

# Microelectronics Catalog Quick Reference Guide

## Extended Temperature Plastics – Memories

### DDR3 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
1GB	256M x 32	W3J256M32G-XNBX <sup>(f)</sup>	800-1066	1.5	PBGA	TBD	C, I, M
1GB	128M x 64	W3J128M64G-XNBX <sup>(f)</sup>	800-1066	1.5	PBGA	TBD	C, I, M
1GB	128M x 72	W3J128M72G-XNBX <sup>(f)</sup>	800-1066	1.5	PBGA	TBD	C, I, M
1GB	2 x 256M x 16	W3J2256M16G-XNBX <sup>(f)</sup>	800-1066	1.5	PBGA	TBD	C, I, M

### DDR2 SDRAM MCPs

Size	Organization	Part Number	Data Rate (Mb/s)	Voltage (V)	Package	Dimensions	Temperature
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 <sup>(f)</sup>	400-667	1.8	255 PBGA	22mm x 26mm	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

### 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

### NOR Flash MCPs

Size	Organization	Part Number	Speed (ns)	Voltage (V)	Package	Dimensions	Temperature
<b>Conventional</b>							
16MB	2M x 64	W72M64V-XBX	90-150	3.3	159 PBGA	13mm x 22mm	C, I, M
<b>Page Mode</b>							
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

(f) 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.



WHITE ELECTRONIC DESIGNS

Defense Electronics

Corporate Headquarters

3601 E. University Drive ■ Phoenix, AZ 85034

Tel: 602.437.1520 ■ Fax: 602.437.9120

## Extended Temperature Plastics – Memories (continued)

### 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 17mm	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

## Embedded Flash – SLC NAND

### SLC NAND SSD BGA

Size	Interface	Part Number	Max Speed (Read/Write)	Voltage (V)	Package	Dimensions	Temperature
1GB	PATA	W7N512M16VHxxBI	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I
2GB	PATA	W7N1G16VHxxBI	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I
4GB	PATA	W7N2G16VHxxBI	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I
8GB	PATA	W7N4G16VHxxBI <sup>f</sup>	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I
16GB	PATA	W7N8G16VHxxBI <sup>f</sup>	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I

### Secure SLC NAND SSD BGA

Size	Interface	Part Number	Max Speed (Read/Write)	Voltage (V)	Package	Dimensions	Temperature
4GB	PATA	W7N2G16VHxxBIS <sup>f</sup>	45MB/s / 30MB/s	3.3	224 PBGA	27mm x 22mm	C, I

<sup>f</sup> 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.

## 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.
- WEDC ceramic products are available in industrial, military temperatures and as SMD-5962 qualified component

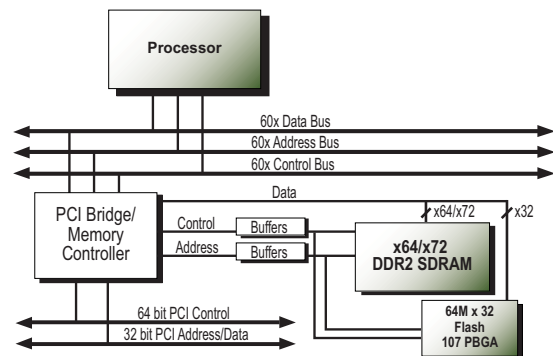
## DDR2 SDRAM PBGAs – Typical Application

128M x 64 DDR2 SDRAM  
 208 PBGA, 1.8V  
 16mm x 22mm  
 W3H128M64E-XSBX  
 C, I, M

128M x 72 DDR2 SDRAM  
 208 PBGA, 1.8V  
 16mm x 22mm  
 W3H128M72E-XSBX  
 C, I, M

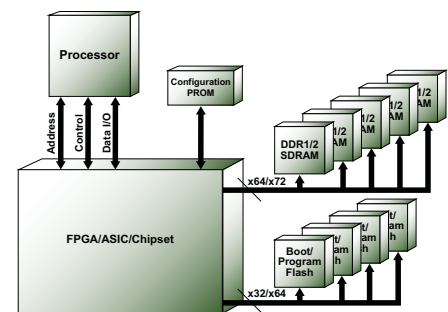
56%  
Space  
Savings

50%  
I/O  
Savings



## SiP Capabilities and Typical Applications

- 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.
- White Electronic Designs' 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 integration



White Electronic Designs (NASDAQ: WEDC) delivers sophisticated multi-chip semiconductor packages, high-efficiency memory devices and build-to-print electromechanical assemblies for defense and aerospace applications. The ability to address the unique size, performance and quality requirements for technology creators in the defense market has established White Electronic Designs as the industry's customer-focused solutions provider. Capabilities include: turn-key design through production; manufacturing and obsolescence management for advanced embedded solutions; test qualification; miniaturization of existing designs; combining RF and digital onto one board; die stacking and information assurance technologies. Headquartered in Phoenix, Arizona, White Electronic Designs operates world-class development and production centers in Arizona and Indiana.



WHITE ELECTRONIC DESIGNS

**Defense Electronics**  
**Corporate Headquarters**

3601 E. University Drive ■ Phoenix, AZ 85034  
 Tel: 602.437.1520 ■ Fax: 602.437.9120