

TCS Space & Component Technology

Galatea™ SATA - Solid State Drive



Applications

- Military and Defense — Ground, Sea, and Air
- Ruggedized computers/notebooks — mobile and system-based
- Homeland Security/Surveillance/Mapping/Reconnaissance/Remote Sensing
- Aerospace avionics, cockpit instrumentation both commercial and defense
- Unmanned vehicles including UAVs, robotics and mine detection
- Radar/Guidance Systems and Telemetry/Tracking
- Vehicle Management/Information Systems
- Extreme operating environments including down-hole drilling and transportation
- Where your SSD absolutely, positively has to work!

TCS Space & Component Technology now offers the Galatea™ Solid State Drives (SSDs), defining the leading edge for performance and reliability in ultra-rugged mass storage. These drives fit up to 200GB into standard 2.5 inch, thin (9.5mm height) dimensions and deliver sustained read / write rates of over 270MB/s along with random read / write rates over 27,000 IOPS and sequential reads over 47,000 IOPS. Combining 128-bit AES encryption with high-speed full-drive erasure (200GB in less than 1s) raises data security to new levels.

Advanced error correction pushes the bit error rate a full two orders of magnitude beyond the industry standard, while exclusive write optimization and wear-leveling techniques reduce erase / program cycles and achieve a 20-fold increase in media life expectancy. The Galatea Standard SATA supports the SATA II, revision 2.6, interface standard at 1.5Gb/s and 3.0Gb/s.

Rigorously tested and independently verified to MIL-STD-810, the ultra-rugged SSD will survive the harshest environments with a conservatively calculated MTBF of 2.25 million hours. Industrial grade SLC NAND flash technology provides data retention of over 10 years and write endurance of over 20,000 Terabytes. Designed and manufactured in the USA at AS9100-certified facilities, Galatea SSDs set a new standard for high-performance, rugged SSDs.

Features

- Support for SATA 2.6 at 1.5 and 3.0 Gb/s
- Sustained read / write at up to 280 MB/s
- Random, short block read / write at over 27,000 IOPS
- Sequential reads at over 47,000 IOPS
- Built-in power-fail backup prevents data loss during unexpected power failures
- User data fully protected by 128-bit AES encryption
- Bit Error Rate of less than $1 \text{ in } 10^{16}$
- Industry-leading media life expectancy
- Fast data erasure initiated by jumper or software command
- Write Protect by software
- Ruggedized design; tested to MIL-STD-810
- Precision machined, anodized aluminum alloy case
- Enhanced reliability options include conformal coating, staking, and component encapsulation
- No device driver development required (completely compatible with standard SATA)

Contact

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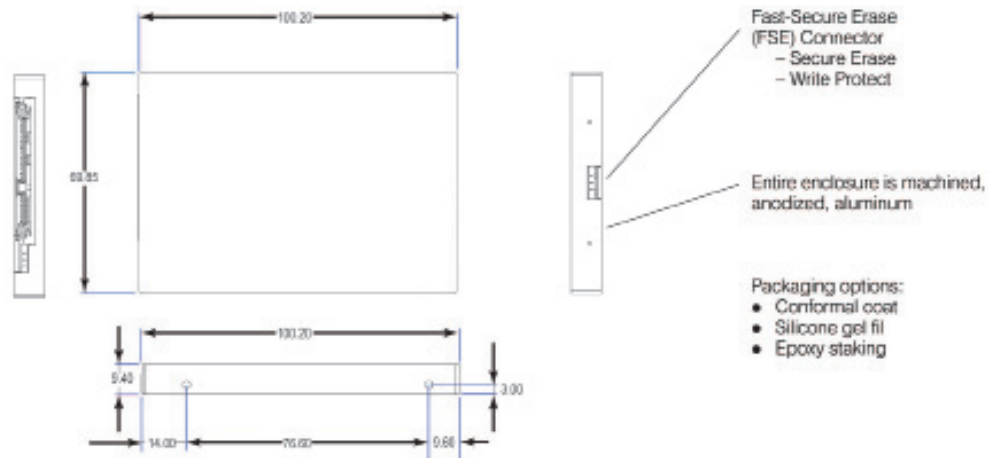
TCS brings proven, technology problem-solving expertise to its professional service offerings for the public sector. From continuity of operations and information assurance, to cyber security and integrated logistics support, TCS solves the toughest technical challenges, under conditions that demand 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.

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Specifications	
Performance	
Capacity	100GB, 200GB
Sustained Read	> 279 MB/s
Sustained Write	> 270 MB/s
Sequential Read	> 47,000 IOPS
Random Read, 4KB blocks	> 27,700 IOPS
Random Write, 4KB blocks	>17,800 IOPS
Power	
Input Voltage	+5VDC ± 10%
Read/Write (20GB)	2.56 W Maximum
Max In-rush current	< 1.25 Amp
Reliability	
MTBF	> 1.45 million hours, Telcordia 25°C, ground benign
Data Reliability	< 1 error in 10 ¹⁶ bits read
Data Retention	> 10 years
Endurance	Lifetime Write Capability, > 20,000 Terabytes
Wear-Leveling	Proprietary static and dynamic algorithms
Environment	
Operating Temperature	-40°C to +85°C
Storage Temperature	-50°C to +95°C
Altitude	80,000 feet
Humidity	5% to 95% relative humidity, non-condensing
Shock	1,500G at 0.5ms
Vibration	16.3G minimum RMS
MIL-STD-810 Test Options	Thermal Cycling, Thermal Shock, Shock, Vibration, Gunfire Vibration, Low Pressure, Sand & Dust, Fungus, Explosive Atmosphere, Salt Fog
Mechanical	
Dimensions (mm)	ATA Standard



Product Information subject to change without notice. DS-TSDG625S-A.