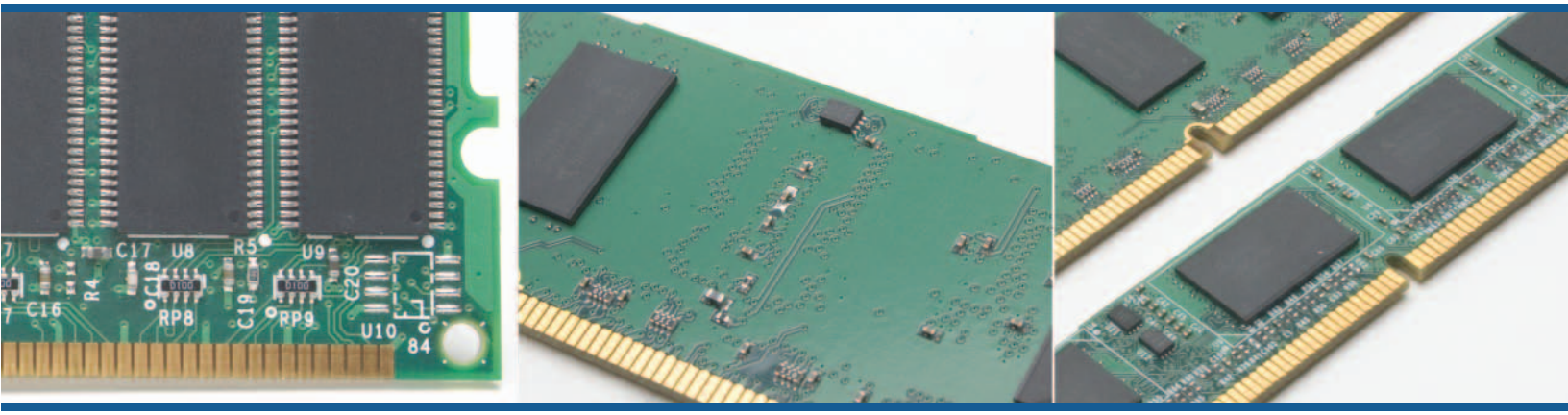


MemoryOverview

Industrial Grade DRAM Solutions

DDR3
DDR2
DDR
SDRAM

DDR3
DDR2
DDR
SDRAM

DDR3

DDR3 continues the evolution of the DDR and DDR2 technologies to provide continued improvements in performance. The DDR3 technology is just being introduced and is expected to be cost competitive with the DDR2 technology in late 2009. However, it does offer increased transfer rates of PC3-6400 (2.5 ns clock), PC3-8500 (1.875 ns clock), PC3-10600 (1.5 ns. Clock), and PC3-12800 (1.25 ns clock). Thus, this technology can be a great new outlook for system designs that are performance driven. DDR3 also saves power by lowering the power supply voltage to 1.5 volts. Future low voltage versions of DDR3 will be available with even lower power supply voltages of 1.35 and 1.2 volts.

DDR2

DDR2 is an evolutionary enhancement over DDR. This technology is currently the largest selling technology today and currently offers the best cost per bit. Most new system designs today would likely choose to use DDR2. It takes advantage of the DDR improvements to transfer data on both edges of the clock. In addition, it further improves the speeds to provide standard transfer rates of PC2-3200 (5.0 ns clock), PC2-4200 (3.75 ns clock), PC2-5300 (3.0 ns clock), and PC2-6400 (2.5 ns clock). DDR2 chips save further power over the previous technologies because these chips use a standard voltage of 1.8 volts.

DDR

Double Data Rate (DDR) is an advancement over SDRAM technology that increases memory bandwidth and performance while maintaining competitive pricing. DDR is the evolutionary technology that succeeded the previous standard Synchronous DRAM technology, which is now called SDR (Single Data Rate). DDR achieves its performance by transferring data on both the rising edge and the falling edge of the clock. Standard speeds for DDR include PC-2100 (7.5 ns clock), PC-2700 (6.0 ns clock), and PC-3200 (5.0 ns clock). Chips with DDR technology also save power because they run at 2.5 or 2.6 volts rather than the higher voltages used by the earlier technologies.

SDRAM

SDRAM (Synchronous DRAM) is the common term to classify PC66 (1997), PC100 (1998) and PC133 SDRAM (1999/2000). The SDRAM chip is divided into two cell blocks, and data is interleaved between the two so that while a bit in one block is being accessed, the bit in the other is being prepared for access. This allows SDRAM to burst the second and subsequent, data bits at a rate of 10ns, compared to 60ns for the first character. SDRAM chips use a power supply voltage of 3.3 volts.

SPECIFICATION	DDR3	DDR2	DDR	SDRAM
SoDIMM	•	•	•	•
UDIMM	•	•	•	•
RDIMM	•	•	•	•
VLP RDIMM	•	•	•	
FB-DIMM		•		
mini-DIMM	Future	•		
VLP mini-DIMM	Future	•		
CAPACITIES	512MB - 16GB	256MB - 8GB	128MB - 4GB	64MB - 2GB
SPEEDS	PC3 12800/DDR3-1600	PC2 6400/DDR2-800	PC 3200 - DDR-400	PC 133
	PC3 10600/DDR3-1333	PC2 5300/DDR2-667	PC 2700 - DDR-333	PC 100
	PC3 8500/DDR3-1066	PC2 4200/DDR2-533	PC 2100 - DDR-266	
	PC3 6400/DDR3-800	PC2 3200/DDR2-400		
PINS	240 PIN	244 PIN	200 PIN	168 PIN
	204 PIN	240 PIN	184 PIN	144 PIN
		200 PIN		

Product Speed Key

Part #: SL72R4M128M8H-A(xxx)VU

xxx denotes speed as follows:

10D: PC100 (CL2)
75D: PC133 (CL2)
75A: PC133 (CL3)

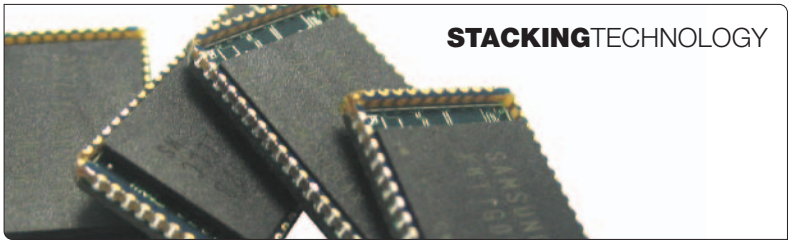
SDRAM: RoHS Compliant Modules (Partial listing of products)

Capacity	STEC Part # (Commercial Temp)	Configuration	Device Type	# Devices	Ranks
168-Pin Registered DIMM x72 ECC					
2GB	SL72R5M256M8H-A(xxx)VU	256Mx72	128Mx4 Stacked	36	2
1GB	SL72R4M128M8H-A(xxx)VU	128Mx72	128Mx4	18	1
512MB	SL72R8F64M8H-A(xxx)VU	64Mx72	32Mx8	9	2
256MB	SL72R8F32M8H-B(xxx)VU	64Mx72	32Mx8	9	2
168-Pin Unbuffered DIMM x72 ECC					
1GB	SL72U8M128M8H-C(xxx)VU	128Mx72	64Mx8	18	2
512MB	SL72U8F64M8H-C(xxx)VU	64Mx72	32Mx8	18	2
256MB	SL72U8F32M8H-C(xxx)VU	32Mx72	32Mx8	9	1
128MB	SL72U8E16M4H-C(xxx)VU	16Mx72	16Mx8	9	1
168-Pin Unbuffered DIMM x64 Non-ECC					
1GB	SL64U8M128M8G-C(xxx)VU	128Mx64	64Mx8	16	2
512MB	SL64U8F64M8G-C(xxx)VU	64Mx64	32Mx8	16	2
256MB	SL64U8F32M8G-B(xxx)VU	32Mx64	32Mx8	8	1
128MB	SL64U6F16M8G-B(xxx)VU	16Mx64	16Mx16	4	1
64MB	SL64U6E8M4G-B(xxx)VU	8Mx64	8Mx16	4	1
144-Pin Unbuffered SODIMM x64 Non-ECC					
1GB	SL64G7M128M8G-B(xxx)VU	128Mx64	64Mx8 Stacked	16	2
512MB	SL64G8M64M8G-B(xxx)VU	64Mx64	64Mx8	8	1
256MB	SL64G8F32M8G-B(xxx)VU	32Mx64	32Mx8	8	1
128MB	SL64G6F16M8G-B(xxx)VU	16Mx64	16Mx16	4	1
64MB	SL64G6E8M4G-B(xxx)VU	8Mx64	8Mx16	4	1
144-Pin Unbuffered SODIMM x72 ECC					
1GB	SL72G7M128M8H-A(xxx)VU	128Mx72	64Mx8 Stacked	18	2
512MB	SL72G8M64M8H-A(xxx)VU	64Mx72	64Mx8	9	1
256MB	SL72G8F32M8H-A(xxx)VU	32Mx72	32Mx8	9	1
128MB	SL72G8E16M4H-A(xxx)VU	16Mx72	16Mx8	9	1
144-Pin Unbuffered SODIMM x32 Non-ECC					
256MB	SL32G8M64M8G-A(xxx)VU	64Mx32	64Mx8	4	1
128MB	SL32G8F32M8G-A(xxx)VU	32Mx32	32Mx8	4	1

The panel shows a listing of the more common SDRAM modules available from STEC. STEC has hundreds of different SDRAM modules available. So if you cannot find the specific configuration you require, please contact your STEC sales representative to see if we have it available from our complete library of designs.

Note: Industrial temperature parts are also available.
These parts have a suffix "VWU". **For example** : SL72R4M128M8H-A05AVWU.

OEMSOLUTIONS



STEC's latest innovation is our revolutionary "Postage Stamp BGA stacking". This technology builds upon our long experience in TSOP stacking to create a low-cost, highly reliable, high performance, thermally enhanced solution for high density modules. Because of the unique construction, heat can be conducted into the DIMM's ground plane turning the whole DIMM board into a heat spreader.

Using our stacking technology we can provide double density modules in the same form factor as non-stacked modules. It also enables STEC to utilize the most cost effective chip density (256Mb, 512Mb, or 1Gb) to achieve a particular module capacity.

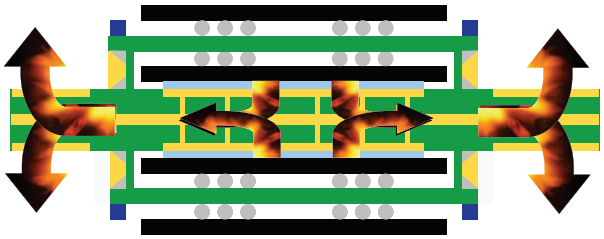
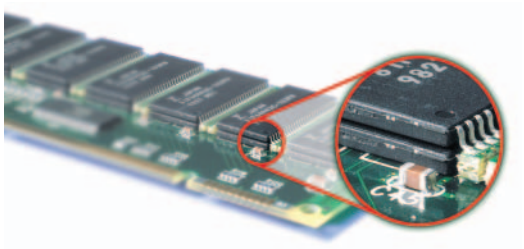


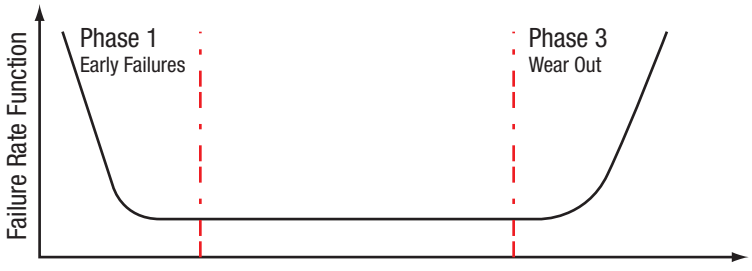
Diagram of a 2-high BGA chip stack used on DDR2 modules mounted on both sides of the DIMM board



Picture of TSOP Stack used on SDRAM and DDR modules.

TDBI Technology

STEC has a proprietary test technology called TDBI (Test During Burn-In) that can weed out weak cell failures by stressing the DRAM Modules at an extended temperature and voltage. This optional test process can significantly improve field reliability by reducing the early failure rate that normally occur in DRAM components.



Product Speed Key

Part #: SL72E4M256M8M-A(xxx)WU

xxx denotes speed as follows:

75D: PC-2100 (CL2)
75E: PC-2100 (CL2.5)
06E: PC-2700 (CL2.5)
05A: PC-3200 (CL3)

DDR: RoHS Compliant Modules (Partial listing of products)

Capacity	STEC Part # (Commercial Temp)	Configuration	Device Type	# Devices	Ranks
184-Pin Registered DIMM x72 ECC					
4GB	SL72E5W512M8M-A(xxx)WU	512Mx72	256Mx4 Stacked	36	2
2GB	SL72E4M256M8M-A(xxx)WU	256Mx72	128Mx4	36	2
1GB	SL72E4M128M8M-D(xxx)WU	128Mx72	128Mx4	18	1
512MB	SL72E8M64M8M-B(xxx)WU	64Mx72	64Mx8	9	1
184-Pin Registered DIMM x72 ECC Very Low Profile (18.3mm high)					
2GB	SL72E5M256M8M-E(xxx)WU	256Mx72	128Mx4 Stacked	36	2
1GB	SL72E4M128M8M-E(xxx)WU	128Mx72	128Mx4	18	1
184-Pin Unbuffered DIMM x72 ECC					
2GB	SL72C9M256M8M-A(xxx)WU	256Mx72	128Mx4 Stacked	36	2
1GB	SL72C8M128M8M-B(xxx)WU	128Mx72	64Mx8	18	2
512MB	SL72C8M64M8M-C(xxx)WU	64Mx72	64Mx8	9	1
256MB	SL72C8F32M8M-B(xxx)WU	32Mx72	32Mx8	9	1
184-Pin Unbuffered DIMM x64 Non-ECC					
2GB	SL64C9M256M8L-A(xxx)WU	256Mx64	128Mx4 Stacked	32	2
1GB	SL64C8M128M8L-B(xxx)WU	128Mx64	64Mx8	16	2
512MB	SL64C8F64M8L-B(xxx)WU	64Mx64	32Mx8	16	2
256MB	SL64C8F32M8L-B(xxx)WU	32Mx64	32Mx8	8	1
128MB	SL64C6F16M8L-A(xxx)WU	16Mx64	16Mx16	4	1
200-Pin Unbuffered SODIMM x64 Non-ECC					
2GB	SL64A7W256M8L-A(xxx)WU	256Mx64	128Mx8 Stacked	16	2
1GB	SL64A8M128M8L-A(xxx)WU	128Mx64	64Mx8	16	2
512MB	SL64A8M64M8L-A(xxx)WU	64Mx64	64Mx8	8	1
256MB	SL64A8F32M8L-A(xxx)WU	32Mx64	32Mx8	8	1
128MB	SL64A6F16M8L-A(xxx)WU	16Mx64	16Mx16	4	1
200-Pin Unbuffered SODIMM x72 ECC					
1GB	SL72A7M128M8M-C(xxx)WU	128Mx72	64Mx8 Stacked	18	2
512MB	SL72A8M64M8M-C(xxx)WU	64Mx72	64Mx8	9	1
256MB	SL72A8F32M8M-C(xxx)WU	32Mx72	32Mx8	9	1

The table shows a listing of the more common DDR modules available from STEC. STEC has hundreds of different DDR modules available. So if you cannot find the specific configuration you require, please contact your STEC sales representative to see if we have it available from our complete library of designs.

Note: Industrial temperature parts are also available.
These parts have a suffix "WWU". **For example** : SL72E4M256M8M-A05AWWU.

Product Speed Key

Part #: SL72P4M256M8M-A(xxx)YU

xxx denotes speed as follows:

05A: PC2-3200 (CL3) 03G: PC2-5300 (CL5) 25H: (CL6) PC2-6400

37F: PC2-4200 (CL4) 25G: PC2-6400 (CL5)

DDR2: RoHS Compliant Modules (Partial listing of products)

Capacity	STEC Part # (Commercial Temp)	Configuration	Device Type	# Devices	Ranks
240-Pin Registered DIMM x72 ECC					
8GB	SL72P5W01G8M-A(xxx)YU	1Gx72	256Mx4 Stacked	72	4
8GB	SL72P4Y01G8M-A(xxx)YU	1Gx72	512Mx4 Stacked	36	2
4GB	SL72P4W512M8M-A(xxx)YU	512Mx72	256Mx4	36	2
2GB	SL72P4M256M8M-A(xxx)YU	256Mx72	128Mx4	36	2
1GB	SL72P4M128M8M-A(xxx)YU	128Mx72	128Mx4	18	1
512MB	SL72P8M64M8M-A(xxx)YU	64Mx72	64Mx8	9	1
240-Pin Registered DIMM x72 ECC Very Low Profile (18.3mm high)					
4GB	SL72P5W512M8M-B(xxx)YU	512Mx72	256Mx4 Stacked	36	2
2GB	SL72P4W256M8M-B(xxx)YU	256Mx72	256Mx4	18	1
1GB	SL72P4M128M8M-B(xxx)YU	128Mx72	128Mx4	18	1
240-Pin Unbuffered DIMM x72 ECC					
2GB	SL72Q8W256M8M-A(xxx)YU	256Mx72	128Mx8	18	2
1GB	SL72Q8M128M8M-A(xxx)YU	128Mx72	64Mx8	18	2
512MB	SL72Q8M64M8M-A(xxx)YU	64Mx72	64Mx8	9	1
256MB	SL72Q6M32M8M-A(xxx)YU	32Mx72	32Mx16	5	1
240-Pin Unbuffered DIMM x64 Non-ECC					
2GB	SL64Q8W256M8L-A(xxx)YU	256Mx64	128Mx8	16	2
1GB	SL64Q8M128M8L-A(xxx)YU	128x64	64Mx8	16	2
512MB	SL64Q8M64M8L-A(xxx)YU	64Mx64	64Mx8	8	1
256MB	SL64Q6M32M8L-A(xxx)YU	32Mx64	32Mx16	4	1
200-Pin Unbuffered SODIMM x64 Non-ECC					
2GB	SL64H8W256M8L-A(xxx)YU	256Mx64	128Mx8	16	2
1GB	SL64H8M128M8L-A(xxx)YU	128Mx64	64Mx8	16	2
512MB	SL64H8M64M8L-A(xxx)YU	64Mx64	64Mx8	8	1
256MB	SL64H6M32M8L-A(xxx)YU	32Mx64	32Mx16	4	1
200-Pin Registered SODIMM x72 ECC					
2GB	SL72N8W256M8M-A(xxx)YU	256Mx72	128Mx8	18	2
1GB	SL72N8M128M8M-A(xxx)YU	128Mx72	64Mx8	18	2
512MB	SL72N8M64M8M-A(xxx)YU	64Mx72	64Mx8	9	1
244-Pin Registered Mini-DIMM x72 ECC					
4GB	SL72T7W512M8M-A(xxx)YU	512Mx72	128Mx8 Stacked	36	4
2GB	SL72T8W256M8M-A(xxx)YU	256Mx72	128Mx8	18	2
1GB	SL72T8M128M8M-A(xxx)YU	128Mx72	64Mx8	18	2
512MB	SL72T8M64M8M-A(xxx)YU	64Mx72	64Mx8	9	1
244-Pin Registered Mini-DIMM x72 ECC Very Low Profile					
2GB	SL72T7W256M8M-B(xxx)YU	256Mx72	128Mx8 Stacked	18	2
1GB	SL72T8W128M8M-B(xxx)YU	128Mx72	128Mx8	9	1
512MB	SL72T8M64M8M-B(xxx)YU	64Mx72	64Mx8	9	1
240-Pin Fully Buffered FB-DIMM x72 ECC					
4GB	SL72W4W512M8M-A(xxx)ZU	512Mx72	256Mx4	36	2
2GB	SL72W4M256M8M-A(xxx)ZU	256Mx72	128Mx4	36	2
1GB	SL72W8M128M8M-A(xxx)ZU	128Mx72	64Mx8	18	2
512MB	SL72W8M64M8M-A(xxx)ZU	64Mx72	64Mx8	9	1

The sheet shows a listing of the more common DDR2 modules available from STEC. STEC has hundreds of different DDR2 modules available. So if you cannot find the specific configuration you require, please contact your STEC sales representative to see if we have it available from our complete library of designs. **Note:** Industrial temperature parts are also available on all form factors except for the FB-DIMM. These parts have a suffix "YWU". **For example** : SL72P4M256M8M-A37FYWU.

Product Speed Key

Part #: SL72Z4W256M8M-A(xxx)TU

xxx denotes speed as follows:

25G: PC3-6400 (CL5)	18K: PC3-8500 (CL8)	12L: PC3-12800 (CL9)
25H: PC3-6400 (CL6)	15K: PC3-10600 (CL8)	14M:PC3-12800 (CL10)
18J: PC3-8500 (CL7)	15L: PC3-10600 (CL9)	

DDR3: RoHS Compliant Modules (Partial listing of products)

Capacity	STEC Part # (Commercial Temp)	Configuration	Device Type	# Devices	Ranks
240-Pin Registered DIMM x72 ECC					
4GB	SL72Z8W512M8M-A(xxx)TU	512Mx72	128Mx4	36	4
4GB	SL72Z4W512M8M-A(xxx)TU	512Mx72	256Mx4	36	2
2GB	SL72Z4W256M8M-A(xxx)TU	256Mx72	256Mx4	18	1
1GB	SL72Z8W128M8M-A(xxx)TU	128Mx72	128Mx8	9	1
512MB	SL72Z8M64M8M-A(xxx)TU	64Mx72	64Mx8	9	1
240-Pin Registered VLP DIMM x72 ECC (18.75mm high)					
2GB	SL72Z8W256M8M-B(xxx)TU	256Mx72	256Mx8	18	2
1GB	SL72Z8W128M8M-B(xxx)TU	128Mx72	128Mx8	9	1
240-Pin Unbuffered DIMM x72 ECC					
2GB	SL72Y8W256M8M-A(xxx)TU	256Mx72	128Mx8	18	2
1GB	SL72Y8W128M8M-A(xxx)TU	128Mx72	128Mx8	9	1
240-Pin Unbuffered DIMM x64 Non-ECC					
2GB	SL64Y8W256M8L-A(xxx)TU	256Mx64	128Mx8	16	2
1GB	SL64Y8W128M8L-A(xxx)TU	128x64	128Mx8	8	1
512MB	SL64Y6W64M8L-A(xxx)TU	64Mx64	64Mx16	4	1
204-Pin Unbuffered SODIMM x64 Non-ECC					
2GB	SL64F8W256M8L-A(xxx)TU	256Mx64	128Mx8	16	2
1GB	SL64F6W128M8L-A(xxx)TU	128Mx64	64Mx16	8	2
512MB	SL64F6W64M8L-A(xxx)TU	64Mx64	64Mx16	4	1

The sheet shows a listing of the more common DDR3 modules available from STEC. STEC has other DDR3 modules available. So if you cannot find the specific configuration you require, please contact your STEC sales representative to see if we have it available from our complete library of designs.

why STEC

STEC is a world wide technology provider of OEM memory and solid state storage solutions that empower our partners to achieve the highest level of system performance. As a leader in OEM SSD/Flash and DRAM memory technology for over 18 years, STEC has developed a solid foundation of quality and value. We are proud to provide our customers with a comprehensive array of support, experience, and knowledge.

STEC's Value Proposition:

INNOVATION | RELIABILITY | QUALITY | SUPPORT | COMMITMENT | EXPERIENCE | KNOWLEDGE | TRUST

Breadth of Products

- Industry's widest range of SSD Products
- Extensive interface expertise and support on FC, SAS, SCSI, SPI, SATA, ATA, PCIexpress, CF, USB, SD Products
- Specialty form factors (VLP, mini-DIMM, So-RDIMM)
- Legacy products (EDO and FPM)
- Industrial temperature products

Sales Service and Support

- Faster answers to technical questions by our skilled FAEs
- Knowledgeable support and experience on industry standards
- Expert advice from industry-leading engineers to assist in system design decisions
- Sales offices worldwide and local support for all regions

Vendor Independence

- Better continuity of supply
- Unbiased information on different component manufacturers
- Better pricing flexibility

Associations

Member of:

- JEDEC
- SecureDigital Association (SDA)
- CompactFlash Association (CFA)
- MMC Association (MMCA)
- ONFI
- SCSI Trade Association
- Member of T10 and T13
- Microsoft Certified (MSFT)
- USB Implementer Forum
- PCMCIA.org
- SATA-IO
- IDEMA
- SNIA
- TCG
- FCIA
- IEEE
- Designs Qualified by Intel Designated Test Laboratory (CMTL)

Test

- Proprietary test systems and processes designed to to ensure optimal product reliability
- TDBI (Test During Burn-In)
- Industrial Temperature Testing/Environmental Testing

In-House Manufacturing

- Faster time-to-market
- Dock-to-stock delivery
- Kanban ID system
- In-house controlled BOM

Responsiveness and Flexibility

- Fast turn-around for production orders
- Chip stacking performed in-house
- Global manufacturing facilities

Customization

- Special security features
- Labeling
- Testing
- Locked Bill of Materials
- Custom module designs
- Serialization

Quality

- ISO9001
- ISO14001

Compliance

- UL approved
- RoHS Compliant
- CE
- FCC
- BSMI
- TUV
- WEEE
- CTICK
- MIC
- CSA
- VCCI
- China RoHS

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