



ESD5B3CM

Bidirectional TVS/ESD Diode Array

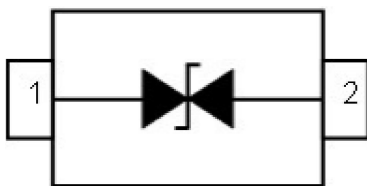
Description

The ESD5B3CM 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).

Ordering Information

- Device:ESD5B3CM
- Package:SOD-523
- Marking:3CM
- Material:Halogen free and RoHS compliant
- Packing:Tape & Reel
- Quantity per reel:3,000pcs

Pin Configuration



Features

- ESD per IEC 61000-4-2 $\pm 30\text{kV}$ (Contact)
- ESD per IEC 61000-4-2 $\pm 30\text{kV}$ (Air)
- IEC61000-4-4(EFT) 40A(5/50ns)
- Peak power dissipation: 400W(8/20 μs)
- Protects one directional I/O line
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- Low capacitance

Mechanical Data

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

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

Package Outline





ESD5B3CM

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2(Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2(Contact)		± 30	kV
Peak Pulse Power(8/20 μ s)	P_{PP}	400	W
Operating Temperature	T_{OPT}	-55~+150	°C
Storage Temperature	T_{STG}	-55~+150	°C

Electrical Characteristics ($T_A=25^{\circ}C$)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	4.0		6.0	V
Reverse Leakage Current	I_R	$V_{RWM}=3.3V$			1.0	μA
Clamping Voltage	V_C	$I_{PP}=1A, t_p=8/20\mu s$			6.5	V
		$I_{PP}=23A, t_p=8/20\mu s$		13	18	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		38	45	pF



Typical Characteristics

Fig1 8/20 μ s Pulse Waveform

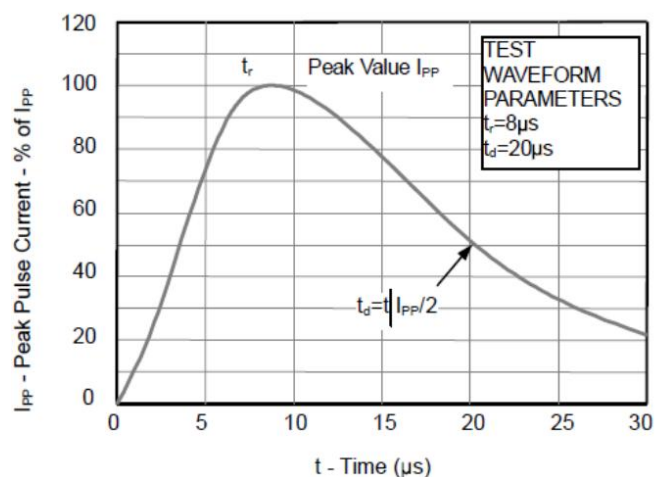


Fig2 Contact Discharge Current Waveform (IEC 61000-4-2)

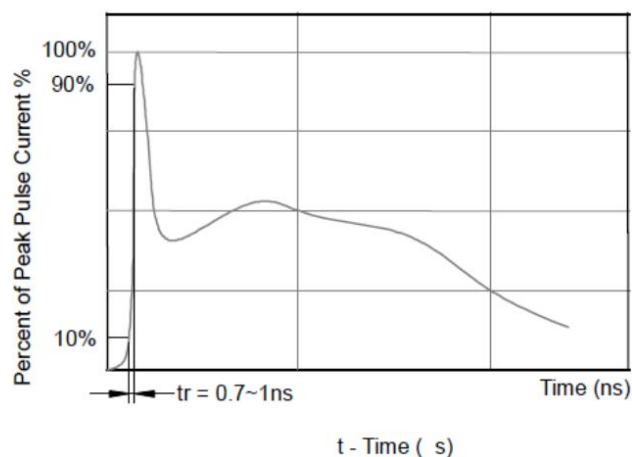


Fig 3 Voltage vs Capacitance

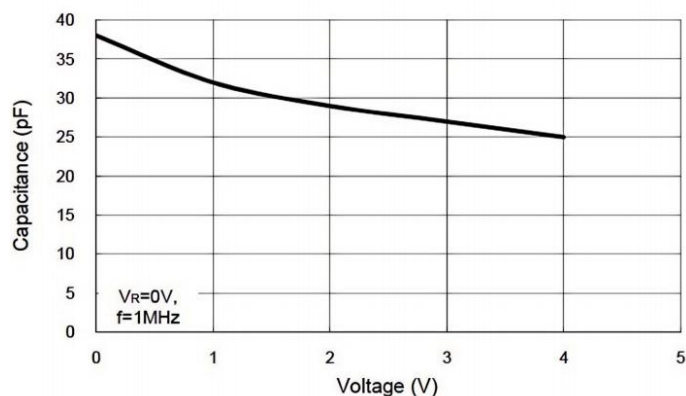
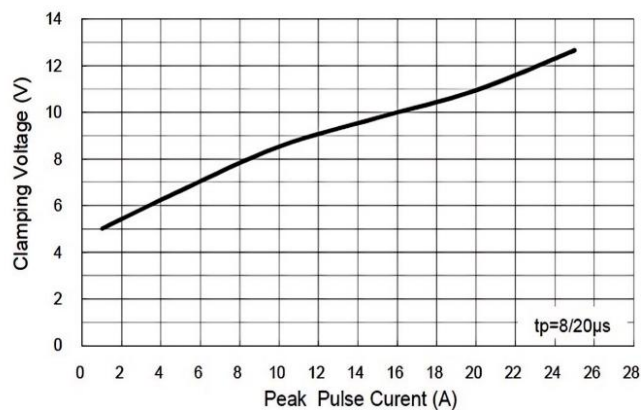


Fig 4 Clamping Voltage vs Peak Pulse Current



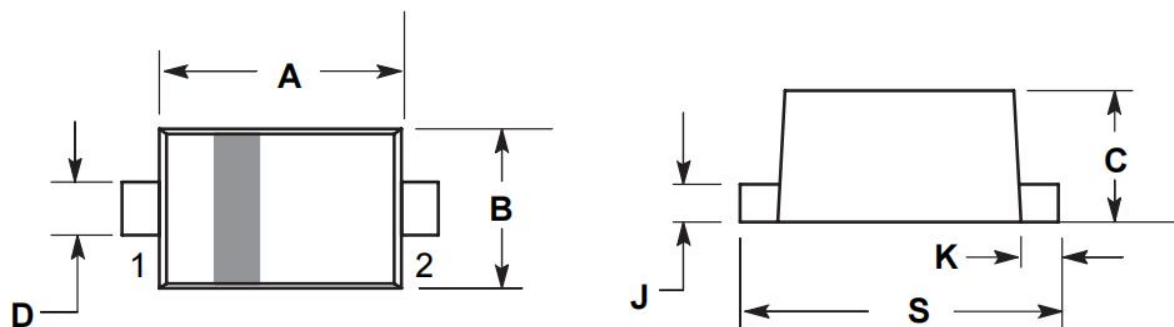


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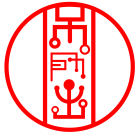
Package Information

SOD-523

Dimensions in mm



Symbol	Dimensions In Millimeters		
	Min	Nom	Max
A	1.10	1.20	1.30
B	0.70	0.80	0.90
C	0.50	0.60	0.70
D	0.25	0.30	0.35
J	0.07	0.14	0.20
K	0.15	0.20	0.25
S	1.50	1.60	1.70



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