
S3C9228AZ0-QZR8	44QFP												
S3C9228AZ0-LRR8	48ELP												
S3C9234XZ0-QTR4	64QFP	4	208	52	5/7	BT/WT/8TCx2	SIO	32/4			8MHz	2.0-5.5	S3P9234X
S3C9404DZ0-AVB4	30SDIP	4	208	22	3/3	BT/WDT/8Tx2			8x8	(10x1)	10MHz	2.7-5.5	S3P9404D
S3C9404DZ0-SOB4	32SOP												
S3C9428XZ0-SNB4	28SOP	4	208	24	5/4	BT/WDT/8Tx2	IIC, SIO		10x12	12x2, (8x1)	16MHz	1.8-5.5	S3P9428X
S3C9428XZ0-SOB4	32SOP												
S3C9428XZ0-AVB4	30SDIP												
S3C9428XZ0-SNB8	28SOP	8											
S3C9428XZ0-SOB8	32SOP												
S3C9428XZ0-AVB8	30SDIP												
S3C9434XZ0-DIB4	18DIP	4	112	11/13	3/2	BT/WDT/8T	SIO		10x5	12x1	16MHz	3.0-5.5	S3P9434X
S3C9434XZ0-DKB4	20DIP												
S3C9434XZ0-SKB4	20SOP												
S3C9444XZ0-SCB4	8SOP	4	208	6	1/2	BT/8TC			10x3		10MHz	2.0-5.5	S3F9444X(4)
S3C9444XZ0-DCB4	8DIP												
S3C9454BZ0-DHB4	16DIP	4	208	14/18	2/2	BT/8TC			10x9	8x1	10MHz	2.0-5.5	S3F9454B(4)
S3C9454BZ0-SHB4	16SOP												
S3C9454BZ0-VHB4	16TSSOP												
S3C9454BZ0-DKB4	20DIP												
S3C9454BZ0-SKB4	20SOP												
S3C9454BZ0-VKB4	20SSOP												
S3C9488XZ0-AQB8	32SDIP	8	208	26/36/38	6/4	BT/8T	UART	19/8	10x9		10MHz	2.2-5.5	S3F9488X(4)
S3C9488XZ0-SOB8	32SOP												
S3C9488XZ0-AQB8	42SDIP												
S3C9488XZ0-QZR8	44QFP												
S3C9498XZ0-SNB8	28SOP	8	208	22/24/26	11/5	BT/8TCx4/16TC	SIO, UART		10x8	12x1, (8x1)	8MHz	2.0-5.5	S3F9498X(4)
S3C9498XZ0-SOB8	32SOP												
S3C9498XZ0-AQB8	32SDIP												
S3C9498XZ0-AVB8	30SDIP												
S3C94A5XZ0-QZR5	44QFP	16	368	34	8/15	BT/WT/8TC/16TCx2	SIO		10x16	8x1, 16x2	12MHz	2.0-5.5	S3F94A5X(4)
S3C94A5XZ0-AQB5	42SDIP												
S3C9688XZ0-AQB8	42SDIP	8	208	32	15/14	BT/WDT/8T	USB				6MHz	4.0-5.25	S3P9688X
S3C9688XZ0-QZR8	44QFP												
S3C8xxx (KS88) Series													
S3C80A5BZ0-SMB8	24SOP	8	272	19	5/8	BT/WDT/8Tx2/16T				8x1	8MHz	2.0-3.6	S3P80A5A
S3C80A5BZ0-AMB8	24SDIP												
S3C80A5BZ0-SMB5	24SOP	16											
S3C80A5BZ0-AMB5	24SDIP												
S3C80B5XZ0-SMB8	24SOP	8	272	19	5/8	BT/WDT/8Tx2/16T				8x1	4MHz	1.7-3.6	S3P80B5X
S3C80B5XZ0-AMB8	24SDIP												
S3C80B5XZ0-SMB5	24SOP	16											
S3C80B5XZ0-AMB5	24SDIP												
S3C80C5XZ0-SMB8	24SOP	8	272	19	5/8	BT/WDT/8Tx2/16T				8x1	4MHz	1.7-3.6	S3P80C5X
S3C80C5XZ0-AMB8	24SDIP												
S3C80C5XZ0-SMB5	24SOP	16											
S3C80C5XZ0-AMB5	24SDIP												
S3C80F9BZ0-SOB7	32SOP	24	272	38	5/16	BT/8TC/16TC				8x1	8MHz	2.0-5.0	S3P80F9X
S3C80F9BZ0-AQB7	42SDIP												
S3C80F9BZ0-QZR7	44QFP												
S3C80F9BZ0-LRR7	48ELP												
S3C80F9BZ0-SOB9	32SOP	32											
S3C80F9BZ0-AQB9	42SDIP												
S3C80F9BZ0-QZR9	44QFP												
S3C80F9BZ0-LRR9	48ELP												
S3C80G9BZ0-SNB7	28SOP	24	272	38	5/16	BT/8TC/16TC				8x1	4MHz	1.7-3.6	S3P80G9X
S3C80G9BZ0-SOB7	32SOP												
S3C80G9BZ0-AQB7	42SDIP												
S3C80G9BZ0-QZR7	44QFP												
S3C80G9BZ0-SNB9	28SOP	32											
S3C80G9BZ0-SOB9	32SOP												
S3C80G9BZ0-AQB9	42SDIP												
S3C80G9BZ0-QZR9	44QFP												
S3C80J9XZ0-SOB9	32SOP	32	272	26	12/10	BT/8T/16T				8x1	8MHz	1.95-3.6	S3F80J9X(3)
S3C80J9XZ0-SNB9	28SOP												
S3C80JBXZ0-QZRB	44QFP	64	272	38	14/10	BT/8T/16Tx2			COMx4	8x1	8MHz	1.95-3.6	S3F80JBX(3)

8-BIT MICROCONTROLLER FAMILY

Part Name	Package Type	ROM Kbytes	RAM Bytes	I/O Pins	Interrupt (Int/Ext)	Timer/Counter	Serial Interface	LCD (Seg/Com)	ADC (Bit x Ch)	PWM(1) (BitxCh)	Max. OSC. Freq.	Vdd (V)	OTP or Flash Equivalent
S3C8xxx (KS88) Series													
S3C80JBXZO-AQBB	42SDIP												
S3C80JBXZO-SOBB	32SOP				14/10								
S3C80L4XZO-AOB4	32SDIP	4	144	26	2/8	BT/8TC				8x1	8MHz	2.0-5.5	S3F80L4X(4)
S3C80L4XZO-SOB4	32SOP												
S3C80L4XZO-SNB4	28SOP												
S3C80M4XZO-DKB4	20DIP	4	128	15/11	2/4	BT/8TC				8x1	10MHz	2.0-5.5	S3F80M4X(4)
S3C80M4XZO-SKB4	20SOP												
S3C80M4XZO-DHB4	16DIP												
S3C80M4XZO-SHB4	16SOP												
S3C8235BZO-QTR8	64QFP	8	552	32	8/8	BT/8TCx2/16TC		24/8	10x8	8x2	8MHz	2.0-5.5	S3F8235X(4)
S3C8235BZO-ETR8	64LOFP												
S3C8235BZO-QTR5	64QFP	16											
S3C8235BZO-ETR5	64LOFP												
S3C8245AZO-TWR8	80TOFP	8	544	45	8/8	BT/WDT/8Tx2/16Tx2	SIO	32/4	10x8	(8x2, 16x1)	10MHz	1.8-5.5	S3P8245X
S3C8245AZO-QWR8	80QFP												
S3C8245AZO-TWR5	80TOFP	16											
S3C8245AZO-QWR5	80QFP												
S3C8249XZO-TWR7	80TOFP	24	1056	45	8/8	BT/WDT/8Tx2/16Tx2	SIO	32/4	10x8	(8x2, 16x1)	10MHz	1.8-5.5	S3P8249X
S3C8249XZO-QWR7	80QFP												
S3C8249XZO-TWR9	80TOFP	32											
S3C8249XZO-QWR9	80QFP												
S3C825ACZO-TWRA	80TOFP	48	2096	67	11/12	BT/WT/8TC/16TC	SIO, UART	28/8	10x4	(8x1, 16x1)	8MHz	2.0-5.5	S3P825AX
S3C825ACZO-QWRA	80QFP												
S3C826AXZO-QCRA	144QFP	48	2k	128	9/12	BT/8TCx3/16TC	SIO	80/16	8x4	8x2	8MHz	2.0-5.5	S3P826AX
S3C8274XZO-QTR4	64QFP	4	256	52	4/8	WT/BT/8TCx2	SIO	32/4			8MHz	2.0-3.6	S3F8274X(4)
S3C8274XZO-ETR4	64LOFP												
S3C8275XZO-QTR5	64QFP	16	512										S3F8275X(3)
S3C8275XZO-ETR5	64LOFP												
S3C8278XZO-QTR8	64QFP	8	256										S3F8278X(4)
S3C8278XZO-ETR8	64LOFP												
S3C8285XZO-QWR5	80QFP	16	512	65	10/8	BT/WT/8TCx2/16TCx2	UART, SIO	32/8	10x8	8x1, 16x1	11.1MHz	2.0-3.6	S3F8285X(4)
S3C8285XZO-TWR5	80TOFP												
S3C8289XZO-QWR9	80QFP	32	1024										S3F8289X(4)
S3C8289XZO-TWR9	80TOFP												
S3C828BXZO-QWRB	80QFP	64	2560										S3F828BX(3)
S3C828BXZO-TWRB	80TOFP												
S3C82E5XZO-QZR5	44QFP	16	208	38	5/4	BT/WT/8TC	SIO	23/4			8MHz	2.0-3.6	S3F82E5X(4)
S3C82E5XZO-TBR5	48TOFP												
S3C82F5XZO-QXR5	100QFP	16	2.5K	44	6/12	BT/WT/8TCx2/16TC	SIO	60/16		8x1	8MHz	2.0-5.0	S3F82F5X(4)
S3C82F5XZO-TXR5	100TOFP												
S3C830AXZO-QXRA	100QFP	48	2084	72	10/8	BT/WDT/8Tx2/16T	SIOx2	40/4	8x4	8x1	4.5MHz	3.0-5.5	S3P830AX
S3C831BXZO-QXRB	100QFP	64	2.5K	72	10/8	BT/WDT/WT/8Tx2/16T	SIOx2	40/4	8x8	8x1	9MHz	2.2-5.5	S3P831BX
S3C831BXZO-TXRB	100TOFP												
S3C8325XZO-QWR5	80QFP	16	512	64	9/12	BT/WDT/WT/8Tx2/16T	SIO	28/8	8x8	8x1	4.5MHz	2.0-5.5	S3P8325X
S3C8325XZO-TWR5	80TOFP												
S3F833BXZO-QXRB	100QFP	64	2.5K	86	13/8	BT/WDT/WT/8Tx2/16T	SIOx2, UARTx2	40/8	10x12	8x1	12MHz	2.0-3.6	Flash Only S3F833BX(4)
S3F834BXZO-TXRB	100TOFP	64	2.5K	86	13/8	BT/WDT/WT/8Tx2/16T	SIOx2, UARTx2	40/8	10x12	8x1	12MHz	2.0-3.6	Flash Only S3F834BX(4)
S3C8454XZO-TWR4	80TOFP	4	1040	42	8/8	BT/WDT/8Tx2/16Tx2	SIO		8x4	8x2, (16x2)	25MHz	4.5-5.5	S3P8454X
S3C8454XZO-QWR4	80QFP												
S3C8469XZO-ATB5	64SDIP	16	528	56	11/10	BT/WDT/8Tx2/16Tx2	UART, SIO		10x8	14x2, (8x2)	12MHz	2.7-5.5	S3P8469X
S3C8469XZO-QTR5	64QFP												
S3C8469XZO-LTR5	64ELP												
S3C8469XZO-ATB9	64SDIP	32											
S3C8469XZO-QTR9	64QFP												
S3C8469XZO-LTR9	64ELP												
S3C8475XZO-AQB8	42SDIP	8	272	36	6/8	BT/WDT/8T/16T	UARTx2		10x8	(8x1, 10x1)	12MHz	2.7-5.5	S3P8475X
S3C8475XZO-QZR8	44QFP												
S3C8475XZO-AQB5	42SDIP	16											
S3C8475XZO-QZR5	44QFP												
S3C848AXZZ-ATBA	64SDIP	48	2064	56	15/14	BT/8TCx4/16Tx2	UARTx2	SIO	10x8	14x2, (8x2)	12MHz	2.7-5.5	S3P848AX
S3C848AXZZ-QTRA	64QFP												

8-BIT MICROCONTROLLER FAMILY

Part Name	Package Type	ROM	RAM		Interrupt (Int/Ext)	Timer/ Counter	Serial Interface	LCD (Seg/Com)	ADC (Bit x Ch)	PWM(1) (BitxCh)	Max. OSC.		OTP or Flash Equivalent
		Kbytes	Bytes	I/O Pins							Freq.	Vdd (V)	
S3C8xxx (KS88) Series													
S3C84A4XZ0-QTR4	64QFP	4	784	29	7/4	BT/8TCx2/16Tx2			8x4	8x2, (8x2)	30MHz	4.5-5.5	S3P84A4X
S3C84BBXZ0-TWRB	80TQFP	64	2064	70	14/10	BT/8TCx2/16TCx2/8Tx2	UARTx2, SIO		10x8	8*1 (DAC)	10MHz	2.7-5.5	S3F84BBX(3)
S3C84BBXZ0-QWRB	80QFP												
S3C84DBXZ0-TWRB	100TQFP	64	2064	90	14/10	BT/8TCx4/16TCx2	UARTx2, SIO	48/8	10x8	8*1 (DAC)	10MHz	2.7-5.5	S3F84DBX(3)
S3C84DBXZ0-QWRB	100QFP												
S3C84E9XZ0-AQB9	42SDIP	16	272	34/36	9/12	BT/WT/8T/8TC/16TCx2	UART		10x8	(8x1)	12MHz	2.7-5.5	S3P84E9X
S3C84E9XZ0-QZR9	44QFP												
S3C84H5XZ0-AOB5	32SDIP	16	272	22/20/18	12/4	BT/WT/8T/8TCx2/16TCx2	UART, SIO		10x8	10x1	10MHz	2.4-5.5	S3F84H5X(4)
S3C84H5XZ0-SOB5	32SOP												
S3C84H5XZ0-AVB5	30SDIP												
S3C84H5XZ0-SNB5	28SOP												
S3C84I8XZ0-AQB8	42SDIP	8	292	34/32	12/4	BT/WT/8T/8TCx2/16TCx2	UART, SIO	16/8	10x8	10x1	10MHz	2.4-5.5	S3F84I8X(4)
S3C84I8XZ0-QZR8	44QFP												
S3C84I9XZ0-AQB9	42SDIP	32	528										S3F84I9X(3)
S3C84I9XZ0-QZR9	44QFP												
S3F84K4XZ0-DHB4	16DIP	4	208	11/18	2/2	BT/16(8X2)T			10x9	12x1	8MHz	2.0-5.5	Flash Only S3F84K4X(4)
S3F84K4XZ0-SHB4	16SOP												
S3F84K4XZ0-VHB4	16SSOP												
S3F84K4XZ0-RHB4	16TSSOP												
S3F84K4XZ0-DKB4	20DIP												
S3F84K4XZ0-SKB4	20SOP												
S3F84K4XZ0-VKB4	20SSOP												
S3F84MBXZ0-TWRB*	80TQFP	64	2064	70	17/10	BT/8TCx2/16TCx2/8Tx2	UARTx3, SIOz2		10x5	8x2	10MHz	2.4-5.5	Flash Only S3F84MBX(3)
S3F84MBXZ0-QWRB*	80QFP												
S3F84P4XZ0-SCB4*	8SOP	4	208	6	2/2	BT/16(8X2)T			10x4	12x1	10MHz	2.0-5.5	Flash Only S3F84P4X(4)
S3F84P4XZ0-DCB4*	8DIP												
S3C851BXZ0-QDRB	160QFP	64	1808	42	1/7	BT/WDT/WT/8T/16T	UART, SIO	56/34	10x4		3.58MHz	2.7-5.5	S3P851BX
S3C852BXZ0-QXRB	100QFP	64	1808	80	36897	BT/WDT/WT/8T/16T	SIO				3.58MHz	2.7-5.5	S3P852BX
S3C863AXZ0-AQB9	42SDIP	32	1040	27	7/3	BT/8TC/8T/12C	M/M IIC, Slave IIC		8x4	8x7	12MHz	3.0-5.5	S3P863AX
S3C863AXZ0-QZR9	44QFP												
S3C863AXZ0-AQBA	42SDIP	48											S3P863AX
S3C863AXZ0-QZRA	44QFP												
S3C8647XZ0-AOB5	32SDIP	16	384	19	6/3	BT/8TC/8T/12C	IIC		4x4	8x6	12MHz	4.0-5.5	S3F8647X(4)
S3C8647XZ0-AOB7	24												
S3C866BXZ0-AQBB*	42SDIP	64	1040	30	9/2	BT/WDT/8TCx3	IIC		8x8	8x7	24MHz	2.3-3.6V	S3F866BX(4)
S3C866BXZ0-QZRB*	44QFP												
S3C866BXZ0-PZBB*	44PLCC												
S3C880AXZ0-AQBA	42SDIP	48	336	26	5/4	BT/8TCx2			8x4	14x2, 8x4(8x1)	8MHz	4.5-5.5	S3F880AX(4)
S3C8849XZ0-AQB7	42SDIP	24	272	26	5/4	BT/WDT/8Tx2			4x4	14x2, 8x4(8x1)	8MHz	4.5-5.5	S3P8849X
S3C8849XZ0-AQB9	32												

NOTES:

1 *Under Development. Contact Samsung sales office for availability

2 (1) () S/W supported PWM

(2) SIO mode can be selected by S/W

(3) Flash: Writing endurance is 10K times

(4) MTP: Writing endurance is 100 times

3 Abbreviations:

LVR = Low Voltage Reset

ZCD=Zero Cross Detection circuit

FSK=Frequency Shift Keying

RDS=Radio Data System

DAC=Digital to Analog Converter

PWM=Pulse Width Modulation

SIO=Serial Input/Output

LIN=Local Interface Network

DTMF=Dual Tone Multi Frequency

DDC=Display Data Channel

SDT=Stuttered Dial Tone

BT/WT/WDT=Basic/Watch/Watchdog timer

8T/16T=8-bit /16-bit Timer

OSD=On Screen Display

ADC=Analog to Digital Converter

CAS=CPE Alerting Signal

LVD = Low Voltage Detector

PGM=Pattern Generation Module

Com=Comparator

MICROCONTROLLER ORDERING INFORMATION

S	3	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. System LSI (S)						11. (-)						C: 8	H: 16	I: 18				
2. Large Classification: Microcontroller(3)						12. Package Type						K: 20	M: 24	N: 28				
3. Small Classification						A: SDIP						B: LGA						
C: MASK ROM						E: EVA-CHIP						D: DIP						
F: FLASH						P: OTP						F: WQFP						
3: MCP						G: BGA						H: CSP						
4. Core						J: BQFP						K: UELP						
1: 51 4-bit						2: 32-bit ARM9						M: QFP						
3: 17 16-bit						4: 32 32-bit						P: PLCC						
5: 32-bit ARM10						6: 56 4-bit						S: SOP						
7: 57 4-bit						8: 88 8-bit						V: TEBGA						
9: 86 8-bit						A: 15 Other						Y: FBGA						
B: 8-bit CALM RISC MAC						3. Package Pin						- TQFP						
C: 16-bit CALM RISC MAC						Wafer/CHIP BIZ = 0(NONE)						A: 128						
D: 32-bit CALM RISC MAC						- SDIP						T: 64						
I: CUSTOM MCU						B: 56						M: 24						
J: SC-200						O: 42						O: 32						
K: 8-bit CALM RISC						- LGA						T: 64						
L: 16-bit CALM RISC						A: 88						C: 83						
R: 128-bit CALM RISC						- DIP						J: 176						
S: SC-100						C: 8						H: 16						
5~6. Application Category						K: 20						N: 28						
0n: General Purpose						1n: Voice						O: 32						
2n: LCD						3n: Audio						V: 30						
4n: General A/D						5n: Telecom						- BGA						
6n: PC & Peripheral,OA						7n: VFD						A: 272						
8n: Video						9n: Special (IC Card)						B: 416						
An: General Purpose-1						Cn: C						- CSP						
Fn: Telecom-1						Nn: Intel Application						J: 176						
Zn: Assignment Code						- QFP						B: 132						
* "n": Serial No (1°,Z)						C: 144						- UQLP						
7. Rom Master						D: 160						T: 64						
0: 0K byte						1: 1K byte						- ELP						
2: 2K byte						3: 12K byte						R: 48						
4: 4K byte						5: 16K byte						T: 64						
6: 6K byte						7: 24K byte						- QFP						
8: 8K byte						9: 32K byte						D: 160						
A: 48K byte						B: 64K byte						F: 240						
C: 96K byte						D: 128K byte						- COB						
F: 256K byte						G: 384K byte						C: 8						
H: 512K byte						J: 1M byte						D: 8CNCL						
K: 1M byte						- PLCC						C: 52						
8. Version						- QFP						A: 128						
A~Z						A: 128						C: 144						
*1st Version ° X						E: 208						D: 160						
9~10. Mask Option						T: 64						R: 48						
						X: 100						U: 304						
						- SOP						W: 80						
												Z: 44						
												O: 289						
												T: 64						
												- SBGA						
												A: 432						
												- WAFER						
												O: None						
												1: Cust1						
												2: Cust2						
												14. Packing						
												B: Tube						
												U: Bulk						
												R: Tray						
												T: Tape & Reel						
												S: Tape & Reel Reverse						
												C: Chip Biz						
												D: Chip Biz (3 Inch tray)						
												E: Chip Biz (4 Inch tray)						
												F: Chip Biz (Reverse)						
												W: WF Biz Draft Wafer						
												X: WF Biz Full Cutting						
												7: Tape & Reel (Pb-Free PKG)						
												8: Tray (Pb-Free PKG)						
												9: Tube (Pb-Free PKG)						
												15. ROM Size						
												0: 0K byte						
												1: 1K byte						
												2: 2K byte						
												3: 12K byte						
												4: 4K byte						
												5: 16K byte						
												6: 6K byte						
												7: 24K byte						
												8: 8K byte						
												9: 32K byte						
												A: 48K byte						
												B: 64K byte						
												C: 96K byte						
												D: 128K byte						
												E: Extended F: 256K byte						
												G: 384K byte						
												H: 512K byte						
												I: 1M byte						
												K: 1M byte						
												M: Military						
												N: Industrial						
												X: Special MK3						
												Y: Special MK2						
												Z: Special MK1						
												* Smart Card IC: EEPROM Size						
												* X,Y,Z: Special Marking (MASKROM)						

SERIAL EEPROMS

Part Number	Density (bit)	Write Protection	Vopr (V)	Write Cycle		Package
				Time (Max)	Interface	
S524A40X20-RCT0	2K	by Hardware & Software	1.8 ~ 5.5	5 ms	I2C BUS	8TSSOP (T&R)
S524A40X21-DCBO	2K	by Hardware	1.8 ~ 5.5	5ms	I2C BUS	8DIP
S524A40X21-SCBO	2K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP
S524A40X21-SCT0	2K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP (T&R)
S524A40X41-DCBO	4K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8DIP
S524A40X41-SCBO	4K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP
S524A40X41-SCT0	4K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP (T&R)
S524A60X51-DCBO	16K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8DIP
S524A60X51-SCBO	16K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP
S524A60X51-SCT0	16K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP (T&R)
S524A60X81-DCBO	8K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8DIP
S524A60X81-SCBO	8K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP
S524A60X81-SCT0	8K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP (T&R)
S524AB0X91-DCBO	32K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8DIP
S524AB0X91-SCBO	32K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP
S524AB0X91-SCT0	32K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP (T&R)
S524AB0XB1-DCBO	64K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8DIP
S524AB0XB1-SCBO	64K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP
S524AB0XB1-SCT0	64K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8SOP (T&R)
S524AD0XF1-RCT0	256K	by Hardware	1.8 ~ 5.5	5 ms	I2C BUS	8TSSOP

NOTES: All listed products are in production
 Temperature: -25 ~ 70c
 All products offer 100-year data retention, a 16M page buffer and two-wired serial I2C-bus interfaces.
 All products operate at 100KHz, 400KHz clock frequency.
 Package: DCBO=8DIP

TFT-LCD

	PAGE
MONITOR/INDUSTRIAL LCD PANELS	
15", 17"	3c
19"	3c
20.1", 21.3"	4c
22.0", 23.0", 24.0", 30.0"	4c
LCD TV/A.V.	
HD 23", 26", 32", 40", 46"	5c
FULL HD 40", 46", 52", 57"	5c
MOBILE PHONES	
MAIN DISPLAYS	6c
MAIN + EXTERNAL DISPLAYS	6c
INFORMATION DISPLAYS	
40", 46", 57", 82"	7c
DIGITAL IMAGING: ENTERTAINMENT	
DSC/DVC/PHOTO PRINTERS/PMP/VOIP/GAMES	8c
MOBILE AV	
MINI PCS/CNS/CAR TVS/P-DVDS/ INDUSTRIAL APPLICATIONS	9c

MONITOR/INDUSTRIAL LCD PANELS - 15.0", 17.0"

15.0" XGA, 17.0" SXGA

	15.0" XGA		17.0" SXGA		
	LTM150XO-L01	LTB150XT-A01	LTM170EU-L21/-L31	LTM170EX-L21 /-L31	LTM170E8 -L01
Resolution	XGA	XGA	SXGA	SXGA	SXGA
Number of Pixels	1,024 x 768	1,024 x 768	1,280 x 1,024	1,280 x 1,024	1,280 x 1,024
Active Area (mm)	304.1 X 228.1	304.1 X 228.1	337.9 x 270.3	337.9 x 270.3	337.9 x 270.3
Pixel Pitch (mm)	0.297	0.297	0.264	0.264	0.264
Mode	BTN	BTN	BTN II / BTN III	BTN II / BTN III	PVA
Number of Colors	16.2M	16.2M	16.2M / 16.7M	16.2M / 16.7M	6-Bit Hi-FRC =16M
Contrast Ratio (typ.)	700:1	700:1	700:1 / 1:000:1	700:1 / 1:000:1	1,000:1
Brightness (cd/m ²)	250	450	300	300	280
Response Time (ms at 25°C)	8ms	8ms	8ms / 5ms	8ms / 5ms	< 25ms
Color Gamut	60%	60%	72%	72%	72%
Viewing Angle (U/D/L/R)	75/60/75/75	75/60/75/75	75/75/75/60 / 160/160	75/75/75/60 / 160/160	89/89/89/89
Interface	1 Ch. LVDS	1 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS
Supply Voltage (V)	3.3	3.3	5	5	5
Backlight	2 CCFL	2 CCFL	4 CCFL	4 CCFL	4 CCFL
Outline Dimensions (mm)	326.5 x 253.5 x 11.5	326.5 x 253.5 x TBD	358.5 x 296.5 x 17.5	354.9 x 290.3 x 12.8	354.9 x 290.3 x 13.3
Weight (g)	1,050	1,050	2,100	1,650	1,650
Production	Now	Now	Now / August	Now / August	Now

NOTES: Samsung LCD Product Matrix is based on 2006-2007 availability

MONITOR/INDUSTRIAL LCD PANELS - 19.0"

19.0" SXGA

	19.0" SXGA						
	LTM190EX-L21/-L31	LTM190E4-L02	LTM190E4-L03	LTB190E1-L01	LTB190E2-L01	LTB190E2-L02	LTM190M2-L01
Resolution	SXGA	SXGA	SXGA	SXGA	SXGA	SXGA	Wide XGA+
Number of Pixels	1,280 x 1,024	1,280 x 1,024	1,280 x 1,024	1,280 x 1,024	1,280 x 1,024	1,280 x 1,024	1,440 x 900
Active Area (mm)	376.3 X 301.1	376.3 X 301.1	376.3 X 301.1	376.3 X 301.05	376.3 X 301.1	376.3 X 301.1	408.2 x 255.2
Pixel Pitch (mm)	0.294	0.294	0.294	0.294	0.294	0.294	0.284
Mode	BTN II / BTN III	PVA	PVA	S-PVA	PVA	PVA	BTN III
Number of Colors	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M
Contrast Ratio	700:1 / 1:000:1	1,500:1	1,000:1	1,000:1	1,500:1	1,000:1	1,000:1
Brightness (cd/m ²)	300	250	300	250	250	700	300
Response Time (ms at 25°C)	8ms / 5ms	< 20ms	< 25ms	20ms	25ms	25ms	5ms
Color Gamut	72%	72%	72%	72%	72%	72%	72%
Viewing Angle (U/D/L/R)	75/75/75/60/160/160	89/89/89/89	89/89/89/89	90/90/90/90	89/89/89/89	89/89/89/89	80/80/80/80
Interface	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS
Supply Voltage (V)	5	5	5	5	5	5	5
Backlight	4 CCFL	4 CCFL	4 CCFL	4 CCFL	4 CCFL	4 CCFL	4 CCFL
Outline Dimensions (mm)	396.0 x 324.0 x 16.5	396.0 x 324.0 x 17.5	396.0 x 324.0 x 20.5	396 x 324 x 16.5	388.6 x 320.5 x 15.2	392.4 x 317.4 x 46.1	428.0 x 278.0 x 18.0
Weight (g)	2,200	2,600	2,700	TBD	2,600	3,000	2,500
Production	Now / August	Now	Now	Now	Now	Now	Now

NOTE: Samsung LCD Product Matrix is based on 2006-2007 availability

MONITOR/INDUSTRIAL LCD PANELS - 20.1", 21.3"

20.1" UXGA, 20.1" WSXGA+
21.3" UXGA, 21.3" QXGA

	20.1" UXGA	21.3" UXGA	21.3" QXGA	20.1" WSXGA+	
	LTM201U1-L01	LTM213U6-L01	LTB213QR-L01	LTM201M1-L01	LTM201M2-L01
Resolution	UXGA	UXGA	QXGA	Wide SXGA+	Wide SXGA+
Number of Pixels	1,600 x 1,200	1,600 x 1,200	2,048 x 1,536	1,680 x 1,050	1,680 x 1,050
Active Area (mm)	408.8 x 306.0	432.0 X 324.0	433.2 x 325.9	433.4 x 270.9	433.4 x 270.9
Pixel Pitch (mm)	0.255	0.270	0.212	0.258	0.258
Mode	S-PVA	S-PVA	S-PVA	S-PVA	BTN III
Number of Colors	16.7M	16.7M	Monochrome 10-bit	16.7M	6-Bit Hi-FRC =16.7M
Contrast Ratio	1,000:1	1,000:1	2,000:1	1,000:1	1,000:1
Brightness (cd/m ²)	300	300	1,500	300	300
Response Time (ms at 25°C)	8ms	25ms	16ms	16ms (8ms G-G)	5ms
Color Gamut	72%	72%	-	72%	72%
Viewing Angle (U/D/L/R)	90/90/90/90	89/89/89/89	90/90/90/90	89/89/89/89	80/80/80/80
Interface	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS
Supply Voltage (V)	5	5	5	5	5
Backlight	6 CCFL	6 CCFL	6 CCFL	6 CCFL	6 CCFL
Outline Dimensions (mm)	432.0 x 331.5 x 25.0	462.0 x 361.0 x 22.5	457 x 350 x 42.6	459.4 x 296.4 x 23.3	459.4 x 296.4 x 19.8
Weight (g)	3,250	3,500	2,400	3,100	2,750
Production	Now	Now	Now	Now	Q306

NOTE: Samsung LCD Product Matrix is based on 2006-2007 availability

MONITOR/INDUSTRIAL LCD PANELS - 22.0", 23.0", 24.0", 30.0"

22.0" WSXGA+, 23.0" WXGA
24.0" WUXGA, 24.0" WUXGA
30.0" WQXGA

	22.0" WSXGA+	23.0" WXGA	24.0" WUXGA	24.0" WUXGA	30.0" WQXGA
	LTM220M1-L01	LTB230W1-L01	LTM240M2-L02	LTB240M1-L01	LTB300M1-P01
Resolution	Wide SXGA+	WXGA	Wide UXGA	Wide UXGA	Wide QXGA
Number of Pixels	1,680 x 1,050	1,366 x 768	1,920 x 1,200	1,920 x 1,200	2,560 x 1,600
Active Area (mm)	473.8 x 296.1	508.15 x 324.0	518.4 X 324.0	518.4 X 324.0	641.3 x 400.8
Pixel Pitch (mm)	0.282	0.372	0.270	0.270	0.251
Mode	BTN III	S-PVA	S-PVA	S-PVA	S-PVA
Number of Colors	16.7M	16.7M	16.7M	16.7M	16.7M
Contrast Ratio	1,000:1	1,200:1	1,000:1	1,000:1	1,000:1
Brightness (cd/m ²)	300	350	500	250	400
Response Time (ms at 25°C)	5ms	25ms	6ms (Grey to Grey)	8ms (Grey to Grey)	8ms
Color Gamut	72%	72%	72%	104%	72%
Viewing Angle (U/D/L/R)	80/80/80/80	90/90/90/90	89/89/89/89	90/90/90/90	90/90/90/90
Interface	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	Dual TMDS
Supply Voltage (V)	5	5	5	5	12
Backlight	4 CCFL	6 CCFL	6 CCFL, Direct BLU	LED Backlight	16 CCFL
Outline Dimensions (mm)	493.7 x 320.1 x 17.0	546.0 x 318.3 x 46.3	546.4 x 352.0 x 35.8	549.1x 368.4 x 33	677.3 x 436.8 x 42.3
Weight (g)	2,800	3,000	3,200	TBD	5,100
Production	Q306	Now	Now	Q107	Now

NOTE: Samsung LCD Product Matrix is based on 2006-2007 availability

HD LCD TV/A.V. - 23", 26", 32", 40", 46"

23", 26", 32", 40", 46"

HD

	23"	26"	32"	40"	46"		
	LTA230W2-L01	LTA260W3-L01	LTA320WT-L16	LTA400WT-L11	LTA400WS-LH1	LTA460WT-L03	LTA460WT-LH1
Resolution	WXGA	WXGA	WXGA	WXGA	WXGA	WXGA	WXGA
Number of Pixels	1,366 x 768	1,366 x 768	1,366 x 768	1,366 x 768	1,366 x 768	1,366 x 768	1,366 x 768
Active Area (mm)	508.1 x 285.7	575.8 x 323.7	697.7 x 392.2	885.2 x 497.7	885.2 x 497.7	1,018.1 x 572.5	1,018.1 x 572.5
Pixel Pitch (mm)	0.372	0.422	0.511	0.648	0.648	0.746	0.746
Wide V/A Technology	PVA	PVA	S-PVA	S-PVA	S-PVA	S-PVA	S-PVA
Number of Colors	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M
Color Gamut	72	72	72	72	92	72	92
Contrast Ratio	1,200:1	1,200:1	1,200:1	1,200:1	1,200:1	1,200:1	1,200:1
Brightness (cd/m ²)	450	450	500	500	500	500	500
Response Time (ms at 25°C)	8 (G/G)	8 (G/G)	8 (G/G)	8 (G/G)	8 (G/G)	8 (G/G)	8 (G/G)
Interface	LVDS (1 ch.)	LVDS (1 ch.)	LVDS (1 ch.)	LVDS (1 ch.)	LVDS (1 ch.)	LVDS (1 ch.)	LVDS (1 ch.)
Outline Dimensions (mm)	546.0 x 318.3 x 47.3	626.0 x 373.0 x 48.0	760.0 x 450.0 x 50.0	952.0 x 551.0 x 50.1	952.0 x 551.0 x 50.1	1,083.0 x 627.0 x 56.5	1,083.0 x 627.0 x 50.0
Weight (kg)	3.0	4.5	7.0	11.5	11.5	15.0	10.0
Production	Q306	Q306	Q306	Now	Now	Q306	Q306

NOTES: Viewing Angle (H/V): PVA-178°/178°, S-PVA-180°/180°

G/G - Gray to gray response time

The specifications represent the main model of each product and are subject to change without prior notice.

FULL-HD LCD TV/A.V. - 40", 46", 52", 57"

40", 46", 52", 57"

Full-HD

	40"	46"	52"	57"	
	LTA400HS-L01	LTA400HS-LH1	LTA460HS-LH3	LTA520HT-LH1	LTA570HS-L01
Resolution	WUXGA	WUXGA	WUXGA	WUXGA	WUXGA
Number of Pixels	1,920 x 1,080	1,920 x 1,080	1,920 x 1,080	1,920 x 1,080	1,920 x 1,080
Active Area (mm)	885.6 x 498.2	885.6 x 498.2	1,018.1 x 572.7	1,152.0 x 648.0	1,251.4 x 703.9
Pixel Pitch (mm)	0.461	0.461	0.530	0.600	0.651
Wide V/A Technology	S-PVA	S-PVA	S-PVA	S-PVA	S-PVA
Number of Colors	16.7M	16.7M	16.7M	1.07B	1.07B
Color Gamut	72	92	92	92	72
Contrast Ratio	1,200:1	1,200:1	1,200:1	1,000:1	1,200:1
Brightness (cd/m ²)	500	450	500	500	500
Response Time (ms at 25°C)	8 (G/G)	8 (G/G)	6 (G/G)	8 (G/G)	8 (G/G)
Interface	LVDS (2 ch.)	LVDS (2 ch.)	LVDS (2 ch.)	LVDS (2 ch.)	LVDS (2 ch.)
Outline Dimensions (mm)	952.0 x 551.0 x 53.5	952.0 x 551.0 x 47.6	1,083.0 x 627.0 x 50.0	1,236.0 x 719.2 x 57.5	1,328.4 x 765.3 x 63.0
Weight (kg)	12.5	11.5	15.5	23.0	30.0
Production	Now	Now	Q306	Q306	Now

NOTES: Viewing Angle (H/V): PVA-178°/178°, S-PVA-180°/180°

G/G - Gray to gray response time

The specifications represent the main model of each product and are subject to change without prior notice.

MOBILE PHONE: MAIN DISPLAYS

Specifications	LTS166QQ-F0A	LTS182QQ-F07	LTS190QC-F0N	LTS200QC-F0V	LTS220QC-F0H	LTS200QV-F0E	LTS222QV-F0Y	LTP241QV-F02
Display Size (inch)	1.66	1.82	1.9	2	2.2	2	2.22	2.41
Resolution	128xRGBx160	128xRGBx160	176xRGBx220	176xRGBx220	176xRGBx220	240xRGBx320	240xRGBx320	240xRGBx320
Display Mode	TMR	TMR	TMR	TMR	TMR	TMR	TMR	TMR
Display Colors	65K	65K	65K	65K	262K	65K	262K	262K
Interface	CPU	CPU	CPU	CPU	CPU	CPU	CPU	MDDI
Brightness (cd/m ²)	250	160	250	240	180	150	180	300
Contrast Ratio	300:1	150:1	250:1	TBD	200:1	400:1	350:1	400:1
Panel Power Consumption (mW)	10	10	14	TBD	25	42	22	TBD
B/L Power Consumption (mW)	150	150	150	TBD	wo BLU	256	280	TBD
Active Area (mm)	26.3x32.9	28.9x36.0	30.1x37.6	31.7x39.6	34.8x43.6	30.2x40.3	33.8x45.1	36.7x48.9
Module Dimensions (mm)	32.1x42.4x2.5	34.0x46.7x3.5	35.9x47.8x2.2	38.2x51.3x2.5	39.3x67.3x1.52 (wo BLU)	35.4x49.8x2.4	39.8x56.9x2.8	42.6x59.3x2.25
Sample Status	Now	Now	Now	Now	Now	Now	Now	Q4 '06
Mass Production	Now	Now	Now	Q4 '06	Now	Now	Q3 '06	Q2 '07

NOTES: TMR: Transmissive with Micro-Reflectivity mWV: Mobile wide-view plus
TSP: Touch-screen panel SLS: Single crystal like silicon
Specifications represent the main model of each product and are subject to change without prior notice

For More Information: http://www.samsung.com/Products/TFTLCD/common/product_list.aspx?family_cd=LCD03

MOBILE PHONE: MAIN + EXTERNAL DISPLAYS

Specifications	LTD222QV-F0E	
	Main	External
Display Size (inch)	2.22	1.07
Resolution	240xRGBx320	96xRGBx96
Display Mode	TMR	TMR
Display Colors	65K	65K
Interface	18 bit RGB	8 bit CPU
Brightness (cd/m ²)	200	110
Contrast Ratio	600:1	600:1
Panel Power Consumption (mW)	37	8
B/L Power Consumption (mW)	342	-
Active Area (mm)	33.8x45.1	12.3x19.3
Module Dimensions (mm)	40.5x57.3x5	40.5x57.3x5
Sample Status	Now	Now
Mass Production	Now	Now

NOTES: TMR: Transmissive with Micro-Reflectivity MHD: Mobile High Definition
Specifications represent the main model of each product and are subject to change without prior notice.

For More Information: http://www.samsung.com/Products/TFTLCD/common/product_list.aspx?family_cd=LCD03

INFORMATION DISPLAY APPLICATIONS - 40", 46", 57", 82"

	LTI400WT-L01	LTI460WT-L17	LTI460WT-L13	LTI400HS-L02	LTI460HS-L03	LTI570HH-L01	LTI820HS-L01
	40" Narrow Bezel	46" Narrow Bezel	46"	40" Full HD	46" Full HD	57"	82"
Resolution	WXGA	WXGA	WXGA	WXGA	WXGA	WXGA	WXGA
Aspect Ratio	16:09	16:09	16:09	16:09	16:09	16:09	16:09
Number of Pixels	1,366 x 768	1,366 x 768	1,366 x 768	1,920 x 1,080	1,920 x 1,080	1,366 x 768	1,366 x 768
Active Area (mm)	885.2 X 497.7	1,018.1 x 572.7	1,018.1 x 572.7	885.2 X 497.7	1018.1 x 572.7	1,251.36 x 703.89	1,805.76 x 1,015.74
Pixel Pitch (mm)	0.648	0.745	0.745	0.648	0.745	0.652	0.941
Mode	S-PVA	S-PVA	S-PVA	S-PVA	S-PVA	S-PVA	S-PVA
Number of Colors	16.7 M	16.7 M	16.7 M	16.7 M	16.7 M	16.7 M	16.7 M
Color Gamut	72%	72%	72%	72%	72%	72%	72%
Contrast Ratio (typ.)	1,200:1	1,200:1	1,200:1	1,200:1	1,200:1	1,200:1	1,200:1
Brightness (cd/m ²)	700	700	700	450	500	600	600
Response Time (ms at 25°C)	8 ms	8 ms	8 ms	8 ms	8 ms	8 ms	8 ms
Viewing Angle (U/D/L/R)	89/89/89/89	89/89/89/89	89/89/89/89	89/89/89/89	89/89/89/89	89/89/89/89	89/89/89/89
Interface	1 Ch. LVDS	1 Ch. LVDS	1 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	2 Ch. LVDS	LVDS / TMDS
Power Supply Voltage (V)	5v(Logic), 24v(BLU)	5v(Logic), 24v(BLU)	5v(Logic), 24v(BLU)	12v(Logic), 24v(BLU)	12v(Logic), 24v(BLU)	12v(Logic), 24v(BLU)	12v(Logic), 24v(BLU)
Outline Dimensions (mm)	911.7 x 524.2 x 58.7	1,047.4 x 600.6 x 56.0	1,083 x 627 x 67.8	952.0 x 551.0 x 50.1	1,083 x 627 x 56.5	1,328 x 764 x 63.5	1,875 x 1,080 X 84.1
Weight (g)	12,600	16,500	16,500	TBD	TBD	TBD	TBD
Production	Now	Now	Now	October	October	Oct./Nov.	Nov./Dec.

NOTE: All monitors are 16:9 WXGA, high contrast, fast response time, high brightness

DIGITAL IMAGING: ENTERTAINMENT

DSC/DVC/Photo Printers/PMP/VoIP/Games/Other

Specifications	LTE182QO-F03	LTE222QV-F01	LTV250QV-F01	LTV250QV-F02	LTV200WQ-F02
Application	MP3/DAB/DVB-H	MP4/DAB/DVB-H	MP5/DAB/DVB-H	MP6/DAB/DVB-H	DSC
Display Size (inch)	1.82	2.22	2.50	2.50	2.00
Resolution	128xRGBx160	320xRGBx240	320xRGBx240	320xRGBx240	480x240
Display Mode	TMR	TMR	TMR	TMR	TMR
Display Colors	65K	262K	16.7M	262K	16.7M
Interface	CPU	CPU	8bit RGB	6bit RGB	8bit RGB
Brightness (cd/m ₂)	250	190	220	220	190
Contrast Ratio	250:1	400:1	300:1	300:1	250:1
Panel Power Consumption		45	40	40	25
B/L Power Consumption	150	165	200	200	115
Active Area (mm)	26.3x32.9	44.64x33.84	50.88x38.04	50.88x38.04	40.84x30.48
Module Dimensions (mm)	34.9x45.7	55.96x40.04	56.98x47.94	56.98x47.94	47.24x41.08
Sample Status	Available	Available	Available	Available	Available
Mass Production	MP	MP	MP	MP	MP

Specifications	LTV236WQ-F09	LTV250QV-F0A	LTV300QV-F01	LTV300QV-C02	LTV300GV-B01
Application	DSC	DSC	DSC	DSC	DSC/PMP/VoIP
Display Size (inch)	2.36	2.50	3.00	3.00	3.00
Resolution	480x234	960x240	960x242	960x243	640xRGBx480
Display Mode	TMR	TMR	mSWV+	mSWV+	mSWV+
Display Colors	16.7M	16.7M	16.7M	16.7M	16.7M
Interface	CPU	CPU	8bit RGB	6bit RGB	8bit RGB
Brightness (cd/m ₂)	240	250	250	300	TBD
Contrast Ratio	200:1	250:1	400:1	500:1	TBD
Panel Power Consumption	25	(30)			
B/L Power Consumption	150	(160)	TBD	TBD	TBD
Active Area (mm)	48.05x35.92	49.95x37.44	60.48x44.76	60.94x49.32	60.48x45.36
Module Dimensions (mm)	55.20x47.50	55.95x47.90	71.98x51.76	69.56x51.52	68.65x45.36
Sample Status	Available	2006.12	2006.12	2007.4	2006.12
Mass Production	MP	2007.1Q	2007.1Q	2007.2Q	2007.2Q

NOTES: TMR: Transmissive with Micro-Reflectivity mSWV+: mobile Super Wide View (mPVA)
 Specifications represent the main model of each product and are subject to change without prior notice.

MOBILE AV

Mini PCs/CNS/Car TVs/P-DVDs/Industrial Applications

Specifications	LTV350QV-F04	LTV350QV-F0A	LTV350QV-F0E	LTV350QV-F0F	LTV350QV-F0G	LTE400WQ-F01	LTE400WQ-F02	LTE400WQ-E01
Display Size (inch)	3.50	3.50	3.50	3.50	3.50	4.00	4.00	4.00
Resolution	320xRGBx240	320xRGBx240	320xRGBx240	320xRGBx240	320xRGBx240	480x272xRGB	480x272xRGB	480x272xRGB
Display Mode	TMR	TMR	TMR	TMR	TMR	TMR	TMR	Transflective
Display Colors	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M
Interface	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F
Brightness (cd/m ²)	250	200	320	350	300	250	280	180
Contrast Ratio	300	300	300	300	300	400	400	180
Panel Power Consumption	400	400	400	400	400	400	530	530
B/L Power Consumption	150mW	200mW	TBD	200mW	200mW	400mW	390mW	3400mW
Light Source	LED	LED	LED	LED	LED	LED	LED	LED
Storage Temperature - (°C)	30~70	-30~70	-30~70	-30~70	-30~70	-30~70	-30~70	-30~70
Operation Temperature (°C)	-20~70	-20~70	-20~70	-20~70	-20~70	-20~60	-20~60	-20~60
Active Area (mm)	70.08x52.56	70.08x52.56	70.08x52.56	70.08x52.56	70.08x52.56	87.84x49.78	87.84x49.78	87.84x49.78
Module Dimensions (mm)	76.90x63.90x3.15	76.90*63.90x4.25	76.90*63.90x4.25	76.90x63.90x3.15	76.90*63.90x4.25	98.3x62.6x3.8	98.3x62.6x4.85	98.3x62.6x4.85
Mass Production	Now	Now	Now	Now	Now	Now	Now	Now
Remarks	Now	Now	Now	3Q '06	3Q '06	Now	Now	Now

Specifications	LTE430WQ-F07	LTE480WQ-F01	LTP500WV-F03	LTE700WQ-F05	LTP700WV-F01	LTP700WV-F02	LTA120W1-T02
Display Size (inch)	4.30	4.80	5.00	7.0	7.0	7.0	12.0
Resolution	480x272xRGB	480x272xRGB	800xRGB*480	480x234xRGB	800x480xRGB	800x480xRGB	800xRGBx480
Display Mode	TMR	TMR	TMR	TMR	TMR	TMR	Transmissive
Display Colors	16.7M	16.7M	262K	16.7M	16.7M	16.7M	262K
Interface	24 bit RGB I/F	24 bit RGB I/F	18 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	24 bit RGB I/F	6 bit RGB
Brightness (cd/m ²)	350	350	170	450	350	350	330
Contrast Ratio	400	400	250	500	400	400	300
Panel Power Consumption	80	110	300	87	TBD	TBD	957
B/L Power Consumption	480	480	888	3.8W	TBD	TBD	6.84W
Light Source	LED	LED	LED	CCFL	LED	CCFL	CCFL
Storage Temperature - (°C)	-30~70	-30~70	-30~70	-20~70	-20 ~ 70	-20 ~ 70	-30~70
Operation Temperature (°C)	-20~60	-20~60	-20~60	-10~60	-10 ~ 60	-10 ~ 60	0~70
Active Area (mm)	95.04x53.86	105.84x59.98	109.2x65.52	154.08x86.58	152.4x91.44	152.4x91.44	265.8x149.52
Module Dimensions (mm)	105.3x67.2x3.95	114.24x72.88x3.2	122.4x79.0x3.75	166x100x5.7	163.2x104x3.4	165x104x5.4	283.1x171.4x13.0
Mass Production	Now	Now	Now	Now	3Q '06	3Q '06	Now
Remarks	Now	4Q '06	Now	Now	4Q '06	4Q '06	4Q '06

NOTES: Specifications represent the main model of each product and are subject to change without prior notice.

For More Information: <http://www.samsung.com/Products/TFTLCD>



www.usa.samsungsemi.com

Copyright 2006-08-22. Samsung and Samsung Semiconductor, Inc. are registered trademarks of Samsung Electronics, Co., Ltd. All other names and brands may be claimed as the property of others. The appearance of all products, dates, figures, diagrams and tables are subject to change at any time, without notice.

BR-06-ALL-003 Printed 8/06