⚙TDK

NAND-Type Flash Memory Controller GBDriver RA6 Conformity to RoHS Directive

PCMCIA, ATA Interface Type

For Embedded Systems/ Silicon Disk/ CompactFlash®

NAND-type Flash Memory has been changing its memory cell structure, cell size, and functions, and increases in its capacity and reductions to its cost have been undergoing rapid promotion through downsizing. However, if the flash memory generation change accelerates without keeping cross-generational compatibility, procurement of NAND-type Flash Memory may become difficult and a larger risk of restricting system introductions and system designs may arise.

The TDK GBDriver RA6 eliminates these risks by controlling the latest flash memory (TwoPlane-write Flash Memory) while maintaining support for existing NAND-type Flash Memory. Aside from this, the GBDriver RA6 supports UltraDMA Mode2 with a maximum transfer speed of 33.3MB/s, in order to control the latest flash memory with the industry's highest level of speed.

Moreover, the architecture of wear levelling has been renewed. Even for disproportionate writing to memory, the GBDriver RA6 controls write levelling in order to prevent writing from being concentrated on any particular part of the memory. Along with the newly equipped system-strengthening functions (the smart command support and the function of setting all sector numbers [clipping function]), this prolongs the life of NAND-type Flash Memory and increases reliability in using NAND-type Flash Memory as an HDD substitute.

FEATURES

- Supports UltraDMA Mode2. Realizes 20MB/s(equivalent to 138 times speed) in burst writing and 23MB/s(equivalent to 150 times speed)[1] in reading by the host.
- Controls NAND-type Flash Memory up to 8GB. Confirmed compatibility with Flash Memories of several manufacturers.[2]
- The TDK flash control technology utilizes fault tolerant architecture to protect against power failure errors.
- Command and power management specifications conform to the CompactFlash™ Specification Version 3.0.
- Supports the smart command. Equipped with the function to read the number of used blocks, unused blocks, and fault blocks, and the memory lifespan can be estimated.
- Custom settings for the CIS data and the vender-unique area of "Identify Device" command are supported.
- Equipped with the function to set all sector numbers (clipping function).
  The number of physical blocks can be set to be smaller, in order to increase the number of times that rewriting to the flash memory is possible.
- Supports a protect function conforming to the ATA standard. In addition to the existing TDK unique Write Protect/Read Protect functions, the user can set or disable the password.
- Conforms to the RoHS directives.

[1] Depends on the Flash Memory used.
[2] Please contact us to confirm the Flash the Flash Memory compatibility.

MAIN APPLICATIONS

- CompactFlash® Card
- Silicon Disc
- Embedded Systems

APPLICATION EXAMPLES

- For NOR Flash-/HDD- replacement applications.
- For user data storage applications; home information appliances, STBs, PDAs, mobile phones, etc.
- For booting embedded systems of WindowsXP Embedded-base or Linux-base.
- For other applications that require vibration tolerance, low power consumption and downsizing; Medical equipment, logistics, POS system, etc.

- GBDriver is a registered trademark of TDK Corporation
- CompactFlash® is a trademark of SanDisk Corporation

- 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.

SHAPES AND DIMENSIONS
TQFP128pin Single Chip

Dimensions in mm
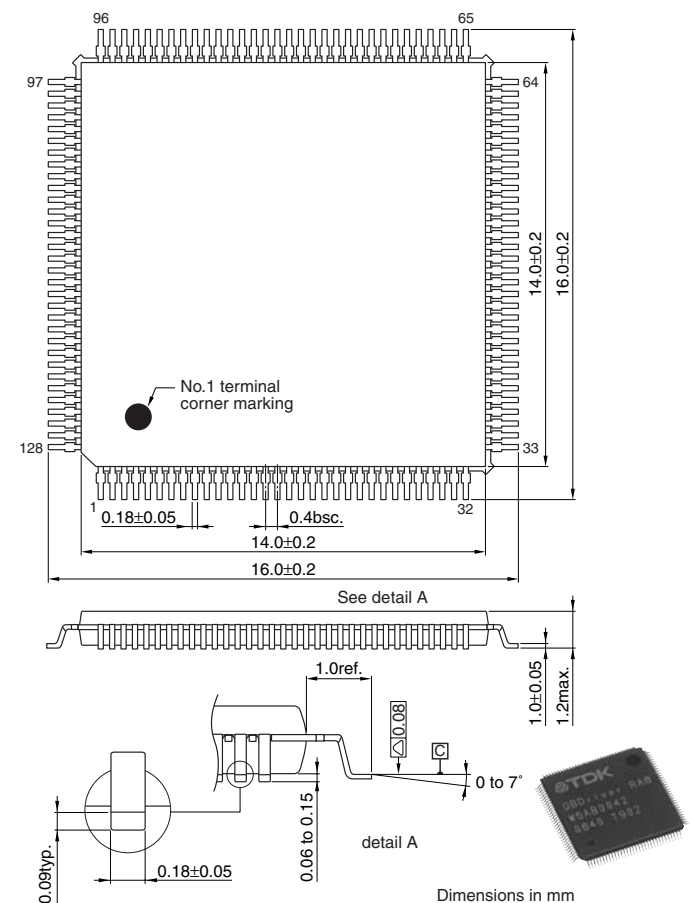
SPECIFICATIONS

Timing specifications	Host I/F	120ns[BUS cycle]
	Flash I/F	60ns/90ns
Power specifications	Host I/F	2.7 to 3.6V
	Core	1.65 to 1.95V
System clock		33.33MHz
Temperature ranges	Operating	−40 to +85°C[Load: 80pF]
	Storage	−55 to +125°C

- All specifications are subject to change without notice.