Microelectronic Products Quick Reference Guide

mercury systems™

NAND FLASH — SSD

TRRUST-Stor® 2.5 in. SATA Secure Storage Device

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
128GB	SATA	MXX128AS0R-XXXI	174/162 MB/s ***	5.0	2.5"	100.45 MAX x 69.85 x 9.5 mm	I
256GB	SATA	MXX256AM2R-XXXI	161/200 MB/s ***	5.0	2.5"	100.45 MAX x 69.85 x 9.5 mm	I
512GB	SATA	MXX512AM2R-XXXI	161/200 MB/s ***	5.0	2.5"	100.45 MAX x 69.85 x 9.5 mm	I
1TB	SATA	MXX01TAM2R-XXXI	200/200 MB/s ***	5.0	2.5"	100.45 MAX x 69.85 x 9.5 mm	I

NAND SSD BGA

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
64GB	SATA	MSM064AM2L-MXXI	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-MXXI	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	MXMCM256A2X-XXXI	175/200 MB/s **	5.0	XMC	143.75mm x 74mm	I
512GB	SATA	MXMCM512A2X-XXXI	175/200 MB/s **	5.0	XMC	143.75mm x 74mm	I

ASURRE-Stor™ 2.5in. SATA (FIPS/CSfC) Secure Storage Devices

Size	Interface	Part Number	Read/Write Speed	Voltage (V)	Package	Dimensions	Temperature
256GB	SATA	AXX256AM2R-XXXIX *	161/200 MB/s ***	5.0	2.5"	100.45 MAX x 69.85 x 9.5 mm	I
512GB	SATA	AXX512AM2R-XXXIX *	161/200 MB/s ***	5.0	2.5"	100.45 MAX x 69.85 x 9.5 mm	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, M
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(T)-XB3X	800-1333	K=1.35, G=1.5	204 PBGA	10mm x 14.5mm	C, I, M
4GB	512M x 64	W3J512M64X-XPB2X	800-1600	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB	512M x 72	W3J512M72X-XPB2X	800-1600	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB	512M x 64	W3J512M64X-XLB2X	800-1600	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB	512M x 72	W3J512M72X-XLB2X	800-1600	K=1.35, G=1.5	543 PBGA	23mm x 32mm	C, I, M
4GB HD	512M x 64	W3J512M64X(T)-XHDX **	800-1600	K=1.35, G=1.5	399 PBGA	14mm x 21.5mm	C, I, M
4GB HD	512M x 72	W3J512M72X(T)-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-XB2X	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	2 x 64M x 16	W3H264M16E-XB2X	400-667	1.8	79 PBGA	11mm x 14mm	C, I, M
256MB	32M x 64	W3H32M64E-XBX	400-667	1.8	208 PBGA	16mm x 20mm	C, I, M
256MB	32M x 72	W3H32M72E-XBX	400-667	1.8	208 PBGA	16mm x 20mm	C, I, M
512MB	64M x 64	W3H64M64E-XBX	400-667	1.8	208 PBGA	16mm x 22mm	C, I, M
512MB	64M x 72	W3H64M72E-XBX	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 72	W3H128M72E-XNBX	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 x 2.88mm	C, I, M
128MB	64M x 16	W3E64M16S-XBX	200-333	2.5	60 PBGA	10mm x 12.5mm x 1.91mm	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 x 2.26mm	C, I, M
256MB	32M x 72	W3E32M72SR-XBX	200-266	2.5	208 PBGA	16mm x 25mm x 2.27mm	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.*

Mercury Systems reserves the right to change products or specifications without notice.

© 2018 Mercury Systems. All rights reserved.

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
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	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

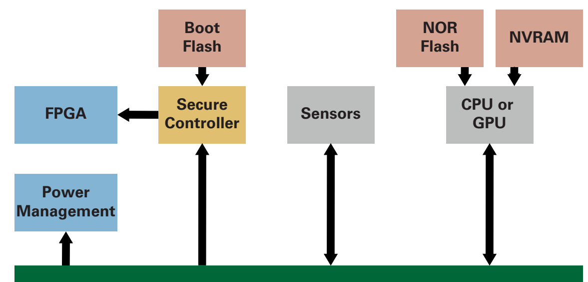
- Multiple organizations of flash, SRAM and EE in various hermetic sealed ceramic packages including 32 CSOJ, 32 CerDIP, 56 CSOP, 68 CQFP, 66 PGA, CBGA. These are standard hermetic products available as Class H or K compliant.
- Mercury Systems ceramic products are available in industrial, military temperatures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

BuiltSECURE™ SiP

- SWaP-Optimized: Advanced miniaturization and stacking technology minimizes footprint
- Agile customization: Optimize processing and security architectures for individual programs
- Advanced thermal management: Dissipate more than 100W of power to meet the processing demands of modern processors and FPGA devices.
- Embedded Security: Integrated secure boot capability and optional personalized security solutions to detect and mitigate adversarial attacks.
- Trusted design and manufacturing: Designed and manufactured in a DMEA-accredited facility protected by a vigilant cybersecurity program.



Example of a BuiltSECURE block diagram

mercury systems

Mercury Systems reserves the right to change products or specifications without notice.
© 2018 Mercury Systems. All rights reserved.