公TDK

Serial ATA 3Gbs Compatible
High Reliability SSD (Solid State Drive) with SMART Life Monitor Software
SDG3B Series

Conformity to RoHS Directive

2.5-inch SATA II Flash Disks with TDK SSD Controller GBDriver RS3
Featuring Data Randomizer, Auto Refresh Function, and Read Retry Function (optional)
8GB, 16GB, 32GB, 64GB, 128GB

TDK's highly reliable SSD SDG3B Series are high-speed SATA flash drives with high levels of speed performance, data reliability, storage lifespan, and data security. This series features high-speed access with an effective speed of 190MB/sec and a strong error-correcting ability that can extend up to 44bit ECC, giving exceptional high data reliability.

These SATA drives are equipped with a power backup circuit in SSD, and have high durability against any power problems. They are ideal for smart in automobiles and for other industrial smart.

A data randomizer, auto refresh function, and read retry function (optional) have been newly incorporated, and the data error occurrence risk is now lower than ever.

The SSD lifespan has been greatly enhanced, and is now among the best in the industry owing to TDK's unique dispersion writing method, and its advanced static wear leveling algorithm TDK Smart Swap. Also, the SSD lifespan analysis program TDK SMART, allows the number of times of writing (erasing) for all memory blocks to be acquired in real time as SMART information, thus enabling the drive lifespan to be quantitatively known. These drives use AES128Bit, which is an advanced encryption standard established by the Federal Information Processing Standard (FIPS) PUB197 of the United States Department of Commerce. By using the AES128bit in combination with the ATA standard security function and TDK's unique password lock function, it is able to prevent falsification, leakage, and unauthorized copying of private and confidential information.

TDK'S HIGHLY RELIABLE SSD SDG3B SERIES
FUNCTIONAL FEATURES

High-speed performance		
High reliability	Long lifespan	Security
Single Level Cell (SLC) flash memory		AES128bit encryption function
Strong ECC function Extendible up to 44bit ECC	Global static wear leveling function TDK Smart Swap	ATA security: password lock, secure erase
Data randomizer: lesser ECC booting		TDK original password function (Read/Write Protect)
Auto refresh function	Small writes accumulation	ATA Trim command
Auto recovery function	Read retry function: lesser ECC booting(option)	Technical support by the dedicated FAE registration system
Algorithm against powerdisconnection + Internal power backup circuit	Lifespan management by SSD life monitor software TDK SMART	

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

- All specifications are subject to change without notice.

FEATURES

- Compatible with TDK SSD controller IC GBDriver RS3.
- Compatible with SATA 2.6 (Gen1: 1.5Gbps; Gen2: 3.0Gbps). High-speed access with a read speed of 190MByte/sec and write speed of 70MByte/sec.*1
- Equipped with 8bit, 15bit/512Byte, 30bit, 44bit/1KByte ECC: Automatically selected by the flash memory.
- Equipped with an advanced global static wear leveling system TDK Smart Swap algorithm. The SSD lifespan has been greatly enhanced and overwriting is dispersed for all areas of memory.*2 (As reference, a flash memory with a 64GByte capacity can be rewritten (erased) 6.2 billion times. This is equivalent to 10-times rewriting (deleting) per second over an 20-year period.)*3
- Data Randomizer function randomizes data writing pattern not to repeat the same bits, reducing bit error risks.
- Auto Reflesh function periodically executes ECC for all data areas, keeping data retention reliability. Also, auto recovery function incorporated.
- High durability against power disconnection due to the TDK GBDriver RS3 algorithm against power disconnection and the power backup circuit in SSD.
- The lifespan analysis program "TDK SMART" is included. It facilitates the management of remaining SDD lifespan, and the RAS (Reliability, Analysis & Serviceability) function can be enhanced.
- Equipped with a function to set the number of total sectors. CHS parameters can also be customized, facilitating the system introduction.*4
- Equipped with Advanced Encryption Standard function AES128bit.
- Supports ATA Security function and ATA Trim command. Customers can set or cancel passwords. By using the AES encryption function, it is possible to prevent unauthorized copying.
- A dedicated FAE (Field Application Engineer) registration system provides fast and reliable solutions such as for system compatibility verification and customizing.
- These Solid State Drives are RoHS compliant. The components, lead terminals, etc. are all free from hazardous substances prohibited by the RoHS Directives of the EU (European Union).

*1 Dependent on flash memory connection configuration and system environment.
*2 The scope of static wear leveling execution can be customized. (Outside the scope of static wear leveling execution, dynamic wear leveling is executed).
*3 This applies to a product equipped with an SLC flash memory with a structure of 8 KByte/page.
*4 Setting the number of total sectors and CHS parameters is optional.
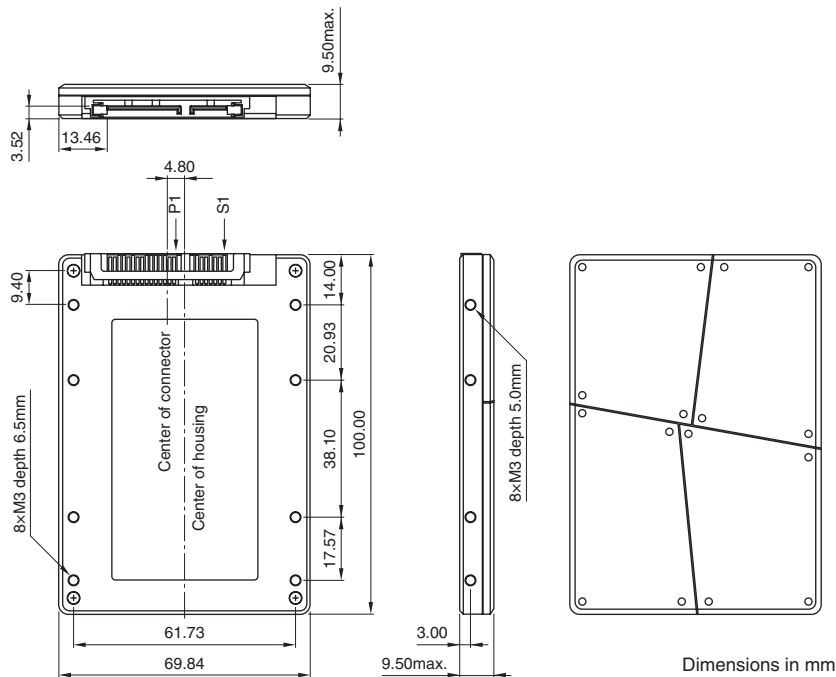
MAIN APPLICATIONS

- Replacing HDDs with SSDs or building SATA RAID system.
- Storage devices requiring a high frequency of data rewriting such as POS systems and station equipment.
- Usages requiring vibration resistance, energy conservation, and compact size such as Green IT equipment, medical equipment, logistics systems, and machine tools.
- Usages requiring strict data security such as terminals for financial institutions and digital signage.

APPLICATION EXAMPLES

- Thin client PC, tablet PC, SATA RAID SSD, and other IT devices, as well as cloud computing systems
- General marine navigation equipment: fish finders, GPS plotters, satellite compasses, Navtex, Navi Net 3D navigation radar, VTS (Vessel Transportation System) devices and overland AIS(Automatic Identification System), Inmarsat, weather FAX machines, National Oceanic and Atmospheric Administration, and Electronic Chart Display and Information Systems (ECDIS).
- General OA equipment: multifunction printers (MFPs), business use projectors, phone conference systems, and electronic blackboards.
- Entertainment equipment such as online karaoke and amusement arcades.
- Advertisement display devices: electronic billboards and electronic POPs.
- General FA equipment such as semiconductor manufacturing equipment, NC machine tools, sequencers, PLCs, panel computers, and embedded CPU boards.
- General transportation facility equipment such as automatic ticket vending and checking, and commuter pass-vending machines, train traffic control systems, automatic airline ticketing machines, and automatic check-in machines.
- Financial institution terminals such as cash registers and other POS (Point of Sales) equipment, convenient stores and kiosk terminals, and ATMs (Automated Teller Machines).
- General medical equipment and data analysis equipment: imaging CTs, blood analyzers, medical computers, electronic medical records, DNA micro array synthesizers, automated biochemical analyzers, remote medical systems, and automatic nursing-care systems.
- General communication/broadcast and information system equipment for communication base stations: fourth-generation (4G) mobile phone data communication systems (LTE-Advanced/WiMax2).
- General smart grid system equipment: smart meters, power grid communication infrastructure, auto power equipment control systems, energy management systems, and building A/C systems.
- General security terminals and equipment such as digital signage, biometric authentication systems, room entering/leaving management systems, and survalence cameras.
- Disaster prevention equipment such as earthquake notification systems and fire alarms for residential buildings.

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SHAPES AND DIMENSIONS

2.5-inch SATA SSD

Dimensions in mm

SPECIFICATIONS

Product name	Serial ATA3Gbps SSD (Solid State Drive) RS3 Series	
Series	SDG3B	
Data capacity	8GB/16GB/32GB/64GB	128GB
Size	2.5-inch SATA	
Memory type	8KBbyte/page SLC(Single Level Cell) NAND Flash Memory	8KBbyte/page MLC(Multi Level Cell) NAND Flash Memory
Controller	TDK GBDriver RS3	
Interface	Serial ATA Revision 2.6	
Transfer mode	SATA Gen1: 1.5Gbps, Gen2: 3.0Gbps	
Transfer speed* Read(max.)	190MBbyte/sec	(Currently under measurement)
Transfer speed* Write(max.)	70MBbyte/sec	(Currently under measurement)
Error-Correcting function(ECC)	8bit/15bit(512Byte), 30bit/44bit (1,024Byte)	8bit/15bit(512Byte), 30bit/44bit (1,024Byte)
Endurance	With/Without fixed area Effective blocks×50,000 times (Ex: 6.2 billion for 64GB SSD)	With/Without fixed area Effective blocks×1,500 times (Ex: 0.18 billion for 128GB SSD)
Vibration resistance	15G	
Impact resistance	1,000G	
MTBF	500,000 hours	
Operating temperature range	0 to 70℃	
Ambient storage temperature range	−25 to +85℃	
Storage/Operation humidity range	0 to 90(%) RH [No condensation]	
Power supply voltage	5V±10%	
Acquired standards	CE/FCC/VCCI	
Environmental specifications	RoHS compliant	
Country of origin	Taiwan	

* Measured by CrystalDiskMark 3.0 in 4ch Interleaved mode.

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