M6MGB/T647M33KT

67,108,864-BIT (4,194,304-WORD BY 16-BIT) CMOS FLASH MEMORY   &

33,554,432-BIT (2,097,152-WORD BY 16-BIT) CMOS MOBILE RAM

Stacked-μMCP (micro Multi Chip Package)

Description

The M6MGB/T647M33KT is a Stacked micro Multi Chip Package (S-μMCP) that contents 64M-bit Flash memory and 32M-bit Mobile RAM in a 52-pin TSOP.

64M-bit Flash memory is a 4,194,304 words, single power supply and high performance non-volatile memory fabricated by CMOS technology for the peripheral circuit and DINOR IV (Divided bit-line NOR IV) architecture for the memory cell. All memory blocks are locked and can not be programmed or erased, when F-WP# is Low. Using Software Lock Release function, program or erase operation can be executed.

32M-bit Mobile RAM is a 2,097,152 words high density RAM fabricated by CMOS technology for the peripheral circuit and DRAM cell for the memory array. The interface is compatible to an asynchronous SRAM.

The cells are automatically refreshed and the refresh control is not required for system. The device also has the partial block refresh scheme and the power down mode by writing the command.

The M6MGB/T647M33KT is suitable for a high performance cellular phone and a mobile PC that are required to be small mounting area, weight and small power dissipation.
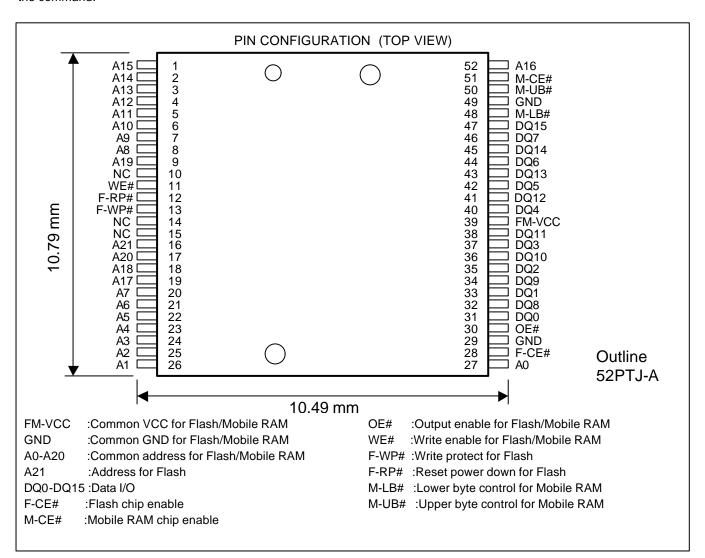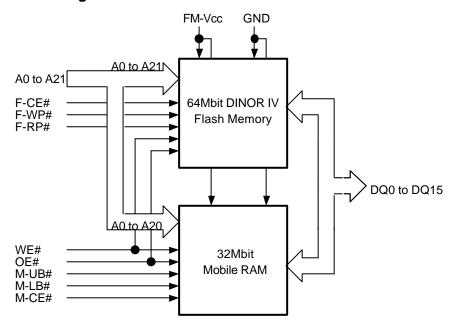
Features

Access Time	Flash	85ns (Max.)
	Mobile RAM	85ns (Max.)
Supply Voltage		FM-VCC=2.7 ~ 3.0V
Ambient Temperature		Ta=-20 ~ 85°C
Package		52pin TSOP(Type-II),
		Lead pitch 0.4mm

Application

Mobile communication products

PIN CONFIGURATION (TOP VIEW)

Pin	Signal		Pin	Signal
1	A15		52	A16
2	A14		51	M-CE#
3	A13		50	M-UB#
4	A12		49	GND
5	A11		48	M-LB#
6	A10		47	DQ15
7	A9		46	DQ7
8	A8		45	DQ14
9	A19		44	DQ6
10	NC		43	DQ13
11	WE#		42	DQ5
12	F-RP#		41	DQ12
13	F-WP#		40	DQ4
14	NC		39	FM-VCC
15	NC		38	DQ11
16	A21		37	DQ3
17	A20		36	DQ10
18	A18		35	DQ2
19	A17		34	DQ9
20	A7		33	DQ1
21	A6		32	DQ8
22	A5		31	DQ0
23	A4		30	OE#
24	A3		29	GND
25	A2		28	F-CE#
26	A1		27	A0

10.79 mm

10.49 mm

Outline 52PTJ-A

FM-VCC	:Common VCC for Flash/Mobile RAM	OE#	:Output enable for Flash/Mobile RAM
GND	:Common GND for Flash/Mobile RAM	WE#	:Write enable for Flash/Mobile RAM
A0-A20	:Common address for Flash/Mobile RAM	F-WP#	:Write protect for Flash
A21	:Address for Flash	F-RP#	:Reset power down for Flash
DQ0-DQ15	:Data I/O	M-LB#	:Lower byte control for Mobile RAM
F-CE#	:Flash chip enable	M-UB#	:Upper byte control for Mobile RAM
M-CE#	:Mobile RAM chip enable		

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MCP Block Diagram

Note: In the data sheet there are "VCC"s and they means FM-VCC(the common power supply for Flash and Mobile RAM). In the Mobile RAM part UB# and LB# are M-UB# and M-LB#, respectively.

Capacitance

Symbol	Parameter		Test Conditions	Limits			Unit
				Min.	Typ.	Max.	
CIN	Input capacitance	A21-A0, OE#, WE#, F-CE#, M-CE#, F-WP#, F-RP#, M-LB#, M-UB#	Ta = 25 °C, f = 1MHz, Vin = Vout = 0V			18	pF
COUT	Output capacitance	DQ15-DQ0				22	pF

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