

Consumer DRAM Code Information(1/3)

Last Updated : September 2009

K **4** 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. DRAM : 4

3. Small Classification

S : SDRAM
H : DDR SDRAM
T : DDR2 SDRAM
B : DDR3 SDRAM
D : GDDR
J : GDDR3

4~5. Density, Refresh

16 : 16M, 4K/64ms
64 : 64M, 4K/64ms
28 : 128M, 4K/64ms
56 : 256M, 8K/64ms
51 : 512M, 8K/64ms
10 : 1G, 8K/32ms
1G : 1G, 8K/64ms
2G : 2G, 8K/64ms

6~7. Organization

04 : x4
08 : x8
16 : x16
32 : x32
31 : x32 (2CS)

8. Bank

2 : 2 Banks
3 : 4 Banks
4 : 8 Banks

9. Interface, VDD, VDDQ

2 : LVTTTL, 3.3V, 3.3V
8 : SSTL_2, 2.5V, 2.5V
Q : SSTL_18, 1.8V, 1.8V
6 : SSTL_15, 1.5V, 1.5V
K : POD 18, 1.8V, 1.8V

10. Generation

M : M-die	A : A-die
B : B-die	C : C-die
D : D-die	E : E-die
F : F-die	G : G-die
H : H-die	I : I-die
J : J-die	K : K-die
L : L-die	N : N-die
O : O-die	S : S-die

11. “—”

12. Package

U : TSOP2 (Lead-Free)
100TQFP (Lead-Free) only for 128Mb GDDR
Z : FBGA (Lead-Free)
V : 144FBGA (Lead-Free) only for 128Mb GDDR
L : TSOP2 (Lead-Free & Halogen-Free)
H : FBGA (Lead-Free & Halogen-Free)
F : FBGA (Lead-Free & Halogen-Free)
for 64Mb DDR, 128Mb GDDR
M : FBGA DDP (Lead-free & Halogen-free)

13. Temp, Power

C : Commercial (0°C ~ 70°C), Normal Power
L : Commercial (0°C ~ 70°C), Low Power
I : Industrial (-40°C ~ 85°C), Normal Power
P : Industrial (-40°C ~ 85°C), Low Power
D : Industrial (-40°C ~ 85°C), Super Low Power
Q : Commercial Temp. DDR3+ (Gapless, BL4)

Consumer DRAM Code Information(2/3)

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

14~15. Speed

- 75 : 7.5ns, PC133 (133MHz CL=3)
- 60 : 6.0ns (166MHz CL=3)
- 50 : 5.0ns (200MHz CL=3)
- 40 : 4.0ns (250MHz CL=3)
- B0 : DDR266 (133MHz@CL=2.5, tRCD=3, tRP=3)
- B3 : DDR333 (166MHz@CL=2.5, tRCD=3, tRP=3)
- CC : DDR400 (200MHz@CL=3, tRCD=3, tRP=3)
- CD : DDR500 (250MHz@CL=3, tRCD=4, tRP=4)
- E6 : DDR2-667 (333MHz@CL=5, tRCD=5, tRP=5)
- E7 : DDR2-800 (400MHz@CL=5, tRCD=5, tRP=5)
- F7 : DDR2/3-800 (400MHz@CL=6, tRCD=6, tRP=6)
- F8 : DDR2/3-1066 (533MHz@CL=7, tRCD=7, tRP=7)
- H9 : DDR3-1333 (667MHz@CL=9, tRCD=9, tRP=9)
- K0 : DDR3-1600 (800MHz@CL=11, tRCD=11, tRP=11)
- 7A : GDDR3-2.6Gbps (0.77ns)
- 08 : GDDR3-2.4Gbps (0.8ns)
- 1A : GDDR3-2.0Gbps (1.0ns)
- 12 : GDDR3-1.6Gbps (1.25ns)
- 14 : GDDR3-1.4Gbps (1.4ns)

Consumer DRAM Code Information(3/3)

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16. Packing “Packing Type Reference”

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

Divide	Packing Type	New Marking
Component	TAPE & REEL	T
	Other (Tray, Tube, Jar)	0 (Number)
	Stack	S
Module	MODULE TAPE & REEL	P
	MODULE Other Packing	M

17~18. Customer “Customer List Reference”