

**TOSHIBA**



**TOSHIBA AMERICA INFORMATION SYSTEMS  
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**MK8007GAH (HDD1584)  
1.8-INCH HARD DISK DRIVE  
USER MANUAL**

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## INTRODUCTION – MK8007GAH (HDD1584) HARD DISK DRIVE

### General Features

- 1.8" sized drive
- 2 Platter
- 80 Gigabytes
- 8mm High
- 15ms Average Seek Time
- ATA-6 Interface
- Ultra DMA 100
- 2MB Buffer
- Rotational speed of 4,200rpm
- MTTF 300,000 Hours

## SETUP – MK8007GAH (HDD1584) HARD DISK DRIVE



**Caution:** Your Hard Disk Drive is a precision device and even a small drop onto any surface can cause damage. Electrostatic discharge can also damage the drive. You should ground yourself prior to handling the drive.



*Figure 1. MK8007GAH Side View*

### Installation Notes

- Do not apply any force to the top cover, except the screw areas on top cover. Maximum force to the specified area is 2N.



**important Note:** *Disconnect power from your computer system before beginning installation*

## **USING THE HARD DISK DRIVE – MK8007GAH (HDD1584) HARD DISK DRIVE**

### **Backing up Data Files**

To avoid data loss, regularly back up the data files on the hard disk drive.

## SPECIFICATIONS –MK8007GAH (HDD1584) HARD DISK DRIVE

### General

|           |                     |
|-----------|---------------------|
| Model     | MK8007GAH (HDD1584) |
| Interface | ATA-6               |

### Functionality

|                         |                             |
|-------------------------|-----------------------------|
| Formatted Capacity      | 80.0GB                      |
| Rotational Speed        | 4,200rpm                    |
| Avg. Rotational Latency | 7.14/ms                     |
| Spin-up Time            | 3.5sec (typical)            |
| Buffer                  | 2MB                         |
| Seek Time               |                             |
| Average                 | 15                          |
| Maximum                 | 26                          |
| Internal Transfer Rate  | 164.3 ~ 341 Mbits/sec (max) |
| Host Transfer Rate      |                             |
| Ultra DMA mode          | 100Mbytes/sec               |
| PIO Mode                | 16.6Mbytes/sec              |
| Interleave Factor       | 1:1                         |

### Internal Drive Characteristics

|                       |                |
|-----------------------|----------------|
| Number of Disks       | 2              |
| Number of Data Heads  | 4              |
| Track Density (TPI)   | 5,287 (134.3k) |
| Logical Cylinders     | 16,383         |
| Logical Heads         | 16             |
| Logical Sectors/track | 63             |
| Bytes per Sector      | 512            |
| Logical Blocks (LBA)  | 156,301,488    |

### Reliability

|                             |                                 |
|-----------------------------|---------------------------------|
| Preventative maintenance    | None                            |
| Non-recoverable read errors | 1 error per $10^{13}$ bits read |

### Electrical

|         |         |
|---------|---------|
| Voltage | 3.3V 5% |
|---------|---------|

### Power Consumption

|                               |                                       |
|-------------------------------|---------------------------------------|
| Start                         | 1.8W typ                              |
| Seek                          | 1.15W typ                             |
| Read/Write                    | 1.1W typ                              |
| Sleep                         | 0.07W typ                             |
| Energy Consumption Efficiency | 0.00375W/GB avg                       |
| Shock                         |                                       |
| Operating                     | 4,900m/s <sup>2</sup> (500G)(2msec)   |
| Non-Operating                 | 14,700m/s <sup>2</sup> (1500G)(1msec) |

## **Physical**

|        |                  |
|--------|------------------|
| Height | 0.315 (8.0mm)    |
| Width  | 2.13" (54.0mm)   |
| Depth  | 3.09" (78.5mm)   |
| Weight | 2.19oz (62g) typ |

## **Regulatory**

The drive satisfies the following standards:

|                                     |               |
|-------------------------------------|---------------|
| Underwriters Laboratories (UL)      | 1950          |
| Canadian Standard Association (CSA) | C22.2 No. 950 |
| TUV Rheinland                       | EN 60 950     |
| BSMI                                | 3902C799      |

## DRIVE CONNECTORS –MK8007GAH (HDD1584) HARD DISK DRIVE



*Figure 1. MK8007GAH HDD - INTERFACE CONNECTOR*

### **Interface Connector**

Drive Side Connector

MCD-D50 Series by DDK Connectors

Recommended Host Side Connector

MCD-D50 Series by DDK Connectors



## Interface Signals

| DRIVE INTERFACE SIGNALS   |                                |     |              |
|---|--------------------------------|-----|--------------|
| PIN   | SIGNAL                         | PIN | SIGNAL       |
| 1   | RESET                          | 2   | GROUND       |
| 3   | DD 7                           | 4   | DD 8         |
| 5   | DD 6                           | 6   | DD 9         |
| 7   | DD 5                           | 8   | DD 10        |
| 9   | DD 4                           | 10  | DD 11        |
| 11  | DD 3                           | 12  | DD 12        |
| 13  | DD 2                           | 14  | DD 13        |
| 15  | DD 1                           | 16  | DD 14        |
| 17  | DD 0                           | 18  | DD 15        |
| 19  | GROUND                         | 20  | OPEN         |
| 21  | DMARQ                          | 22  | GROUND       |
| 23  | DIOW/STOP                      | 24  | GROUND       |
| 25  | DIOR/<br>-DMARDY<br>HSTROBE    | 26  | GROUND       |
| 27  | IORDY/<br>-DMARDY/<br>-DSTROBE | 28  | CSEL         |
| 29  | DMACK                          | 30  | GROUND       |
| 31  | INTRQ                          | 32  | IOCS16       |
| 33  | DA1                            | 34  | PDIAG        |
| 35  | DA0                            | 36  | DA 2         |
| 37  | CS0                            | 38  | CS1          |
| 39  | DASP                           | 40  | GROUND       |
| 41  | 3.3V (LOGIC)                   | 42  | 3.3V (MOTOR) |
| 43  | GROUND                         | 44  | RESERVED     |
| <i>Note: Symbol () in front of signal indicates negative logic.</i> |                                |     |              |