TOSHIBA STORAGE DEVICE DIVISION

MK2008GAL, MK3008GAL, MK4008GAH & MK6008GAH
HDD INSTALLATION NOTES

GENERAL DESCRIPTION

Toshiba's MK2008GAL (HDD1662), MK3008GAL (HDD1642), MK4008GAH (HDD1744) and MK6008GAH (HDD1724) hard disk drives are a series of ultra-slim fast light weight 1.8 inch Winchester disk drive. The drives are ATA-6 compliant.

SPECIFICATIONS	**MK2008GAL**	**MK3008GAL**	**MK4008GAH**	**MK6008GAH**
	HDD1662	HDD1642	HDD1744	HDD1724
FORMATTED CAPACITY	20.0GB	30.0GB	40.0GB	60.0GB
HEIGHT	5mm	5mm	8mm	8mm
WEIGHT	1.69oz (48g)	1.69oz (48g)	2.08oz (59g)	2.08oz (59g)
NO. OF DISKS (PLATTERS)	1	1	2	2
NO. OF DATA HEADS	2	2	4	4

FUNCTIONAL SPECIFICATION

LOGICAL DRIVE PARAMETERS	**MK3008GAL**	**MK6008GAH**	**MK2008GAL**	**MK4008GAH**
	HDD1642	HDD1724	HDD1662	HDD1744
NO. OF CYLINDERS (user)	55,728	55,728	43,200	43,200
BYTES PER SECTOR	512		512	
BUFFER SIZE	2MB		2MB	
ROTATION SPEED (±0.1%)	4,200rpm		4,200rpm	
TRANSFER RATE INTERNAL	131.1 - 283.3 Mbits/sec.		132.6 - 230.9 Mbits/sec.	
NO. OF CYLINDERS (logical)	16,383			
NO. OF HEADS (logical)	16			
NO. OF SECTORS/TRACK	63			
HOST TRANSFER RATE				
PIO/ULTRA DMA (ATA mode)	16.6/100MB/s			
SEEK TIME				
AVERAGE	15ms			
TRACK-TO-TRACK	3ms			
MAXIMUM	26ms			
TEMPERATURE				
OPERATING	41°F - 140°F (5°C - 60°C)			
NON-OPERATING	-4°F - 149°F (-20°C - 65°C)			
HUMIDITY				
OPERATING/NON-OPERATING	8 - 90% R.H. (No condensation)			
SHIPPING	5 - 90% R.H. (No condensation)			
WET BULB	29°C(operating)/40°C(non-operating)			

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). Prior to opening the anti-static bag, it is recommended that the user ground himself 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. Save the shipping container and packing material for possible use later.

HANDLING AND MOUNTING CONSIDERATIONS

- Installation and mounting of these drives is specific to the application environment.
- Handle drive only by the edges. When handling or mounting, take care not to apply any pressure to the top cover.
- Avoid subjecting the drive to excessive shock. Do not drop the drive, even a small distance onto a tabletop or other hard surface can damage drive. When mounting the drive, do so in such a fashion that the drive will be isolated from excessive shock.
- Do not mount in an environment where the temperature of the drive's top cover will exceed 65°C. (During operation, the temperature of the top cover can rise 15°C above ambient).
- Do not disassemble, modify or repair drive.
- A rattle heard when the drive is moved is normal and not a sign of failure.

INTERFACE CONNECTOR

Drive Side Connector	DDK Ltd, FF19A-40B-R11b
Recommended host side FPC	1. Width: 20.50 ±0.07mm 2. Thickness:0.20 ±0.03mm 3. Length: 90mm (max) 4. Impedance: Typical 50ohm 5. Plating: Gold over Nickel plating (note 1) 6. Adhesive: Heat-hardened adhesive
Connector Durability (note 2)	20 times
FPC Holding fource (note 3)	Typ: 17[N] Min: 5[N]

* Do not pull out FPC with the connector locked.
* Do not lock without FPC

Notes:

1. To avoid Sn whisker

2. In horizontal direction with FPC of 0.20mm in thickness and with the same connector and FPC

3. In horizontal direction with FPC of 0.20mm in thickness and with the same connector and FPC after pulling out repeatedly

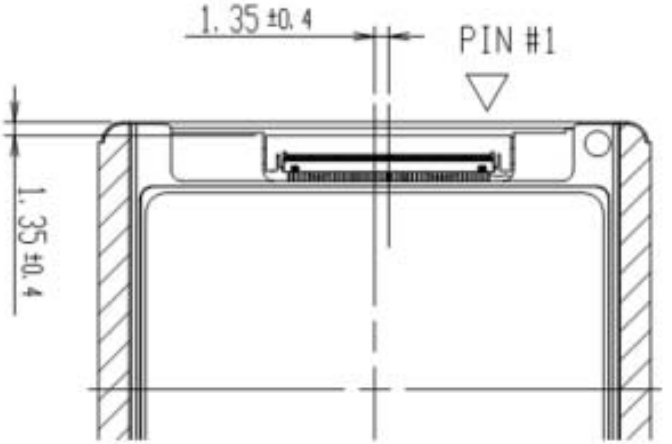

FIGURE 1 – INTERFACE CONNECTOR

DEVELOPER SUPPORT

Toshiba Storage Device Division (SDD) the industry pioneer in small form factor storage supports developers who are looking for small form factor HDD's that deliver the unbeatable combination of high-performance and high-capacity storage. Toshiba HDD's can be found "under the hood" of some of today's hottest portable products. If you are interested in discussing your product application with us please contact us.

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CONNECTOR CABLING INFORMATION

The following table describes all of the pins on the Task File Interface:

PIN	SIGNALS	PIN	SIGNALS
1	RESERVED	2	RESERVED
3	- RESET	4	GROUND
5	DD7	6	DD8
7	DD6	8	DD9
9	DD5	10	DD10
11	DD4	12	DD11
13	DD3	14	DD12
15	DD2	16	DD13
17	DD1	18	DD14
19	DD0	20	DD15
21	GROUND	22	DMARQ
23	GROUND	24	- DI0W STOP
25	-DIOR -HDMARDY HSTROBE	26	GROUND
27	IORDY -DMARDY DSTROBE	28	GROUND
29	DMACK	30	INTRQ
31	DA1	32	- PDIAG/-CBLID
33	DA0	34	DA2
35	-CS0	36	-CS1
37	- DASP	38	+3.3V
39	+3.3V	40	RESERVED

Note: "-" in front of signal name indicates negative logic.