

DESCRIPTION

The ESD5B5CM is designed to protect voltage sensitive component 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 application.

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

- ✧ ESD per IEC 61000-4-2 ±30 kV (Contact)
- ✧ ESD per IEC 61000-4-2 ±30 kV (Air)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ Peak power dissipation: 400W (8/20μs)
- ✧ Protects one Vcc or data line
- ✧ Low clamping voltage
- ✧ Working voltages : 5V
- ✧ Low leakage current
- ✧ Low capacitance

MACHANICAL DATA

- ✧ SOD-523 package
- ✧ Flammability Rating: UL 94V-0
- ✧ High temperature soldering guaranteed:
260°C/10s
- ✧ Packaging: Tape and Reel
- ✧ Reel size: 7 inch

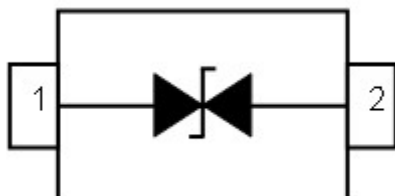
ORDERING INFORMATION

- ✧ Device: ESD5B5CM
- ✧ Package: SOD-523
- ✧ Marking: 0C
- ✧ Material: Halogen free and RoHS compliant
- ✧ 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 (Contact) ESD per IEC 61000-4-2 (Air) | ± 30 ± 30 | kV |
| P_{PP} | Peak Pulse Power (8/20 μ s) | 400 | W |
| T_{OPT} | Operating Temperature | -55~150 | $^{\circ}$ C |
| T_{STG} | Storage Temperature | -55~150 | $^{\circ}$ C |

ELECTRICAL CHARACTERISTICS (Tamb=25 $^{\circ}$ C)

| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|-----------|---------------------------|---------------------------------|-----|-----|-----|---------|
| V_{RWM} | Reverse Working Voltage | | | | 5.0 | V |
| V_{BR} | Reverse Breakdown Voltage | $I_T = 1mA$ | 5.8 | | 7.8 | V |
| I_R | Reverse Leakage Current | $V_{RWM} = 5V$ | | | 1.0 | μ A |
| V_C | Clamping Voltage | $I_{PP} = 1A, t_p = 8/20\mu s$ | | | 9.8 | V |
| V_C | Clamping Voltage | $I_{PP} = 20A, t_p = 8/20\mu s$ | | 15 | 20 | V |
| C_J | Junction Capacitance | $V_R = 0V, f = 1MHz$ | | 33 | 40 | pF |

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20 μ s Waveform per IEC61000-4-5

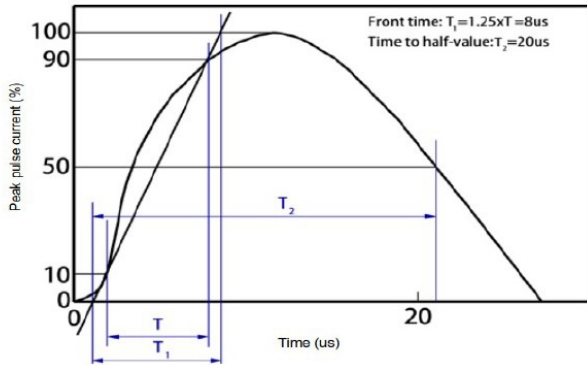


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

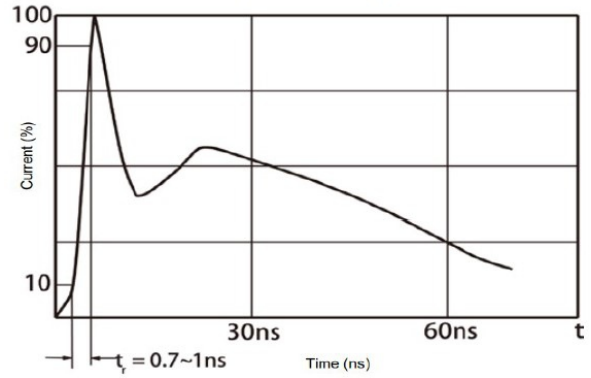


Fig 3 Voltage vs Capacitance

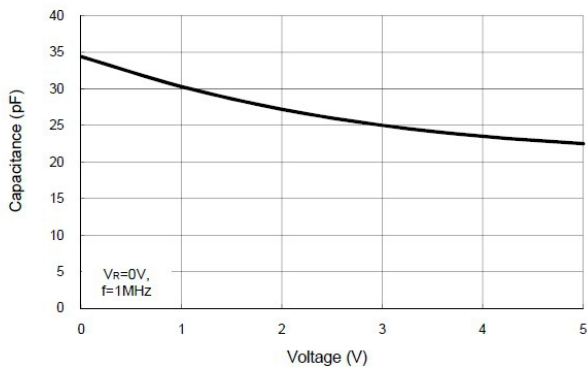
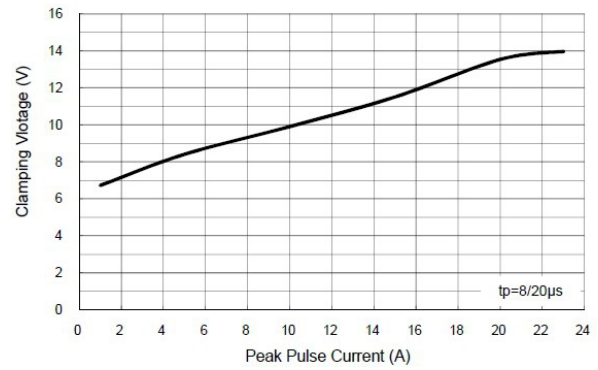
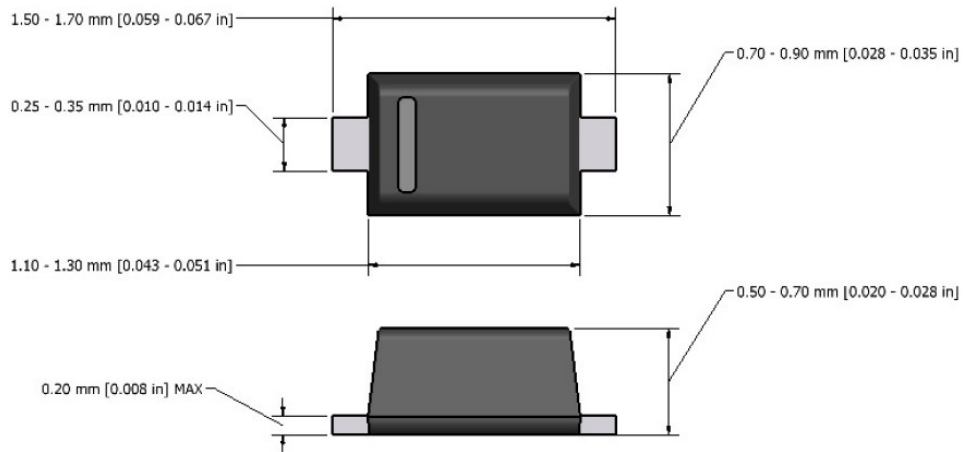


Fig 4 Clamping Voltage vs Peak Pulse Current



SOD-523 PACKAGE OUTLINE DIMENSIONS



Note: Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.