

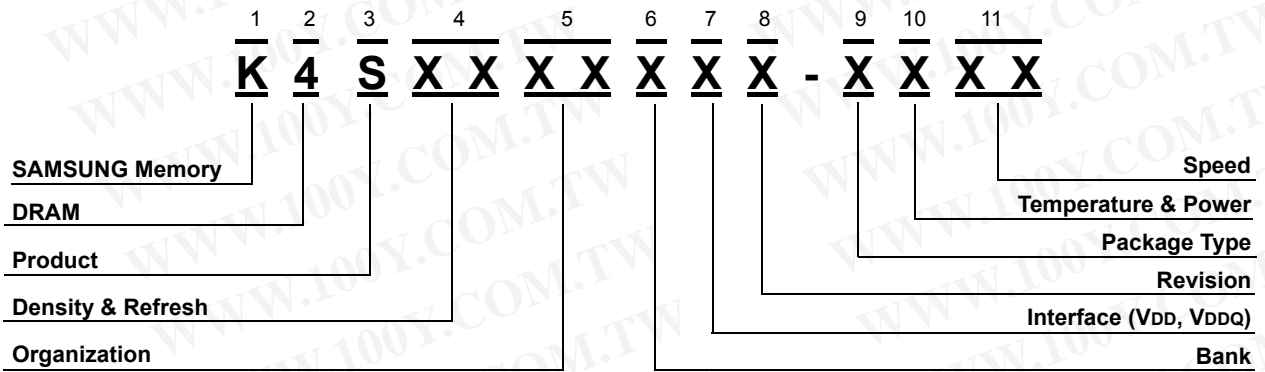
勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

SDRAM Product Guide

November 2007

Memory Division

A. SDRAM Component Ordering Information



1. SAMSUNG Memory : K

2. DRAM : 4

3. Product

S : SDRAM

4. Density & Refresh

- 16 : 16Mb, 4K/64ms
- 64 : 64Mb, 4K/64ms
- 28 : 128Mb, 4K/64ms
- 56 : 256Mb, 8K/64ms
- 51 : 512Mb, 8K/64ms

5. Organization

- 04 : x 4
- 06 : x 4 Stack (Flex frame)
- 07 : x 8 Stack (Flex frame)
- 08 : x 8
- 16 : x16
- 32 : x32

6. Bank

- 2 : 2 Banks
- 3 : 4 Banks

7. Interface (VDD, VDDQ)

- 2 : LVTTTL (3.3V, 3.3V)

8. Revision

- M : 1st Gen.
- A : 2nd Gen.
- B : 3rd Gen.
- C : 4th Gen.
- D : 5th Gen.
- E : 6th Gen.
- F : 7th Gen.
- H : 9th Gen.
- J : 11th Gen.
- K : 12th Gen.
- N : 14th Gen.

9. Package Type

- T : TSOP II
- N : sTSOP II
- L : TSOP II(Lead-free & Halogen-free)¹
- U : TSOP II (Lead-free)¹
- V : sTSOP II (Lead-free)¹

Note 1: All of Lead-free or Halogen-free product are in compliance with RoHS

10. Temperature & Power

- C : Commercial Temp.(0°C ~ 70°C) & Normal Power
- L : Commercial Temp.(0°C ~ 70°C) & Low Power
- I : Industrial Temp.(-40°C ~ 85°C) & Normal Power
- P : Industrial Temp.(-40°C ~ 85°C) & Low Power

11. Speed (Default CL= 3)

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

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B. SDRAM Component Product Guide

Density	Bank	Part Number	Package ¹ & Power ² & Speed ³	Org.	Interface	Refresh	Power (V)	Package	Avail.
64Mb K-die	4Banks	K4S640832K	UC75 UL75	8M x 8	LVTTL	4K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	EOL DEC. '08
		K4S641632K	UC50/C60/C75 UL50/L60/L75	4M x 16					
64Mb N-die	4Banks	K4S640832N	LC75 LL75	8M x 8	LVTTL	4K/64ms	3.3 ± 0.3V	Lead-free & Halogen-free 54pin TSOP(II)	4Q'07 CS
		K4S641632N	LC50/C60/C75 LL50/L60/L75	4M x 16					
128Mb I-die	4Banks	K4S280432I	UC75 UL75	32M x 4	LVTTL	4K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	EOL AUG. '08
		K4S280832I	UC75 UL75	16M x 8					
		K4S281632I	UC60/C75 UL60/L75	8M x 16					
128Mb K-die	4Banks	K4S280432K	U ⁴ C75 UL75	32M x 4	LVTTL	4K/64ms	3.3 ± 0.3V	Lead-free & Halogen-free 54pin TSOP(II) ⁴	Now
		K4S280832K	UC75 UL75	16M x 8					
		K4S281632K	UC60/C75 UL60/L75	8M x 16					
256Mb H-die	4Banks	K4S560432H	UC75 UL75	64M x 4	LVTTL	8K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	EOL SEP. '08
		K4S560832H	UC75 UL75	32M x 8					
		K4S561632H	UC60/C75 UL60/L75	16M x 16					
256Mb J-die	4Banks	K4S560432J	U ⁴ C75 UL75	64M x 4	LVTTL	8K/64ms	3.3 ± 0.3V	Lead-free & Halogen-free 54pin TSOP(II) ⁴	Now
		K4S560832J	UC75 UL75	32M x 8					
		K4S561632J	UC60/C75 UL60/L75	16M x 16					
512Mb D-die	4Banks	K4S510432D	UC75 UL75	128M x 4	LVTTL	8K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	Now
		K4S510832D	UC75 UL75	64M x 8					
		K4S511632D	UC75 UL75	32M x 16					

Note 1 :
 U : TSOP(II) (Lead-free)
 L : TSOP(II) (Lead-free & Halogen-free)

Note 3 :

Note 2 :

Temperature and Power	Description
C	Temperature, Normal Power
L	Temperature, Low Power

Speed	Description
75	7.5ns, PC133 (133Mhz @ CL=3)
60	6.0 ns (166Mhz @ CL=3)
50	5.0 ns (200Mhz @ CL=3)

* All products have backward compatibility with PC100.

- Commercial Temp (0°C < Ta < 70°C)

Note 4 : 128Mb K-die SDR and 256Mb J-die SDR DRAMs support Lead-free & Halogen-free package with Lead-free package code(-U)

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C. Industrial Temperature SDRAM Component Product Guide

Density	Bank	Part Number	Package ^{*1} & Power ^{*2} & Speed ^{*3}	Org.	Interface	Refresh	Power (V)	Package	Avail.
64Mb K-die	4Banks	KS641632K	UI60/I75 UP60/P75	4M x 16	LVTTTL	4K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	EOL DEC.'08
64Mb N-die	4Banks	KS641632N	LI60/I75 LP60/P75	4M x 16	LVTTTL	4K/64ms	3.3 ± 0.3V	Lead-free & Halogen-free 54pin TSOP(II)	1Q'08
128Mb I-die	4Banks	K4S281632I	UI60/I75 UP60/P75	8M x 16	LVTTTL	4K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	EOL AUG.'08
128Mb K-die	4Banks	K4S281632K	U ⁴ I60/I75 UP60/P75	8M x 16	LVTTTL	4K/64ms	3.3 ± 0.3V	Lead-free & Halogen-free 54pin TSOP(II) ⁴	Now
256Mb H-die	4Banks	K4S561632H	UI60/I75 UP60/P75	16M x 16	LVTTTL	8K/64ms	3.3 ± 0.3V	Lead-free 54pin TSOP(II)	EOL SEP.'08
256Mb J-die	4Banks	K4S561632J	U ⁴ I60/I75 UP60/P75	16M x 16	LVTTTL	8K/64ms	3.3 ± 0.3V	Lead-free & Halogen-free 54pin TSOP(II) ⁴	Now

Note 1 :

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

Note 3 :

Speed	Description
75	7.5ns, PC133 (133Mhz @ CL=3)
60	6.0 ns (166Mhz @ CL=3)
50	5.0 ns (200Mhz @ CL=3)

Note 2 :

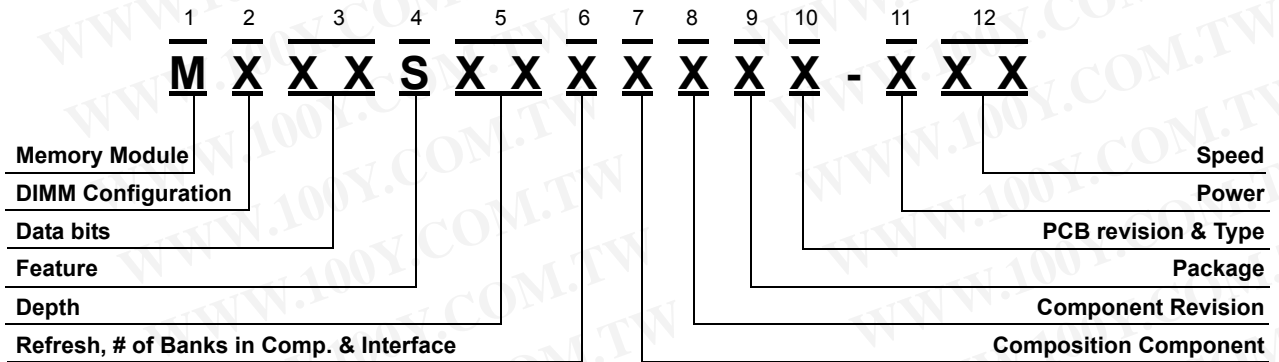
Temperature and Power	Description
I	Industrial Temperature, Normal Power
P	Industrial Temperature, Low Power

- Industrial Temp (-40°C < Ta < 85°C)

Note 4 : 128Mb K-die SDR and 256Mb J-die SDR DRAMs support Lead-free & Halogen-free package with Lead-free package code(-U)

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D. SDRAM Module Ordering Information



1. Memory Module : M

2. DIMM Configuration

- 3 : DIMM
- 4 : SODIMM

3. Data Bits

- 63 : **x63** PC100 / PC133 μ SODIMM with SPD for 144pin
- 64 : **x64** PC100 / PC133 SODIMM with SPD for 144pin (Intel/JEDEC)
- 66 : **x64** Unbuffered DIMM with SPD for 144pin/168pin (Intel/JEDEC)
- 74 : **x72** /ECC Unbuffered DIMM with SPD for 168pin (Intel/JEDEC)
- 77 : **x72** /ECC PLL + Register DIMM with SPD for 168pin (Intel PC100)
- 90 : **x72** /ECC PLL + Register DIMM with SPD for 168pin (JEDEC PC133)

4. Feature

- S : SDRAM

5. Depth

- 16 : 16M
- 32 : 32M
- 64 : 64M
- 28 : 128M
- 56 : 256M
- 09 : 8M (for 128Mb/512Mb)
- 17 : 16M (for 128Mb/512Mb)
- 33 : 32M (for 128Mb/512Mb)
- 65 : 64M (for 128Mb/512Mb)
- 29 : 128M (for 128Mb/512Mb)
- 59 : 256M (for 128Mb/512Mb)

6. Refresh, # of Banks in comp. & Interface

- 2 : 4K/ 64ms Ref., 4Banks & LVTTL
- 5 : 8K/ 64ms Ref., 4Banks & LVTTL

7. Composition Component

- 0 : x 4
- 3 : x 8
- 4 : x16
- 8 : x 4 Stack (Flexframe)
- 9 : x 8 Stack (Flexframe)

8. Component Revision

- M : 1st Gen.
- B : 3rd Gen.
- D : 5th Gen.
- F : 7th Gen.
- J : 11h Gen.
- A : 2nd Gen.
- C : 4th Gen.
- E : 6th Gen.
- H : 9h Gen.

9. Package

- T : TSOP(II) (400mil)
- N : sTSOP(II) (400mil)
- U : TSOP(II) Lead-free (400mil)
- V : sTSOP(II) Lead-free (400mil)

10. PCB Revision & Type

- 0 : Mother PCB
- 2 : 2nd Rev.
- U : Low Profile DIMM
- 1 : 1st Rev.
- 3 : 3rd Rev.
- S : 4Layer PCB.

11. Power

- C : Commercial Normal (0°C ~ 70°C)
- L : Commercial Low (0°C ~ 70°C)

12. Speed (Default CL= 3)

- 7A : PC133 (133MHz CL=3/PC100 CL2)

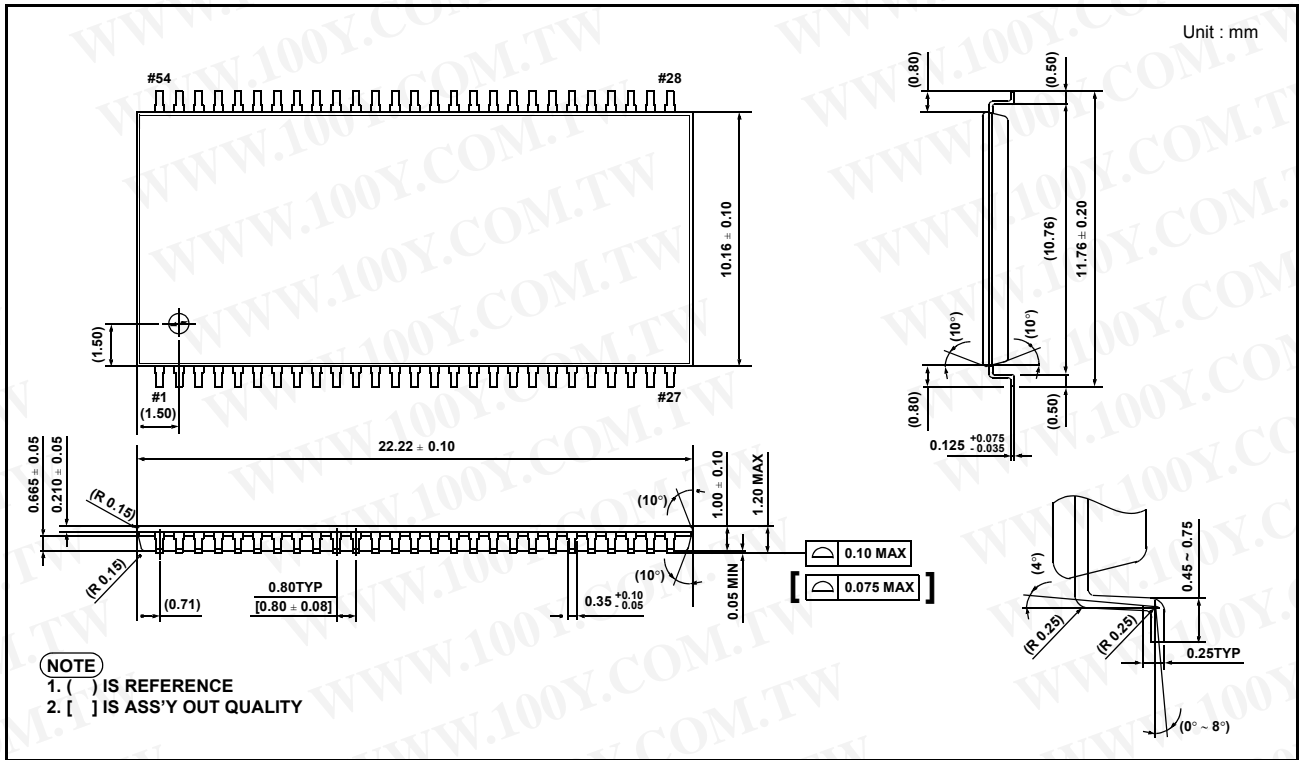
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E. SDRAM Module Product Guide

Org.	Density	Part No.	Speed	Composition	Comp. Version	Power (V)	Internal Banks	External Banks	Feature	Avail.		
168pin PC133 Registered DIMM												
32Mx72	256MB	M390S3253HU1	C7A	32M x 8 * 9 pcs	256Mb H-die	3.3 V	4	1	DS, 1500mil	EOL JUN.'08		
64Mx72	512MB	M390S6450HU1	C7A	64M x 4 * 18 pcs	256Mb H-die			1	DS, 1700mil			
		M390S6450HUU	C7A	64M x 4 * 18 pcs	256Mb H-die			1	DS, 1200mil			
168pin PC133 Unbuffered DIMM												
8Mx64	64MB	M366S0924IUS	C7A	8M x 16 * 4 pcs	128Mb I-die	3.3V	4	1	SS, 1000mil	EOL JUN.'08		
16Mx64	128MB	M366S1723IUS	C7A	16M x 8 * 8 pcs	128Mb I-die			1	SS, 1375mil			
		M366S1654HUS	C7A	16M x 16 * 4 pcs	256Mb H-die			1	SS, 1000mil	EOL JUN.'08		
		M366S1654JUS	C7A	16M x 16 * 4 pcs	256Mb J-die			1	SS, 1000mil	Now		
		M374S1723IUS	C7A	16M x 8 * 9 pcs	128Mb I-die			1	SS, 1375mil	EOL JUN.'08		
16Mx72	256MB	M366S3323IUS	C7A	16M x 8 * 16 pcs	128Mb I-die			2	DS, 1375mil			
32Mx64		M374S3323IUS	C7A	16M x 8 * 18 pcs	128Mb I-die			2	DS, 1375mil			
32Mx72		M366S3253JUS	C7A	32M x 8 * 8 pcs	256Mb J-die			1	SS, 1375mil	Now		
64Mx64	512MB	M366S6453HUS	C7A	32M x 8 * 16 pcs	256Mb H-die			2	DS, 1375mil	EOL JUN.'08		
		M366S6453JUS	C7A	32M x 8 * 16 pcs	256Mb J-die			2	DS, 1375mil	Now		
144pin PC133 SODIMM												
16Mx64	128MB	M464S1724IUS	L7A	8M x 16 * 8 pcs	128Mb I-die			3.3V	4	1	DS, 1250mil	EOL JUN.'08
		M464S1724KUS	L7A	8M x 16 * 8 pcs	128Mb K-die					1	DS, 1250mil	Now
32Mx64	256MB	M464S3254HUS	L7A	16M x 16 * 8 pcs	256Mb H-die					1	DS, 1250mil	EOL JUN.'08
		M464S3254JUS	L7A	16M x 16 * 8 pcs	256Mb J-die	1	DS, 1250mil			Now		
64Mx64	512MB	M464S6453HV0	L7A	32M x 8 * 16 pcs	256Mb H-die	2	DS, 1250mil			EOL JUN.'08		
		M464S6453JV0	L7A	32M x 8 * 16 pcs	256Mb J-die	2	DS, 1250mil			Now		

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F. Package Dimension



54Pin TSOP(II) Package Dimension

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For further information,

semiconductor@samsung.com

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