

# TOSHIBA STORAGE DEVICE DIVISION

## 2.5" HDD INSTALLATION NOTES

### MK1234/1034/8034/6034/4034GSX

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#### GENERAL DESCRIPTION

Toshiba's 9.5mm series of 2.5" Hard Disk Drives is comprised of fast, high-capacity drives which feature an ATA-7 and Serial ATA 1.0a/Serial ATA II 1.2 interface embedded controller. Toshiba recommends that these drives be installed by a qualified technician. Additional installation hardware may be required depending on how and where the drive is being installed.

| Specifications        | MK1234GSX | MK1034GSX | MK8034GSX |
|-----------------------|-----------|-----------|-----------|
|                       | HDD2D31   | HDD2D37   | HDD2D38   |
| Formatted Capacity    | 120.034GB | 100.03GB  | 80.026GB  |
| Height                | 9.5mm     | 9.5mm     | 9.5mm     |
| # of Disks (platters) | 2         | 2         | 2         |
| # of Data Heads       | 4         | 4         | 3         |
|                       | MK6034GSX | MK4034GSX |           |
|                       | HDD2D35   | HDD2D39   |           |
| Formatted Capacity    | 60.012GB  | 40.008GB  |           |
| Height                | 9.5mm     | 9.5mm     |           |
| # of Disks (platters) | 1         | 1         |           |
| # of Data Heads       | 2         | 2         |           |

#### FUNCTIONAL SPECIFICATION

| Logical Drive Parameters | MK1234GSX   | MK1034GSX   | MK8034GSX   |
|--------------------------|-------------|-------------|-------------|
|                          | HDD2D31     | HDD2D37     | HDD2D38     |
| # of Cylinders (user)    | 79,056      | 69,336      | 74,520      |
| Bytes per Sector         | 512         | 512         | 512         |
| LBA Sectors              | 234,441,648 | 195,371,568 | 156,301,488 |
| Buffer Size (KBYTES)     | 8,192       | 8,192       |             |
| Rotation Speed (±.1%)    | 5400        | 5400        |             |
| Transfer Rate            | 245 – 475   | 220 – 466   | 220 – 466   |
| Internal (MBITS/sec.)    |             |             |             |
| # of Cylinders (logical) | 16,383      | 16,383      | 16,383      |
| # of Heads               | 16          | 16          | 16          |
| # of sec./Track          | 63          | 63          | 63          |
| Host Transfer Rate       | 150MB/s     | 150MB/s     | 150MB/s     |
| Seek Time (MSEC.)        |             |             |             |
| Average                  | 12          | 12          | 12          |
| Track-to-track           | 2           | 2           | 2           |
| Maximum                  | 22          | 22          | 22          |

| Logical Drive Parameters     | MK6034GSX   | MK4034GSX  |  |
|------------------------------|-------------|------------|--|
|                              | HDD2D35     | HDD2D39    |  |
| # of Cylinders (user)        | 79,056      | 60,912     |  |
| Bytes per Sector             | 512         | 512        |  |
| LBA Sectors                  | 117,210,240 | 78,140,160 |  |
| Buffer Size (KBYTES)         | 8,192       | 8,192      |  |
| Rotation Speed ( $\pm 1\%$ ) | 5400        | 5400       |  |
| Transfer Rate                | 245 – 475   | 199– 434   |  |
| Internal (MBITS/sec.)        |             |            |  |
| # of Cylinders (logical)     | 16,383      | 16,383     |  |
| # of Heads                   | 16          | 16         |  |
| # of sec./Track              | 63          | 63         |  |
| Host Transfer Rate           | 150MB/s     | 150MB/s    |  |
| Seek Time (MSEC.)            |             |            |  |
| Average                      | 12          | 12         |  |
| Track-to-track               | 2           | 2          |  |
| Maximum                      | 22          | 22         |  |

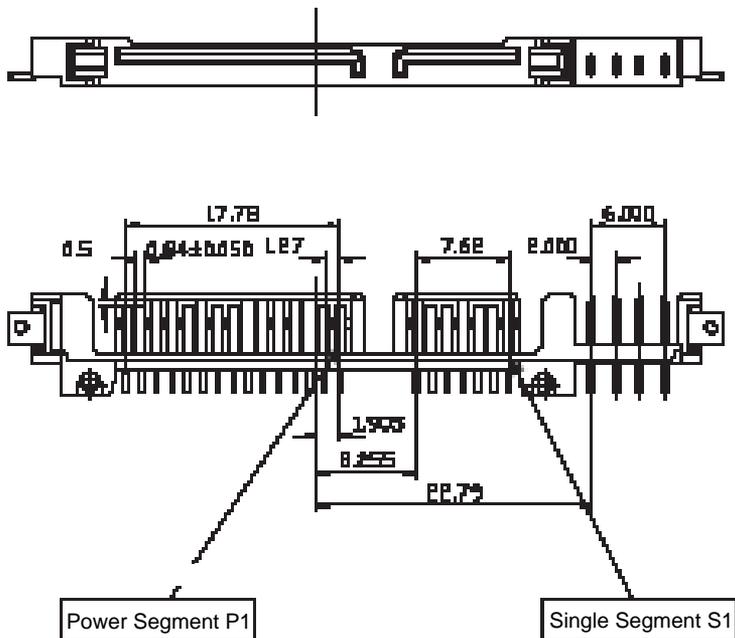
### **UNPACKING PROCEDURE**

Visually inspect the shipping container prior to unpacking for any signs of damage to the container or its contents (the carrier is responsible for any damage incurred during shipment). The drive is a precision device and even a small drop onto any surface can cause damage. Prior to opening the anti-static bag, it is recommended that the user ground themselves with a ground strap or by touching the PC chassis or other metal object. Remove the drive from the anti-static bag and check it for damage. Place the drive on the anti-static bag while configuring jumpers to avoid any electrostatic discharge. Save the shipping container and packing material for possible use later.

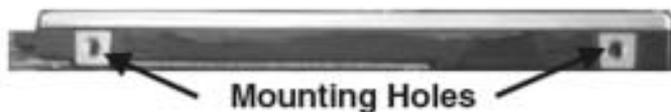
### **INSTALLATION INSTRUCTIONS**

*Note: Toshiba's 2.5" HDDs are primarily used in notebook devices. Installation into a notebook varies depending on the system manufacturer. Toshiba's 2.5" drives that are installed into a desktop PC require a 3.5" installation kit.*

1. Determine mounting configuration (can be mounted in either a horizontal or vertical orientation).
2. Configure drive for system application.
3. When connecting the drive and host system with Serial ATA cable, use of a Serial ATA 1.a specification compliant cable is recommended.
4. Refer to applicable manuals for software installation instructions.



**FIGURE 1 – 2.5" HDD JUMPER LOCATIONS**



**FIGURE 2 – MOUNTING HOLE LOCATIONS**

**INTERFACE CONNECTOR**

|                                 |           |   |
|---------------------------------|-----------|---|
| Drive Side Connector            |           | Molex RSD97799-015 or equivalent  |
| Recommended Host Side Connector | for board | Right Angle Type: Molex 67492-0221, 67492-0222 or equivalent                          |
|                                 | for cable | Molex 88750-5318 or equivalent (for signal). No recommendation now for power segment. |

## PIN ASSIGNMENT

The following table describes all of the pins on the Serial ATA connector

| Signal Segment Key  |     |          |   |
|---|-----|----------|---|
| Signal Segment  | S1  | GND      | 2nd mate                                |
|   | S2  | A+       | Differential Pair A from PHY            |
|   | S3  | A-       |   |
|   | S4  | GND      | Differential Pair B from PHY            |
|   | S5  | B-       |   |
|   | S6  | B+       |   |
|   | S7  | GND      | 2nd mate                                |
| Signal Segment "L"  |     |          |   |
| Central Connector Polarizer   |     |          |   |
| Power Segment "L"   |     |          |   |
|   | P1  | V33      | 3.3V Power (unused)                     |
|   | P2  | V33      | 3.3V power (unused)                     |
|   | P3  | V33      | 3.3V Power pre-charge 2nd mate (unused) |
|   | P4  | GND      |   |
|   | P5  | GND      |   |
|   | P6  | GND      |   |
|   | P7  | V5       | 5V Power pre-charge 2nd mate            |
|   | P8  | V5       | 5V power                                |
|   | P9  | V5       | 5V power                                |
|   | P10 | GND      |   |
|   | P11 | ACT/Spin |   |
|   | P12 | GND      | 1st Mate                                |
|   | P13 | V12      | 12V Power pre-charge 2nd mate (unused)  |
|   | P14 | V12      | 12V Power (unused)                      |
|   | P15 | V12      | 12V Power (unused)                      |
| Power segment Key   |     |          |   |
| Notice: this drive uses 4V power only. 3.3V and 12V power are not used. |     |          |   |

## TECHNICAL SUPPORT

Should you require technical support, contact your computer distributor. If your distributor is unable to answer your questions, have them call Toshiba Storage Device Division Technical Support, on your behalf.

TOSHIBA - STORAGE DEVICE DIVISON TECHNICAL SUPPORT

PHONE: 510/651-6798 FAX: 510/623-9893

EMAIL: [sdd\\_techhelp@pcs-sj.com](mailto:sdd_techhelp@pcs-sj.com)

You can also visit Toshiba's web site at: <http://www.sdd.toshiba.com>