

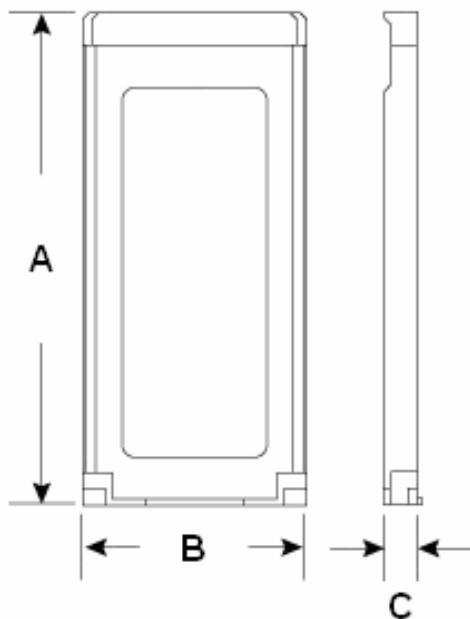
# TS8G~32GSSD34E-M

8GB~32GB ExpressCard34 SSD

## Description

The ExpressCard™ SSD (Solid State Disk) is small in size, has a huge capacity and low power consumption making it perfect for use as a mobile storage solution in notebook computer with ExpressCard™ slot.

## Outline



## Dimensions

| Side | Millimeters  | Inches      |
|------|--------------|-------------|
| A    | 75.00 ± 1.00 | 2.95 ± 0.04 |
| B    | 34.00 ± 1.00 | 1.34 ± 0.04 |
| C    | 5.00 ± 1.00  | 0.20 ± 0.04 |

## Features

- RoHS compliant products
- High-speed USB 2.0 specification, True Plug and Play functionality
- Fully compatible with ExpressCard™ standards and Operating Systems (OS) that support the USB standard
- Non-volatile Flash Memory for outstanding data retention
- Built-in ECC (Error Correction Code) functionality and wear-leveling algorithm ensures highly reliable of data transfer
- Compatible with Windows Vista and supports ReadyBoost function
- Low Power Consumption
- Shock resistance

## System Requirement

- Hardware: An available ExpressCard™ slot on desktop or notebook computer
- Operating System: Windows® 2000, Windows® XP, Windows® Vista, Mac™ OS 10.4 or later, and Linux™ Kernel 2.4 or later

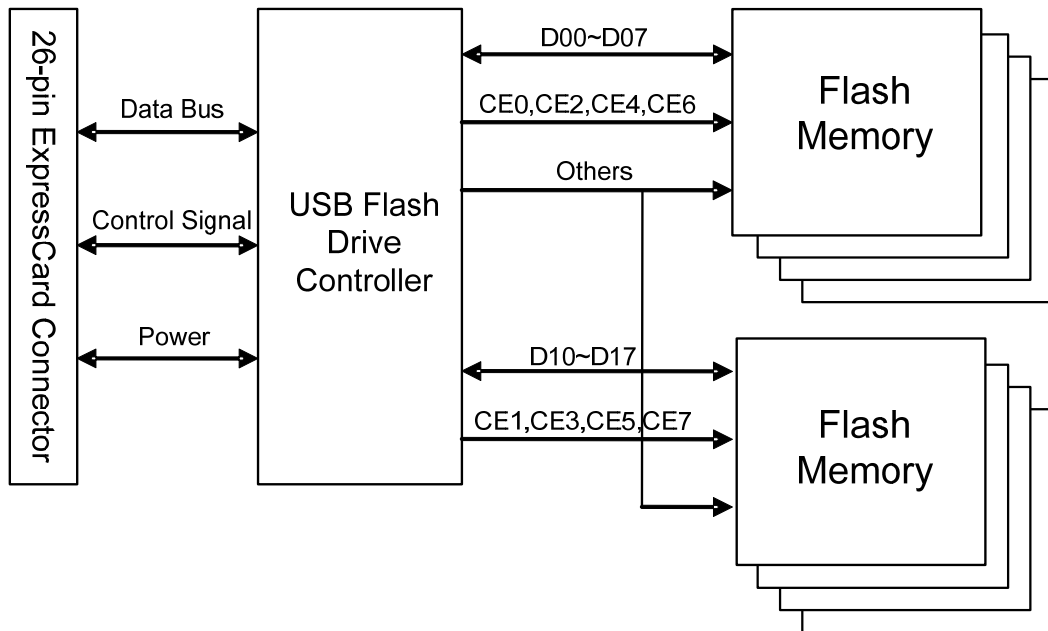
## Order Information

| Transcend P/N | Capacity |
|---------------|----------|
| TS8GSSD34E-M  | 8GB      |
| TS16GSSD34E-M | 16GB     |
| TS32GSSD34E-M | 32GB     |

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## Block Diagram



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## Pinouts

| Pin No. | Pin Name |
|---------|----------|
| 01      | GND      |
| 02      | USB D-   |
| 03      | USB D+   |
| 04      | CPUSB    |
| 05      | RSVD1    |
| 06      | RSVD2    |
| 07      | RSVD3    |
| 08      | SMBCLK   |
| 09      | SMBDATA  |
| 10      | 1.5V     |
| 11      | WAKE     |
| 12      | 3.3VAUX  |
| 13      | PERST    |
| 14      | 3.3V     |
| 15      | 3.3V     |
| 16      | CLKREQ   |
| 17      | CPPE     |
| 18      | REFCLK-  |
| 19      | REFCLK+  |
| 20      | GND      |
| 21      | PERN0    |
| 22      | PERP0    |
| 23      | GND      |
| 24      | PETN0    |
| 25      | PETP0    |
| 26      | GND      |

## Pin Identification

| Symbol  | Function  |
|---------|---|
| PETP0   |   |
| PETN0   |   |
| PERP0   | PCI Express x1 interface  |
| PERN0   |   |
| REFCLK+ |   |
| REFCLK- | PCI Express reference clock   |
| PERST   | PCI Express Reset   |
| USB D+  |   |
| USB D-  | USB serial data interface   |
| SMBDATA |   |
| SMBCLK  | SMBus   |
| CPPE    | PCI Express interface presence detect   |
| CLKREQ  | Request that REFCLK be enabled  |
| WAKE    | Request that the host interface return to full operation and respond to PCI Express |
| CPUSB   | USB interface presence detect   |
| 3.3V    | Primary voltage source  |
| 3.3VAUX | Auxiliary voltage source  |
| 1.5V    | Secondary voltage source  |
| GND     | Ground  |
| RSVD1   |   |
| RSVD2   | Reserve data pin  |
| RSVD3   |   |

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## Specifications

| Environment       |                 |                 |
|-------------------|-----------------|-----------------|
| Capacity          |                 | 8GB~32GB        |
| Temperature       | Operating       | 0 °C to 70 °C   |
|                   | Non-Operating   | -40 °C to 85 °C |
| Power Requirement | Voltage         | DC 3.3V ± 10%   |
| Power Consumption | Read Current    | 96.6 mA         |
|                   | Write Current   | 104.8 mA        |
|                   | Idle Current    | 43.8 mA         |
|                   | Suspend Current | 500 uA          |
| Dimension         | LxWxH           | 75mmx34mmx5mm   |
| Weight            |                 | 19 g (Max.)     |
| Data Retention    |                 | 10 years        |
| MTBF              |                 | 2,000,000 hours |
| Certificates      |                 | CE, FCC, BSMI   |

### DC Characteristics

| Symbol              | Parameter  | Min.         | Max.          | Unit |
|---------------------|--|--------------|---------------|------|
| $V_{IH\_TTL}$       | TTL Input High Voltage                                   | 2            | $0.3+V_{CC3}$ | V    |
| $V_{IL\_TTL}$       | TTL Input Low Voltage                                    | -0.3         | 0.8           | V    |
| $V_{OH\_TTL}$       | TTL Output High Voltage                                  | $0.9V_{CC3}$ |               | V    |
| $V_{OL\_TTL}$       | TTL Output Low Voltage                                   |              | 0.45          | V    |
| $I_{OH\_TTL}$       | TTL Output High Current                                  | -4           |               | mA   |
| $I_{OL\_TTL}$       | TTL Output Low Current                                   |              | 4             | mA   |
| $V_{IH\_USB}$       | USB Input High Voltage for Low-/Full-Speed               | 2.0          |               | V    |
| $V_{IL\_USB}$       | USB Input Low Voltage for Low-/Full-Speed                |              | 0.8           | V    |
| $V_{I\_USB\_CM}$    | Differential Common Mode Input Range for Low-/Full-Speed | 0.8          | 2.5           | V    |
| $V_{I\_USB\_HSSQ}$  | USB High-Speed squelch Input Detection Threshold         | 0.1          | 0.15          | V    |
| $V_{I\_USB\_HSDSC}$ | USB High-Speed disconnect Input Detection Threshold      | 0.525        | 0.625         | V    |
| $V_{I\_USB\_HSCM}$  | USB High-Speed Signaling                                 | -0.05        | 0.5           | V    |
| $V_{OH\_USB}$       | USB Output High Voltage for Low-/Full-Speed              | 2.8          | 3.6           | V    |
| $V_{OL\_USB}$       | USB Output Low Voltage for Low-/Full-Speed               |              | 0.3           | V    |
| $V_{OH\_USB\_HS}$   | USB Output High Voltage for High-Speed                   | 0.36         | 0.44          | V    |
| $V_{OL\_USB\_HS}$   | USB Output Low Voltage for High-Speed                    | -0.01        | 0.01          | V    |
| $I_{OH\_USB}$       | USB Output High Current for Low-/Full-Speed              | -10          |               | mA   |
| $I_{OL\_USB}$       | USB Output Low Current for Low-/Full-Speed               |              | 10            | mA   |
| $I_{OH\_USB\_HS}$   | USB Output High Current for High-Speed                   | -40          |               | mA   |
| $I_{OL\_USB\_HS}$   | USB Output Low Current for High-Speed                    |              | 40            | mA   |

### AC Characteristics

| Symbol            | Parameter            | Min.            | Typ.            | Max.            | Unit |
|-------------------|----------------------|-----------------|-----------------|-----------------|------|
| TP <sub>ILH</sub> | Input Rising Delay   | 0.61<br>(0.8pF) | 0.72<br>(2.4pF) | 0.92<br>(4.8pF) | ns   |
| TP <sub>IHL</sub> | Input Falling Delay  | 0.88<br>(0.8pF) | 1.03<br>(2.4pF) | 1.24<br>(4.8pF) | ns   |
| TP <sub>OLH</sub> | Output Rising Delay  | 2.40<br>(10pF)  | 3.42<br>(30pF)  | 4.88<br>(60pF)  | ns   |
| TP <sub>OHL</sub> | Output Falling Delay | 2.61<br>(10pF)  | 3.62<br>(30pF)  | 5.03<br>(60pF)  | ns   |
| TR                | Output Rising Delay  | 2.26<br>(10pF)  | 4.45<br>(30pF)  | 7.83<br>(60pF)  | ns   |
| TF                | Output Falling Delay | 1.90<br>(10pF)  | 3.63<br>(30pF)  | 6.23<br>(60pF)  | ns   |

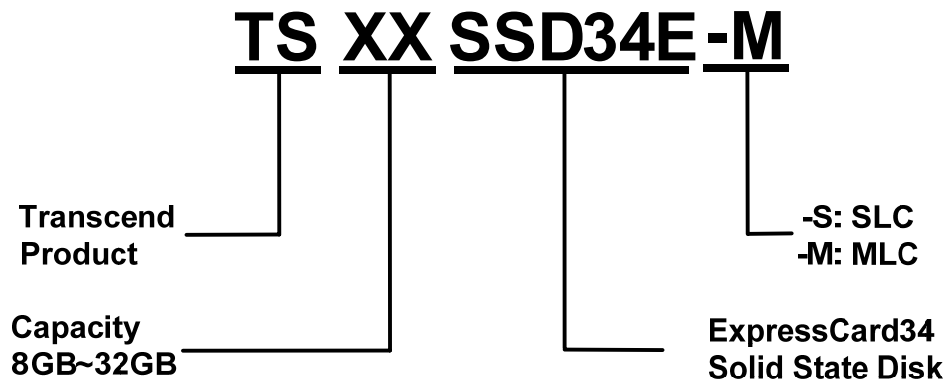
### Absolute Maximum Ratings

| Symbol               | Parameter                     | Min. | Max. | Unit |
|----------------------|-------------------------------|------|------|------|
| T <sub>STORAGE</sub> | Storage Temperature           | -40  | 85   | °C   |
| T <sub>A</sub>       | Ambient Operating Temperature | 0    | 75   | °C   |
| V <sub>CC3</sub>     | 3.3V Supply Voltage           | -0.3 | 3.6  | V    |
| V <sub>CC18</sub>    | 1.8V Supply Voltage           | -0.3 | 2    | V    |
| V <sub>in3.3</sub>   | 3.3V Buffer Input Voltage     | -0.3 | 3.6  | V    |
| V <sub>in3/5</sub>   | 3.3V/5V Buffer Input Voltage  | -0.3 | 5    | V    |
| V <sub>in1.8</sub>   | 1.8V Buffer Input Voltage     | -0.3 | 2    | V    |

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## Naming Rule



Above technical information is based on industry standard data and tested to be reliable. However, Transcend makes no warranty, either expressed or implied, as to its accuracy and assumes no liability in connection with the use of this product. Transcend reserves the right to make changes in specifications at any time without prior notice.

**Transcend**  
*Exceeding Your Expectations*

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