

NAND FLASH – SSD

TRRUST-Stor™ 2.5 in. SATA Secure Storage Device

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
64GB	SATA	MSD064AM2R-000I*	66/51 MB/s***	5.0	2.5"	100.45 MAX × 69.85 × 9.5 mm	I
128GB	SATA	MSD128AS0R-000I	174/162 MB/s***	5.0	2.5"	100.45 MAX × 69.85 × 9.5 mm	I
256GB	SATA	MSD256AM2R-000I	161/200 MB/s***	5.0	2.5"	100.45 MAX × 69.85 × 9.5 mm	I
512GB	SATA	MSD512AM2R-000I	161/200 MB/s***	5.0	2.5"	100.45 MAX × 69.85 × 9.5 mm	I
1TB	SATA	MSD01TAM2R-000I	200/200 MB/s***	5.0	2.5"	100.45 MAX × 69.85 × 9.5 mm	I

NAND SSD BGA

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
64GB	SATA	MSM064AM2L-M00I	66/51 MB/s***	3.3-5.0	524 PBGA	32mm x 28mm x 6mm	I
128GB	SATA	MSM128AM2L-M00I*	66/51 MB/s***	3.3-5.0	524 PBGA	32mm x 28mm x 6mm	I

mSATA SSD

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
64GB	SATA	MM3064AM2R-M00I	66/51 MB/s***	3.3-5.0	mSATA	30mm x 50mm	I
128GB	SATA	MM3128AM2R-M00I*	66/51 MB/s***	3.3-5.0	mSATA	30mm x 50mm	I

XMC SSD

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
256GB	SATA	MXMCM256A2L-001I	175/200 MB/s**	5.0	XMC	143.75mm x 74mm	I
512GB	SATA	MXMCM512A2L-001I	175/200 MB/s**	5.0	XMC	143.75mm x 74mm	I

Extended Temperature Plastics – Memories

DDR4 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
2GB	512M x 32	4N512M32T-XBX*	1333-2400****	1.2	143 PBGA	8mm x 14mm	C, I, M
4GB	512M x 64	4N512M64T-XBX*	1333-2400****	1.2	321 PBGA	13mm x 20mm	C, I, M
4GB	512M x 72	4N512M72T-XBX*	1333-2400****	1.2	321 PBGA	13mm x 20mm	C, I, M
8GB	512M x 64	4N1G64T-XBX*	1333-2400****	1.2	321 PBGA	13mm x 20mm	C, I, M
8GB	512M x 72	4N1G72T-XBX*	1333-2400****	1.2	321 PBGA	13mm x 20mm	C, I, M

DDR3 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
1GB	128M x 64	W3J128M64X-XPBX	800-1333	K=1.35, G=1.5	375 PBGA	21.5mm x 20.5mm	C, I,
1GB	128M x 72	W3J128M72X-XPBX	800-1333	K=1.35, G=1.5	375 PBGA	21.5mm x 20.5mm	C, I, M
1GB	128M x 64	W3J128M64X-XLBX	800-1600	K=1.35, G=1.5	375 PBGA	21.5mm x 20.5mm	C, I, M
1GB	128M x 72	W3J128M72X-XLBX	800-1600	K=1.35, G=1.5	375 PBGA	21.5mm x 20.5mm	C, I, M
2GB	512M x 32	W3J512M32X-XBX	800-1333	K=1.35, G=1.5	136 PBGA	10mm x 14.5mm	C, I, M
2GB	512M x 32	W3J512M32X-XB2X	800-1333	K=1.35, G=1.5	204 PBGA	10mm x 14.5mm	C, I, M
4GB	512M x 64	W3J512M64X-XPBX	800-1333	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB	512M x 72	W3J512M72X-XPBX	800-1333	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB	512M x 64	W3J512M64X-XLBX	800-1600	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB	512M x 72	W3J512M72X-XLBX	800-1600	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB HD	512M x 64	W3J512M64X-XHDX**	800-1600	K=1.35, G=1.5	399 PBGA	14mm x 21.5mm	C, I, M
4GB HD	512M x 72	W3J512M72X-XHDX**	800-1600	K=1.35, G=1.5	399 PBGA	14mm x 21.5mm	C, I, M
8GB	8GB x 64	W3J1G64X-XPBX**	800-1600	K=1.35, G=1.5	543 PBGA	24.5mm x 32mm	C, I, M
8GB	8GB x 72	W3J1G72X-XPBX**	800-1600	K=1.35, G=1.5	543 PBGA	24.5mm x 32mm	C, I, M

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*	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
256MB	32M x 64	W3E32M64S-XB2X	200-333	2.5	219 PBGA	21mm x 21mm	C, I, M
256MB	32M x 64	W3E32M64SA-XB2X	200-333	2.5	219 PBGA	21mm x 21mm	C, I, M
256MB	32M x 64	W3E32M64S-XB3X	200-333	2.5	208 PBGA	13mm x 22mm	C, I, M
256MB	32M x 72	W3E32M72S-XB2X	200-333	2.5	219 PBGA	21mm x 21mm	C, I, M
256MB	32M x 72	W3E32M72S-XB3X	200-333	2.5	208 PBGA	16mm x 22mm	C, I, M
512MB	64M x 72	W3E64M72S-XBX	200-266	2.5	219 PBGA	32mm x 25mm	C, I, M

* 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.

*** Performance values based on 128KiB sequential transfers.

**** Proposed data rate.

Extended Temperature Plastics — Memories (continued)

Registered DDR SDRAM MCPs

Size	Organization	Part Number	Speed (MHz)	Voltage (V)	Package	Dimensions	Temperature
256MB	32M x 72	W3E32M72SR-XBX	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
16MB	2M x 64	W72M64VB-XBX	90-150	3.3	159 PBGA	13mm x 22mm	C, I, M
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	W764M32V1-XBX	100, 120	3.3	107 PBGA	14mm x 17mm	C, I, M
512MB	2 x 64M x 32	W7264M32V1-XSBX	110, 120	3.3	107 PBGA	14mm x 17mm	C, I, M
1GB	4 x 64M x 32	W7464M32V1-XSBX	110, 120	3.3	107 PBGA	14mm x 17mm	C, I, M

SDRAM MCPs

Size	Organization	Part Number	Speed (MHz)	Voltage (V)	Package	Dimensions	Temperature
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

Registered SDRAM MCPs

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

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.
- Mercury Systems 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 routing, 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 Mercury Systems.

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.
- Mercury Systems'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

