



*think* PARALLEL

# PATA SSD

U.DMA6 IDE SSD **SDG8B** Series

## From Hard to SOLID Industrial-Use Parallel ATA SSDs

Parallel ATA (PATA) hard disk drives (HDDs) are widely used in social infrastructure equipment, industrial equipment, and embedded equipment. However, production of most PATA (IDE) HDDs has stopped, and the change to Serial ATA (SATA) interface has accelerated. Therefore, it is necessary to connect conventional systems to SATA HDDs using IDE-SATA conversion connectors and SATA bridge ICs, or to change the CPU chipset, which both place a heavy burden on maintenance. TDK's SDG8B series is PATA (IDE) SSDs that can resolve such issues. Connection using a standard IDE 44Pin connector is possible, making it easy to change from HDDs to SSDs.



**BASIC CHARACTERISTICS / RATINGS**

Data capacity	1GB to 32GB
Power supply voltage	5.0V±10%
Ambient operating temperature	0 to +70 °C (-40 to +85 °C)
Ambient storage temperature	-25 to +85 °C (-40 to +85 °C)
Consumption current	105mA (5.0V in Single mode UDMA Read/Write) 130mA (5.0V in 2ch mode UDMA Read/Write) 150mA (5.0V in 2ch interleaved mode UDMA Read/Write)
Shock resistance	1,500G
Vibration resistance	15G

## U.DMA6-Compatible Parallel ATA (PATA) Solid State Drives (SSDs) for industrial use

Complies with RoHS directives

# SDG8B Series

1GB/2GB/4GB/8GB/16GB/32GB

### TDK GBDriver® RA8 Employed SLC Flash Equipped High-Reliability 2.5-inch IDE Solid State Drive

TDK's SDG8B series is high-reliability SSD (Solid State Drive) for industrial-use that are equipped with TDK's SSD controller GBDriver® RA8. They support read access speeds up to 45MByte/sec and write access speeds up to 24MByte/sec. They also feature powerful error correction capabilities scalable to 15-bit/sector ECC, providing high levels of data reliability.

They are also equipped with an auto-recovery function that automatically recovers data when read disturbance errors occur from repeated reading of data. And a proprietary algorithm reduces the risk of collateral data errors such as corruption of data other than the data being written if power is

interrupted when writing data.

Furthermore, an advanced static wear leveling function developed by TDK is also included to equalize data programming (erasing) to all memory areas of the flash memory, greatly increasing endurance of the SSDs. SMART (Self-Monitoring & Analysis Reporting Technology) provides information about the number of times that memory blocks have been programmed (erased), which facilitates quantitative lifespan management of SSDs. With technical support by dedicated FAE, these SSDs are ideal for industrial use and embedment.

#### □ FEATURES

- Equipped with GBDriver® RA8 memory controller designed by TDK.
- Equipped with high-speed and highly-durable SLC (Single Level Cell) NAND-type flash memory.
- Compatible with PIO mode0-6/Multiword DMA mode0-4/Ultra DMA mode0-6. Realizes high-speed access: 45MByte/sec read access, 24MByte/sec write access. (\*1)
- Equipped with a 15bits/sector ECC.
- Equipped with TDK Global Static wear leveling algorithm (TDK Smart Swap). This algorithm counts the number of times each memory block is erased (programmed) and replaces blocks uniformly, which drastically improves endurance of the installed flash memory. (\*2)  
The 16GB type for example supports approximately 3.1 billion erase cycles. Even at a rate of 10 erases per second, this equates to an expected service life of 10 years. (\*3)
- TDK's proprietary algorithm reduces the risk of collateral data errors such as corruption of data other than the data being written if power is interrupted when writing data.
- SSD life monitor software "TDK SMART" is included.  
Drive life span can be checked quantitatively in real time, allowing easy maintenance.
- Equipped with a total sector number setting function. The number of logical blocks to be assigned to a data area is customizable by increasing or decreasing in one sector units. For example, the number of times data can be written to the flash memory can be increased by reducing the number of logical blocks in the data area.  
Conversely, in the case of applications that do not require an extended life span, the memory capacity can be maximized by increasing the number of logical blocks in the data area. CHS parameters can also be customized.
- The function allows customers to set and remove a password to implement independent authentication and protect important data.
- Dedicated FAE (Field Application Engineer) system provides speedy and reliable solutions e.g. system compatibility verification and customizing.
- Complies with RoHS directives. 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 4KByte/page.

#### □ EXAMPLES OF APPLICATIONS

- NC machine tools, sequencers, PLCs, panel computers, touch panel systems, embedded CPU boards and other factory automation equipment
- Karaoke on demand systems, arcade games and other amusement equipment
- Communication equipment, broadcasting equipment and other social infrastructure equipment
- Biometric authentication systems, entry/exit control systems, security terminals for surveillance cameras and other security equipment
- Station equipment: automatic ticket vending machines, and automatic ticket gates, commuter pass-vending machines, etc.
- Digital tachographs, data logger, drive recorders, and rear-view monitors and other automotive equipment
- Multi-function printers (MFPs), commercial-use projectors and other office automation equipment
- Cash registers and other point-of-sales (POS) equipment, convenience store and kiosk terminals, ATMs and other banking terminals
- Diagnostic imaging systems, blood analysis equipment, medical PCs, electronic patient records systems and other medical equipment and data analysis equipment

\* GBDriver® is a trademark or registered trademark of TDK Corporation

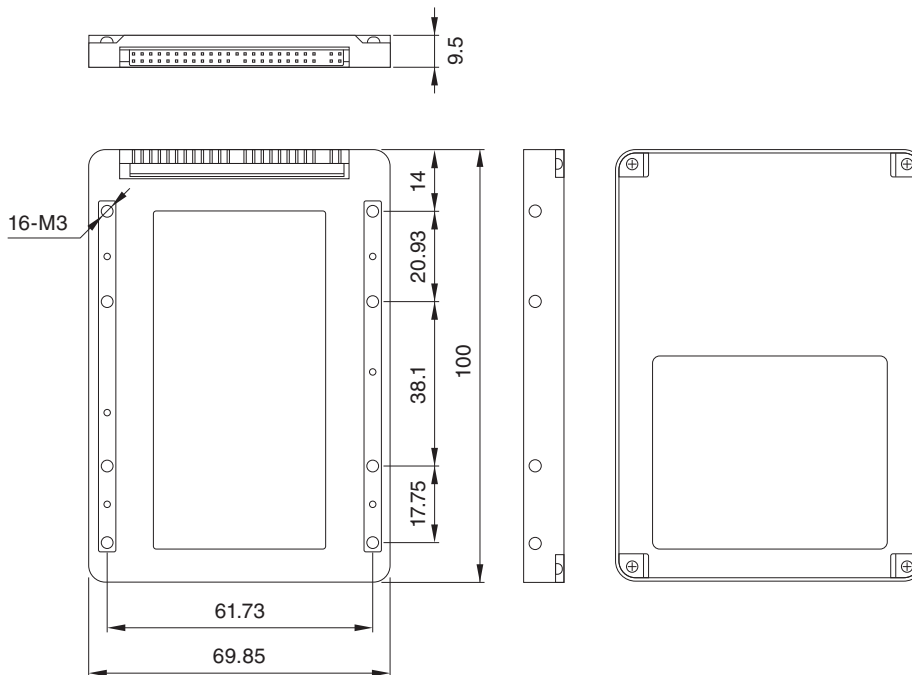
• Complies with RoHS directives

This means that, in conformity with EU Directive 2011/65/EU, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.



Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

□ SHAPES AND DIMENSIONS



Dimensions in mm

□ CHARACTERISTICS

Series	SDG8B Series
Data capacity	1GB/2GB/4GB/8GB/16GB/32GB
Form factor	2.5-inch PATA
Interface	IDE
Transfer mode	Ultra DMA mode 0-6 Multiword DMA mode 0-4 PIO mode 0-6
Transfer speed* Read (max.)	45MByte/sec
Write (max.)	24MByte/sec
Error check and correction (ECC)	15bit/512Byte
Power supply voltage	5.0V±10%
Ambient operating temperature	0 to +70°C [-40 to +85°C Industrial Option]
Ambient storage temperature	-25 to +85°C [-40 to +85°C Industrial Option]
Storage/Operating humidity	0 to 90(%) RH [No condensation]
Conformed standards	CE/FCC/VCCI
Environmental specifications	RoHS compliant

\* In 2ch Interleaved mode, measured by HDD Bench. The speed may vary depending on the actual use environment/conditions.

□ ENDURANCE (Expected P/E cycles)

Data Capacity	Part No.	Expected Endurance (Unit: Million times)	Allowable accesses per second according to age of equipment (When operating 24 hrs/d,365 ds/yr)		
			1 year	5 years	10 years
1GB	SDG8B01GVAB <b>C</b> S-TSA	197	6.25	1.25	0.62
2GB	SDG8B02GVBB <b>C</b> S-TSA	394	12.49	2.50	1.25
4GB	SDG8B04GVBB <b>C</b> S-TSA	788	24.99	5.00	2.50
8GB	SDG8B08GVBB <b>C</b> S-TSA	1,576	49.97	9.99	5.00
16GB	SDG8B16GVBB <b>C</b> S-TSA	3,152	99.95	19.99	9.99
32GB	SDG8B32GLBB <b>C</b> S-SSA	3,152	99.95	19.99	9.99

\* The above products have an operating temperature of 0 to +70°C. For products with an operating temperature of -40 to +85°C, convert the blue letter "C" in the product name to "W".  
(Ex.: SDG8B01GVAB**C**S-TSA [0 to +70°C]  
⇒ SDG8B01GVAB**W**S-TSA [-40 to +85°C])

