TOSHIBA
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Solid State Drives
SG2 Series
Product Brief

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1. SCOPE

This document describes the specifications of the following model.

1.1   2.5inch Case Type

Product Number	Capacity
THNSxB030GBSJ	30 GB
THNSxB062GBSJ	62 GB

1.2   Half Slim Type

Product Number	Capacity
THNSxB030GMSJ	30 GB
THNSxB062GMSJ	62 GB

1.3   mSATA Type

Product Number	Capacity
THNSxB030GMCJ	30 GB
THNSxB062GMCJ	62 GB

2. GENERAL DESCRIPTION

The drive features an ATA-8 and Serial ATA revision 2.6 interface embedded controller that requires a simplified adapter board for interfacing to a Serial ATA or Serial ATA compatible bus. The drive is distinctive for its small and light body .

The drive has no mechanical moving parts.

The drive is a memory storage device using NAND Flash Memories with high performance and reliability.

3.   **KEY FEATURES**

- High capacity in smallest size

    ✧   Accommodating formatted capacity of 30/62 GB.

    ✧   Slim and light design.

- Fast access and fast transfer rate

    ✧   Interface speed up to 3 gigabits per second and maximum memory transfer 180 megabytes per second in read, 50 megabytes per second in write.

    ✧   Read cache and write cache enhancing system throughput.

- Intelligent Interface

    ✧   ATA-8 ACS2 and Serial ATA revision 2.6 interface specifications supported.

    ✧   Translation mode which enables any drive configuration.

    ✧   Support 28 bit LBA (Logical Block Address) mode commands and 48 bit LBA mode commands.

    ✧   Multi word DMA, Ultra-DMA modes and Advanced PIO mode settings / commands supported.

    ✧   Data Set Management command set supported.

- Data integrity

    ✧   Automatic retries and corrections for read errors.

    ✧   The drive has a capability of FDE(Full Disk Encryption) function. (Optional)

        Note: Standard model isolates FDE circuit.

- High reliability

    ✧   Shock (operating/non-operating) up to 1500G.

- Low power consumption

    ✧   Low power consumption by Adaptive Power Mode.

    ✧   Low power consumption by Serial ATA Device Initiated Power Management.

4.   **BASIC SPECIFICATION**

Product Number	THNSNB030GBSJ THNSNB030GMSJ THNSNB030GMCJ	THNSNB062GBSJ THNSNB062GMSJ THNSNB062GMCJ
Formatted Capacity (gigabytes)	30	62
Total Number of User Addressable Sectors in LBA Mode	58,626,288	121,138,416

5.   **PERFORMANCE**

Host Transfer rate	300 Mbytes / sec
Maximum Data Read	180 Mbytes / sec
Maximum Data Write	50 Mbytes / sec

6. **POWER REQUIREMENTS**

6.1   Supply Voltage

6.1.1   2.5inch Case Type & Half Slim Type

Allowable voltage	5.0V $\pm$5%
Allowable noise/ripple	100 mV p-p or less
Allowable supply rise time	2 –100 msec

Note) Recommended host suppling capavility for the drive is 1.5 A .
Note) The drive has over current protect circuit. (Rated current: 3.15A)

6.1.2   mSATA Type

Allowable voltage	3.3V $\pm$5%
Allowable noise/ripple	100 mV p-p or less
Allowable supply rise time	2 –100 msec

Note) Recommended host suppling capavility for the drive is 1.5 A .
Note) The drive has over current protect circuit. (Rated current: 3.15A)

6.2   Power Consumption

6.2.1   2.5inch Case Type & Half Slim Type

Operation (@25℃)	THNSNB030GBSJ THNSNB030GMSJ (30 GB)	THNSNB062GBSJ THNSNB062GMSJ (62 GB)
Read	1.4W Typ.	1.5W Typ.
Write	1.7W Typ.	1.8W Typ.
Idle (note 1)	55mW Typ.	55mW Typ.
Standby (note 2)	55mW Typ.	55mW Typ.
Sleep (note 2)	55mW Typ.	55mW Typ.

6.2.2   mSATA Type

Operation (@25℃)	THNSNB030GMCJ (30 GB)	THNSNB062GMCJ (62 GB)
Read (note 3)	1.3W Typ	1.4W Typ
Write (note 3)	1.6W Typ	1.7W Typ
Idle (note 1)	55mW Typ.	55mW Typ.
Standby (note 2)	55mW Typ.	55mW Typ.
Sleep (note 2)	55mW Typ.	55mW Typ.

(note1)   The values are based on using S-ATA power management features. The Slumber mode is used for the idle mode power consumption measurements. And this mode may execute background write operation then the drive power consumption temporally changes to write power.

(note 2)   The values are based on using S-ATA power management features. The Slumber mode is used for Standby and Sleep modes power consumption measurements.
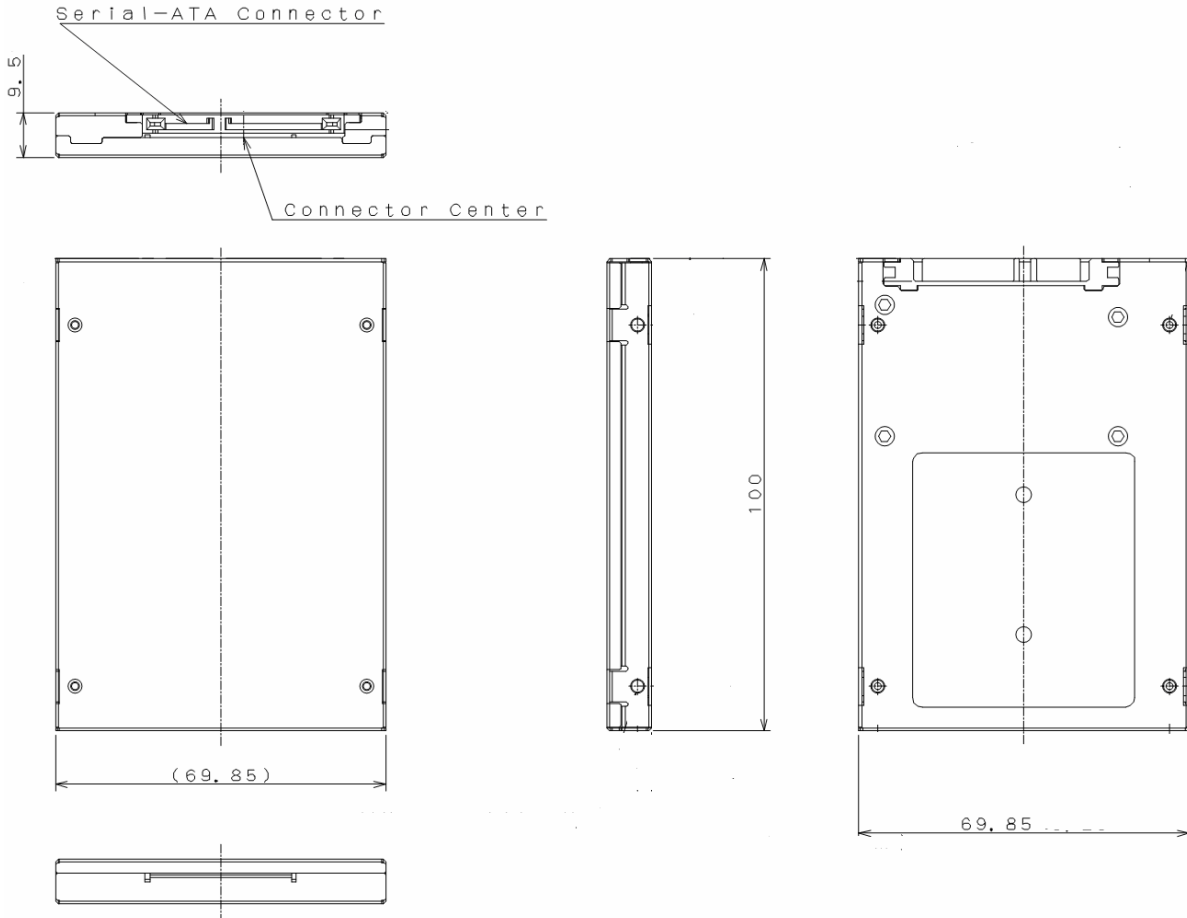
(note 3)   The Read/Write current is depend on data transfer rate. This chart shows Read 220MB/s and Write 180MB/s cases.

7. **MECHANICAL SPECIFICATIONS**

7.1   2.5inch Case Type

7.1.1   **Dimension**

Width	69.85 mm
Height	9.5 mm
Length	100.0 mm

7.1.2   **Weight**

Weight
36 gram (typ.)

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nit: mm

7.2   Half Slim Type

7.2.1   Dimension

Width	54 mm
Height	4 mm
Length	39 mm

Back Side

Front Side

54.00

Connector height
4.00

Form factor height
4.00 Max
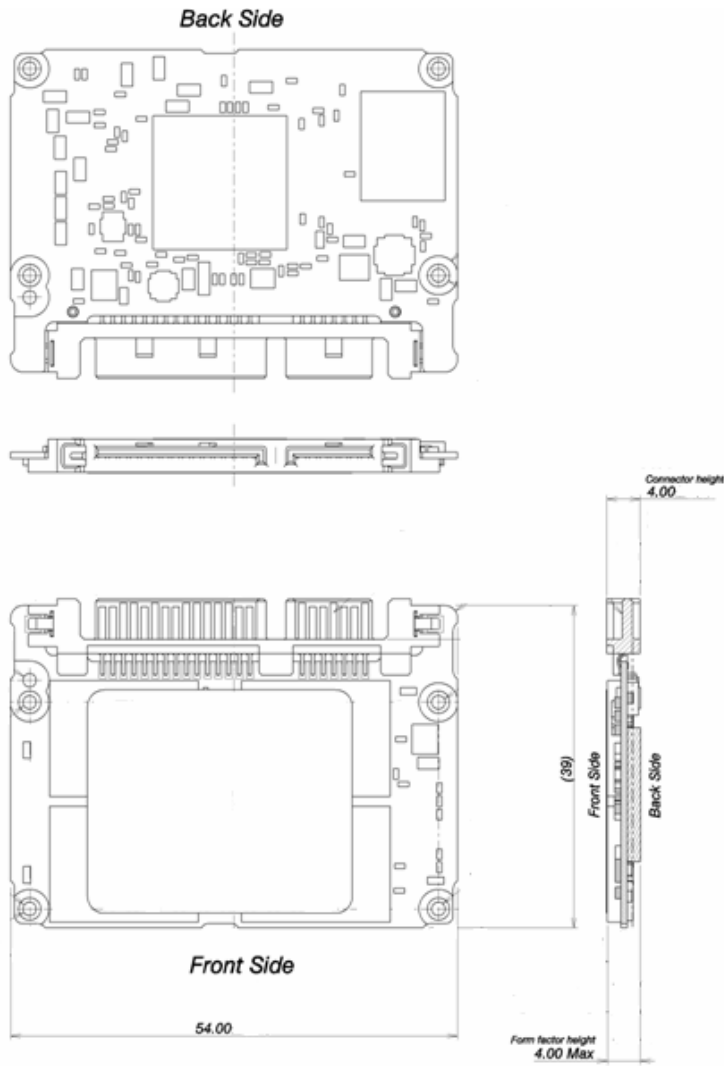
7.2.2   Weight

Weight
9 gram (typ.)

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7.3 *mSATA Type*

7.3.1 Dimension

Width	30 mm
Height	4.75 mm
Length	50.95 mm
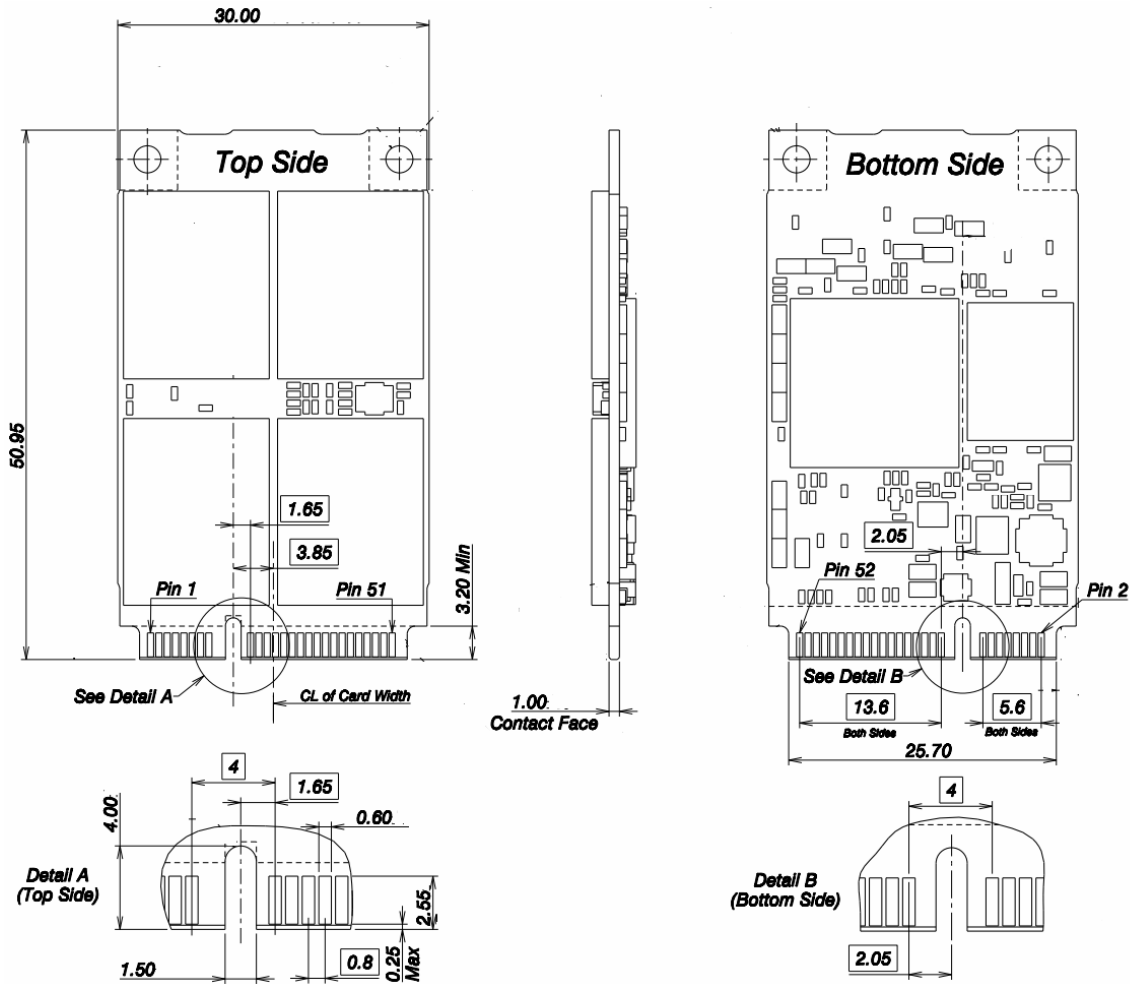
7.3.2 Weight

Weight
9 gram (typ.)

8. ENVIRONMENTAL LIMITS

8.1 Temperature and Humidity

8.1.1 Temperature

Operating	0℃ (Tc) - 70℃ (Tc) Gradient 30℃ (Ta) / Hour maximum
Non- operating	- 40℃- 85℃ Gradient 30℃ / Hour maximum
Under shipment	- 40℃- 85℃ Gradient 30℃ / Hour maximum (Packed in Toshiba's original shipping package)

Note: Ta: Ambient Temperature, Tc: Temperature of all components

8.1.2 Humidity

Operating	8% - 90% R.H. (No condensation)
Non- operating	8% - 95% R.H. (No condensation)
Under shipment	5% - 95% R.H. (Packed in Toshiba's original shipping package)

8.2 Vibration

Operating	20G Peak, 10~2,000Hz, (20min /Axis)x3 Axis
Non operating	20G Peak, 10~2,000Hz, (12Cycle /Axis)x3 Axis, x20min.

8.3 Shock

Operating	[1500G] 0.5 msec half sine wave
Non-operating	
Under shipment	100 cm free drop Apply shocks in each direction of the drive's three mutually perpendicular axes, one axis at a time. (Packed in Toshiba's original shipping package)

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