



PATA NANDrive™

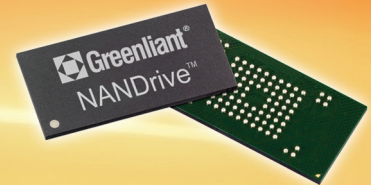
85LD/85LP Series

Product Brief

Product Description

The award-winning PATA NANDrive™ family of embedded solid state drives (SSDs) integrate Greenliant's advanced ATA controller with one or more NAND flash die in a multi-chip package. With its small form factor and widely adopted industry-standard ATA/IDE interface, PATA NANDrive has revolutionized how embedded system designers utilize NAND flash devices. Its built-in microcontroller and flash file management firmware replace the need for host-side Flash File System (FFS) and Memory Technology Driver (MTD) software.

PATA NANDrive provides complete IDE hard disk drive (HDD) functionality and compatibility in a ball grid array (BGA) package for easy, space-saving and cost-effective mounting to a system motherboard. It can also be seamlessly integrated in systems that don't have an ATA interface by connecting the device to a standard memory bus. PATA NANDrive is an ideal replacement for high-density parallel NOR flash and CompactFlash cards in embedded designs that require smaller, higher security and more reliable storage.



www.NANDrive.com

Key Features

One of the Industry's Smallest SSDs

- 12mm x 24mm 91-ball LPGA package
- 14mm x 24mm 91-ball BGA package

Industry Standard ATA/IDE Interface

- Host Interface: 8- or 16-bit access
- Supports up to PIO Mode-6
- Supports up to Multi-Word DMA Mode-4
- Supports up to Ultra DMA Mode-6

Energy Efficient

- Reduces power consumption by putting unused circuitry into sleep mode without host intervention

Multitasking Technology Increases Performance

- Sustained Read Performance up to 60 MB/sec
- Sustained Write Performance up to 40 MB/sec

Robust Pre-programmed Firmware

- Advanced wear leveling maximizes product lifespan
- Configurable algorithms support global and group wear leveling
- Embedded flash file system for seamless capacity upgrade with no change to host software

Power Interrupt Data Protection

- Prevents data corruption when power is lost or unstable

Bad Block Management

- Replaces bad blocks with spare blocks in the NAND flash to prevent uncorrectable errors

Built-in ECC

- Uses advanced hardware engine to correct bit errors

Expanded Data Protection

- WP#/PD# pin configurable by firmware for prevention of data overwrites
- Added data security through user-selectable protection zones and security erase/purge commands

SSD Lifespan Monitoring

- Enables SMART command-based alerts indicating the remaining useful product life
- Estimates optimal SSD capacity based upon specific application usage models

Multiple Capacities with Same Pin-out

- 512 MB, 1 GB, 2 GB, 4 GB, 8 GB, 16 GB, 32 GB
- 1mm ball spacing enables use of lower cost PCBs

Commercial and Industrial Temperatures

- Commercial operation: 0°C to +70°C
- Industrial operation: -40°C to +85°C



Applications

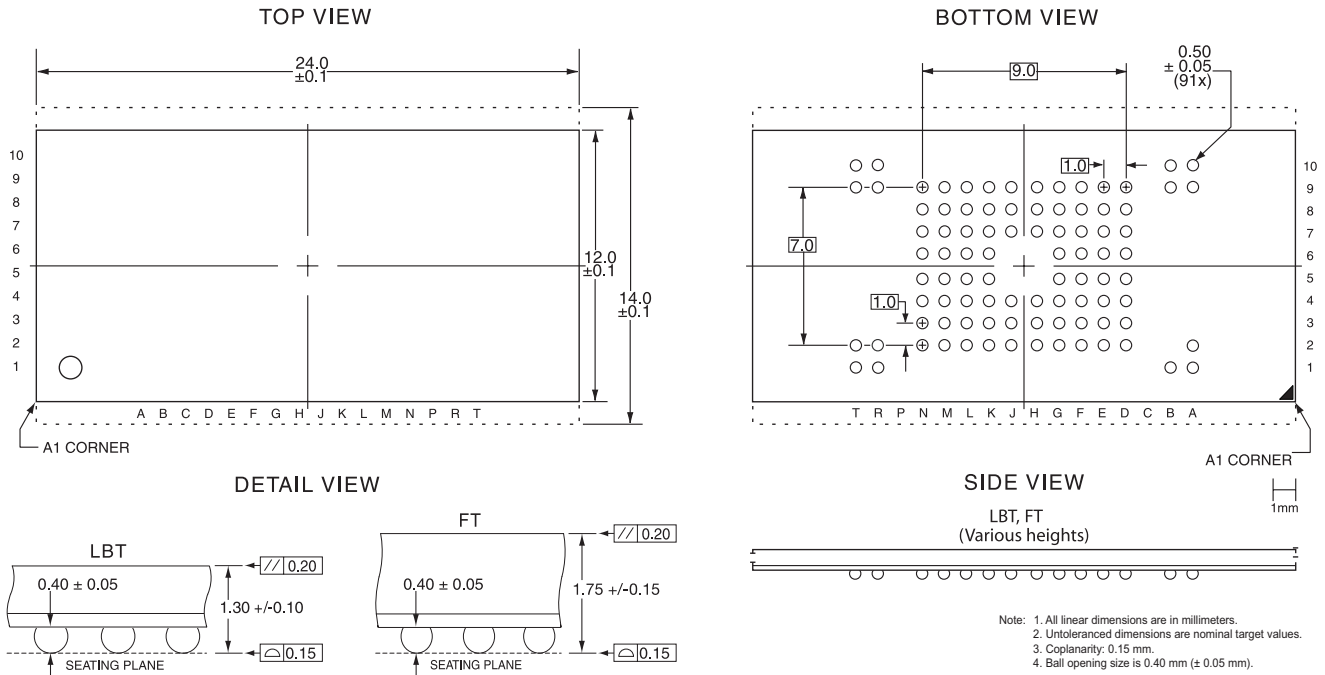
- Set-top box / Net-top box
- GPS and telematics
- In-vehicle infotainment
- Video conferencing
- Tablet PC / Smartbook / Netbook
- Multi-function printer
- Point of Sale terminal
- VoIP system / PBX
- Wireless base station
- Router / Gateway / Switch
- Server / Network-attached storage
- Industrial PC / Single-board computer
- Ultrasound and medical imaging
- Industrial automation & control
- Test & measurement instrumentation
- Video surveillance / ID terminal

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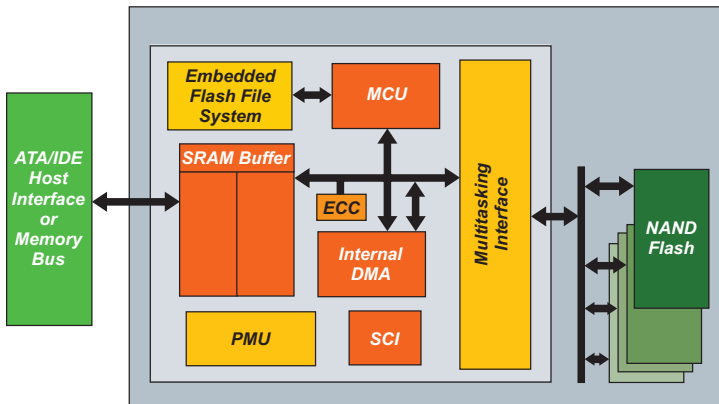
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PATA NANDrive Package Diagrams

91-ball BGA package
 LBT is 12mm x 24mm
 FT is 14mm x 24mm
 Pb-free (RoHS compliant)



PATA NANDrive Block Diagram



Product Lineup

85 Series PATA NANDrive			
Capacity	NAND Configuration	Temperature Range	Package
512 MB	1 bit per cell (SLC)	Industrial	12 x 24 x 1.4mm LBGA
1 GB	1 bit per cell (SLC)	Industrial	12 x 24 x 1.4mm LBGA
2 GB	2 bits per cell (MLC)	Commercial	12 x 24 x 1.4mm LBGA
	1 bit per cell (SLC)	Industrial	14 x 24 x 1.9mm BGA
4 GB	2 bits per cell (MLC)	Commercial	14 x 24 x 1.9mm BGA
	1 bit per cell (SLC)	Industrial	14 x 24 x 1.9mm BGA
8 GB	2 bits per cell (MLC)	Commercial	14 x 24 x 1.9mm BGA
	1 bit per cell (SLC)	Industrial	
16 GB	2 bits per cell (MLC)	Commercial	14 x 24 x 1.9mm BGA
		Industrial	
32 GB	2 bits per cell (MLC)	Commercial	14 x 24 x 1.9mm BGA
		Industrial	



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For more information please contact your local Greenliant sales representative.
 See the "Sales" section of www.Greenliant.com for complete listings.

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These specifications are subject to change without notice. 10/2013