Microelectronics Catalog Quick Reference Guide

Embedded Flash — SLC NAND

SLC NAND SSD BGA

Size	Interface	Part Number	Max Speed (Read/Write)	Voltage (V)	Package	Dimensions	Temperature
8GB	PATA	W7N8GVHxxBI*ƒ*	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I
16GB	PATA	W7N16GVHxxBI*ƒ*	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I
37.5GB	SATA	MSM37*ƒ*	45MB/s / 30MB/s	3.3	522 PBGA	28mm x 32mm	C, I
75GB	SATA	MSM75*ƒ*	45MB/s / 30MB/s	3.3	522 PBGA	28mm x 32mm	C, I

Extended Temperature Plastics — Memories

DDR3 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
1GB	128M x 64	W3J128M64G-XPBX	800-1333	1.5	375 PBGA	21.5mm x 20.5mm	C, I
1GB	128M x 72	W3J128M72G-XPBX	800-1333	1.5	375 PBGA	21.5mm x 20.5mm	C, I
2GB	256M x 64	W3J256M64G-XPBX*ƒ*	800-1333	1.5	375 PBGA	20.5mm x 23.5mm	C, I
2GB	256M x 72	W3J256M72G-XPBX*ƒ*	800-1333	1.5	375 PBGA	20.5mm x 23.5mm	C, I
4GB	512M x 64	W3J512M64G-XPBX*ƒ*	800-1333	1.5	543 PBGA	23mm x 32mm	C, I
4GB	512M x 72	W3J512M72G-XPBX*ƒ*	800-1333	1.5	543 PBGA	23mm x 32mm	C, I

DDR2 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
128MB	64M x 16	W3H64M16E-XBX	400-667	1.8	79 PBGA	11mm x 14mm	C, I, M
256MB	2 x 64M x 16	W3H264M16E-XSBX	400-667	1.8	79 PBGA	11mm x 14mm	C, I, M
256MB	32M x 64	W3H32M64E-XSBX	400-667	1.8	208 PBGA	16mm x 20mm	C, I, M
256MB	32M x 72	W3H32M72E-XSB2X	400-667	1.8	208 PBGA	16mm x 20mm	C, I, M
512MB	64M x 64	W3H64M64E-XSBX	400-667	1.8	208 PBGA	16mm x 22mm	C, I, M
512MB	64M x 72	W3H64M72E-XSBX	400-667	1.8	208 PBGA	16mm x 22mm	C, I, M
1GB	128M x 72	W3H128M72E-XSBX	400-667	1.8	208 PBGA	16mm x 22mm	C, I, M
1GB	128M x 64	W3H128M64E-XSBX	400-667	1.8	208 PBGA	16mm x 22mm	C, I, M

Registered DDR2 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
1GB	128M x 72	W3H128M72ER-XNBX*ƒ*	400-667	1.8	255 PBGA	21mm x 23mm	C, I, M

DDR SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
128MB	64M x 16	W3E64M16S-XSBX	200-333	2.5	60 PBGA	10mm x 12.5mm	C, I, M
128MB	64M x 16	W3E64M16S-XNBX	200-333	2.5	60 PBGA	10mm x 12.5mm	C, I, M
128MB	16M x 64	W3E16M64S-XBX	200-266	2.5	219 PBGA	21mm x 25mm	C, I, M
128MB	16M x 72	W3E16M72S-XBX	200-333	2.5	219 PBGA	32mm x 25mm	C, I, M
256MB	32M x 64	W3E32M64S-XBX	200-333	2.5	219 PBGA	25mm x 25mm	C, I, M
256MB	32M x 64	W3E32M64SA-XBX	200-333	2.5	219 PBGA	25mm x 25mm	C, I, M
256MB	32M x 64	W3E32M64S-XSBX	200-333	2.5	208 PBGA	13mm x 22mm	C, I, M
256MB	32M x 72	W3E32M72S-XBX	200-333	2.5	219 PBGA	25mm x 32mm	C, I, M
256MB	32M x 72	W3E32M72S-XSBX	200-333	2.5	208 PBGA	16mm x 22mm	C, I, M
512MB	64M x 72	W3E64M72S-XSBX	200-266	2.5	219 PBGA	32mm x 25mm	C, I, M

Registered DDR SDRAM MCPs

Size	Organization	Part Number	Speed (MHz)	Voltage (V)	Package	Dimensions	Temperature
128MB	16M x 72	W3E16M72SR-XBX	200-250	2.5	219 PBGA	32mm x 25mm	C, I, M
256MB	32M x 72	W3E32M72SR-XSBX	200-266	2.5	208 PBGA	16mm x 25mm	C, I, M

SSRAM MCPs

Size	Organization	Part Number	Speed (MHz)	Voltage (V)	Package	Dimensions	Temperature
2MB	512K x 32	WED2DL32512V-XBX	133-200	3.3	119 PBGA	14mm x 22mm	C, I, M
2MB	256K x 72	WEDPY256K72V-XBX	100-200	3.3	159 PBGA	14mm x 22mm	C, I, M
4MB	512K x 72 NBL	WEDPZ512K72V-XBX	100-150	3.3	152 PBGA	17mm x 23mm	C, I, M
4MB	512K x 72 NBL	WEDPZ512K72S-XBX	100-150	2.5	152 PBGA	17mm x 23mm	C, I, M

NOR Flash MCPs

Size	Organization	Part Number	Speed (ns)	Voltage (V)	Package	Dimensions	Temperature
Conventional							
16MB	2M x 64	W72M64VB-XBX	90-150	3.3	159 PBGA	13mm x 22mm	C, I, M
Page Mode							
32MB	8M x 32	W78M32VP-XBX	110, 120	3.3	159 PBGA	13mm x 22mm	C, I, M
64MB	8M x 64	W78M64VP-XSBX	110, 120	3.3	159 PBGA	13mm x 22mm	C, I, M
256MB	64M x 32	W764M32V-XSBX	100, 120	3.3	107 PBGA	14mm x 17mm	C, I, M
512MB	128M x 32	W7128M32V-XSBX*	100, 120	3.3	107 PBGA	14mm x 17mm	C, I, M
128MB	32M x 32	W732M32E-XPBX*	100, 120	1.8	119 PBGA	9mm x 17mm	C, I, M

(ƒ) Preliminary product — This product is developmental, is not fully characterized or qualified and is subject to change without notice. Check with factory for availability.
** Advanced product — This product is developmental, is not qualified and is subject to change or cancellation without notice.*

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Extended Temperature Plastics — Memories (continued)

SDRAM MCPs

Size	Organization	Part Number	Speed (MHz)	Voltage (V)	Package	Dimensions	Temperature
32MB	4M x 64	WEDPN4M64V-XBX	100-133	3.3	219 PBGA	21mm x 21mm	C, I, M
32MB	4M x 72	WEDPN4M72V-XB2X	100-133	3.3	219 PBGA	21mm x 21mm	C, I, M
64MB	8M x 64	WEDPN8M64V-XB2X	100-133	3.3	219 PBGA	21mm x 21mm	C, I, M
64MB	8M x 72	WEDPN8M72V-XB2X	100-133	3.3	219 PBGA	21mm x 25mm	C, I, M
128MB	16M x 64	WEDPN16M64V-XB2X	100-133	3.3	219 PBGA	21mm x 21mm	C, I, M
128MB	16M x 72	WEDPN16M72V-XB2X	100-133	3.3	219 PBGA	21mm x 25mm	C, I, M
256MB	32M x 64	W332M64V-XBX	100-133	3.3	219 PBGA	25mm x 25mm	C, I, M
256MB	32M x 64	W332M64V-XSBX	100-133	3.3	208 PBGA	13mm x 22mm	C, I, M
256MB	32M x 72	W332M72V-XBX	100-133	3.3	219 PBGA	32mm x 25mm	C, I, M
256MB	32M x 72	W332M72V-XSBX	100-133	3.3	208 PBGA	16mm x 22mm	C, I, M
512MB	64M x 72	W364M72V-XSBX	100-133	3.3	219 PBGA	32mm x 25mm	C, I, M

Registered SDRAM MCPs

Size	Organization	Part Number	Speed (MHz)	Voltage (V)	Package	Dimensions	Temperature
128MB	16M x 64	WEDPN16M64VR-XB2X	100-133	3.3	219 PBGA	25mm x 25mm	C, I, M
128MB	16M x 72	WEDPN16M72VR-XB2X	100-133	3.3	219 PBGA	25mm x 25mm	C, I, M

TI OMAP, Sitara, Da Vinci ELP Memory

Size	Part Number	NAND Density	NAND Width	LPDDR Density	LPDDR Width	Voltage (V)	Package	Dimensions	Temperature
4Gb/2Gb	MS29C4G48MAZAKC1-XX	4Gb	x16	2Gb	x32	1.8	152 PBGA	14mm x 14mm	C, I
2Gb/1Gb	MS29C2G24MAKLA1-XX	2Gb	x16	1Gb	x32	1.8	152 PBGA	14mm x 14mm	C, I
2Gb	MS46H64M32LP1-XX	—	—	2Gb	x32	1.8	152 PBGA	14mm x 14mm	C, I

Ceramics

SRAM • Flash • EEPROM • Mixed Memory MCPs • Hermetic • Mil-PRF • QML

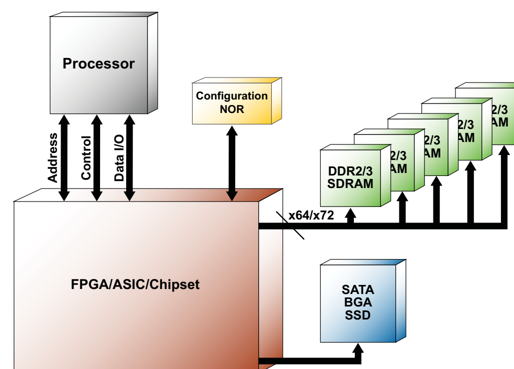
- Multiple organizations of flash, SRAM and EE in various hermetic sealed ceramic packages including 32 CSOJ, 32 CerDIP, 56 CSOP, 68 CQFP, 66 PGA, CBGA. These are standard hermetic products available as Class H or K compliant.
- Microsemi ceramic products are available in industrial, military temperatures and as SMD-5962 qualified components.

Applications Engineering Performance, Layout & Design Benefits to Customer

- This technology reduces PWB real estate, I/O requirements and memory down rounting, by typically 20% to 70%. This frees up real-estate for additional product features and can capture more sales opportunities for the board designer.
- Reduction of memory-down routing can save 2-4 PWB layers
- Improves parasitic performance (L, Z, C) at first and second level. Use of MCP provides reduced bus capacitance and better signal integrity on the PCB.
- Reduced memory-down routing can cut design time by up to ~4 weeks, and save the associated opportunity cost.
- Reduced I/O and routing allows wider pitch on BGA leads and hence easier class 3 PWB rule compliance since 0.5mm - 0.65mm pitch memory parts are not placed on the board.
- BOM maintenance costs are reduced since the MCP interface is consistent despite part obsolescence issues which are managed by the Microsemi.

SiP Capabilities and Typical Applications

- DMEA trusted on shore facility for design, assembly and test.
- ITAR conformance
- Plastic encapsulation or hermetic sealing; laminate or ceramic based packages. QFP, BGA or customer specified packages.
- Complete turnkey assembly; wire bond, flip chip attach, and specialized die processing including redistribution, wafer dicing and die stacking techniques.
- Spice (HSpice), ELDO, EBD and IBIS modeling.
- Environmental and electrical testing: 100% military, industrial or customer defined temperature ranges.
- Microsemi's high reliability products are manufactured and tested in accordance with MIL-PRF-38534 (Class H and K) and MIL-PRF-38535 (Class Q) Certified.
- Anti-tamper
- Circuit card assembly



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