

Low Capacitance Bidirectional TVS/ESD Protection Diode

DESCRIPTION

The GESD3B3CM is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as high speed line applications.

This device has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

FEATURES

- ✧ IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ Peak power dissipation: 500W (8/20 μs)
- ✧ Protects one Vcc or data line
- ✧ Low clamping voltage
- ✧ Working voltages : 3.3V
- ✧ Low leakage current
- ✧ Low capacitance

MACHANICAL DATA

- ✧ SOD-323 package
- ✧ Flammability Rating: UL 94V-0
- ✧ High temperature soldering guaranteed:
260 $^{\circ}\text{C}$ /10s
- ✧ Packaging: Tape and Reel
- ✧ Reel size: 7 inch

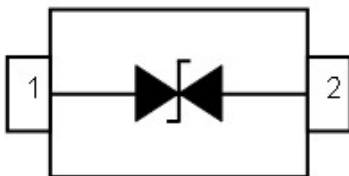
ORDERING INFORMATION

- ✧ Device: GESD3B3CM
- ✧ Package: SOD-323
- ✧ Marking: 2A
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 3,000pcs

APPLICATIONS

- ✧ Cell Phone Handsets and Accessories
- ✧ Microprocessor based equipment
- ✧ Personal Digital Assistants (PDA's)
- ✧ Notebooks, Desktops, and Servers
- ✧ Portable Instrumentation
- ✧ Networking and Telecom
- ✧ Serial and Parallel Ports
- ✧ Peripherals

PIN CONFIGURATION



PACKAGE OUTLINE



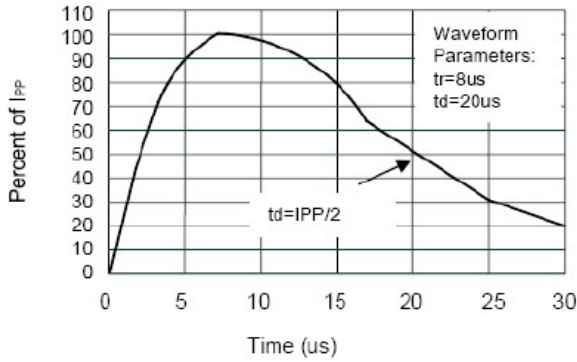
ABSOLUTE MAXIMUM RATING

| Symbol | Parameter | Value | Units |
|------------------|---------------------------------|---------|-------|
| V _{ESD} | ESD per IEC 61000-4-2 (Air) | ±30 | kV |
| | ESD per IEC 61000-4-2 (Contact) | ±30 | |
| P _{PP} | Peak Pulse Power (8/20μs) | 500 | W |
| T _{OPT} | Operating Temperature | -55~150 | °C |
| T _{STG} | Storage Temperature | -55~150 | °C |

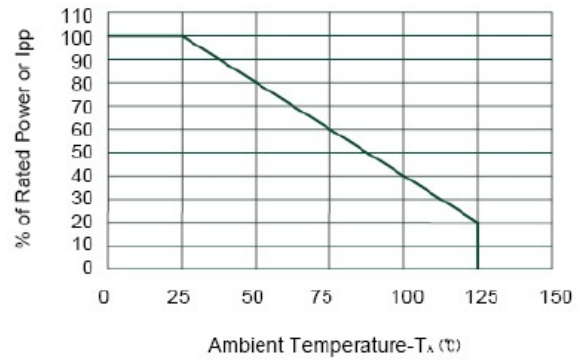
ELECTRICAL CHARACTERISTICS (T_{amb}=25°C)

| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|------------------|---------------------------|--|-----|-----|-----|-------|
| V _{RWM} | Reverse Working Voltage | | | | 3.3 | V |
| V _{BR} | Reverse Breakdown Voltage | I _T = 1mA | 4.0 | | 6.0 | V |
| I _R | Reverse Leakage Current | V _{RWM} = 3.3V | | | 1.0 | μA |
| V _C | Clamping Voltage | I _{PP} = 1A, t _p = 8/20μs | | | 6.5 | V |
| V _C | Clamping Voltage | I _{PP} = 28A, t _p = 8/20μs | | 13 | 18 | V |
| C _J | Junction Capacitance | V _R = 0V, f = 1MHz | | 35 | 45 | pF |

ELECTRICAL CHARACTERISTICS CURVE

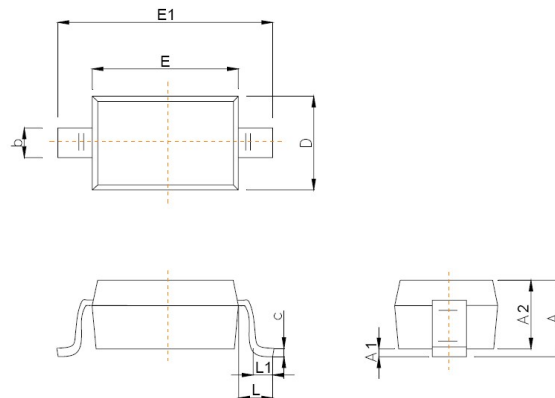


Pulse Waveform

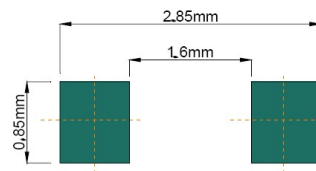


Power Derating Curve

SOD-323 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | |
|--------|---------------------------|-------|
| | Min | Max |
| A | | 1.00 |
| A1 | 0.000 | 0.100 |
| A2 | 0.800 | 0.900 |
| b | 0.250 | 0.350 |
| c | 0.080 | 0.150 |
| D | 1.200 | 1.400 |
| E | 1.600 | 1.800 |
| E1 | 2.500 | 2.700 |
| e | 1.800 | 2.040 |
| L | 0.475 REF | |
| L1 | 0.250 | 0.400 |
| θ | 0° | 8° |



Recommended Pad outline