

TCS Space & Component Technology

BGADrive® - Solid State Drive



Features

- Available now in Parallel ATA (PATA) and Serial ATA (SATA) interface
- A complete SSD in a compact 31mm x 31mm Ball Grid Array package
- Available in 16GB, 32GB and 64GB
- JEDEC Standard 22 x 22 BGA with 1.27mm ball pitch
- Automatic power-down and sleep modes
- Industrial grade SLC NAND Flash
- High-reliability eutectic Sn-Pb BGA solder balls
- Independently tested to MIL-STD-810 for proven ruggedness
- No device driver development required (completely compatible with standard ATA drivers)

TCS Space & Component Technology, a leader in rugged Solid State Drives for Military, Aerospace and Industrial applications, now offers its BGADrive® in both Serial ATA and Parallel ATA interface versions. These ultra-compact SSDs, packaged in a 31mm x 31mm ball grid array, are perfect for applications such as UAVs, wearable computers and miniature embedded systems where size, weight and power are at a premium.

These drives are complete with an SSD controller based on a 32-bit RISC processor and 4 NAND flash memory devices. High performance is provided by concurrent access of multiple Flash channels and support for performance features such as Native Command Queuing.

The controller provides complete on-the-fly error correction and end-to-end error detection through the use of a Cyclic Redundancy Check (CRC) code to ensure that data is reliably stored and retrieved. Advanced wear-leveling maximizes the usable life of the media while data placement algorithms optimize the spread of cells addressed to reduce data errors due to program and read disturb effects.

Both SATA and PATA BGADrive SSDs support mobile and other low-power applications through sophisticated auto power-saving states and power-fail management. Designed and manufactured in the USA at AS9100-certified facilities, the TCS SSDs are the unquestioned reliability and ruggedness leaders among embedded SSD modules.

Applications

- Single-board computers in military settings
- Ruggedized computers / notebooks — mobile and system-based
- Data recorders for extreme environments
- Ultra-portable and hand-held devices
- Ruggedized PDAs, military logistics
- Security / surveillance networks / image processing
- Wearable computers
- UAVs, UUVs
- Defense / Aerospace
- Miniature network appliances
- Embedded / Industrial
- Medical instrumentation
- Transportation equipment
- Outdoor / Mobile applications for telecoms, IT systems, utilities

Contact
TCS Space & Component
Technology

USA Office
 19951 Mariner Avenue, Building 157
 Torrance, CA 90503 USA
 Tel: 866.264.0793
 Email: sctsales@telecomsys.com

European Office
 PO Box 686
 Fareham PO14 9 NR
 United Kingdom
 Tel: +44 (0) 75904 63366
 Email: sctsales@telecomsys.com

See TCS' complete line of
products and services
at www.telecomsys.com.

Your Established Partner

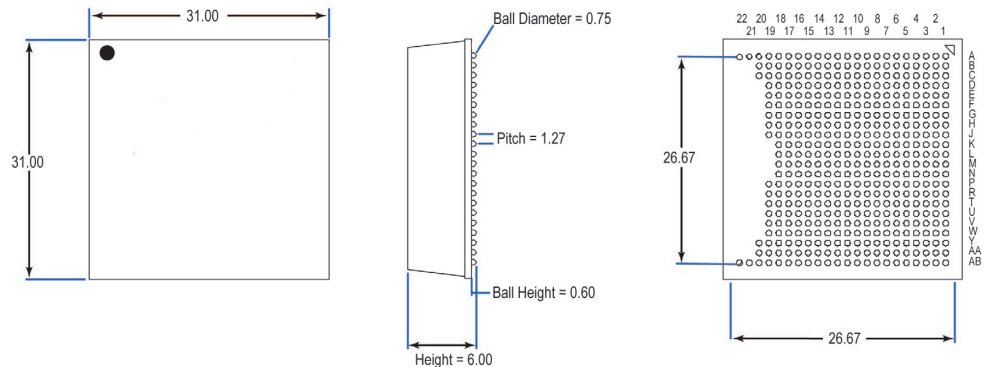
TCS brings proven, technology problem-solving expertise to its professional service offerings for the public sector. From continuity of operations and information assurance, to cyber security and integrated logistics support, TCS solves the toughest technical challenges, under conditions that demand the highest level of reliability, availability, and security. As an ISO 9000-certified provider with many consultants holding active security clearances, TCS has an established track record over the past decade as a trusted partner providing mission continuity for the Department of Defense, Special Operations and intelligence communities, the Department of Homeland Security, and the Department of State.

TeleCommunication Systems, Inc.
 275 West Street
 Annapolis, MD 21401 USA
 Toll Free: 1.888.728.8797
 Outside US: +1.410.263.7616
www.telecomsys.com

Enabling Convergent Technologies® is a registered trademark of TCS. All other trademarks are the property of their respective companies. Information subject to change without notice. | NasdaqGM: TSYS | 130110



Specifications	PATA	SATA
Performance		
Capacity	16GB, 32GB	16GB, 32GB, 64GB
Sustained Read (32GB)	Up to 42 MB/s	Up to 100 MB/s
Sustained Write (32GB)	Up to 36 MB/s	Up to 90 MB/s
Power		
Input Voltage	+5VDC ± 10%	
Read Max (32GB)	1.35 W	1.0 W
Write Max (32GB)	1.60 W	1.15 W
Standby Power (32GB)	0.005 W	
Reliability		
Bit Error Rate	Up to 4 Bytes per 512 Bytes	Up to 24 bits per 1024 Bytes
Error Detection / Correction	< 1 non-recoverable error in 10 ¹⁴ bits read	
Data Retention	> 10 years	
Endurance	> 100,000 writes	> 60,000 writes
Wear-Leveling	Proprietary algorithms	
Environment		
Operating Temperature	-40°C to +85°C	
Storage Temperature	-50°C to +95°C	
Moisture Sensitivity Level	MSL Level 3. See User's Manual for bake out requirements	
Temperature Cycle	JEDEC JESD22-A104 (-40°C to +85°C); 200 cycles minimum	
Temperature Humidity Bias (THB)	JEDEC JESD22-A101 (85°C / 85% RH) for 1,000 hours	
Altitude	80,000 feet	
Humidity	5% to 95% relative humidity, non-condensing	
Shock	1,500G at 0.5ms	
Vibration	16.0 Gms overall	
Mechanical		
Dimensions (mm)	JEDEC Standard BGA (31mm x 31mm with 22 x 22 ball array and pitch = 1.27mm)	



Product Information and Specifications subject to change without notice. DS-TSDXBGP-A