ESD5B5CM

Bidirectional TVS/ESD Diode Array

Description

The ESD5B5CM 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

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

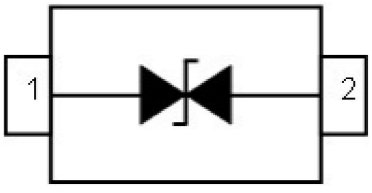
Ordering Information

- Device:ESD5B5CM
- Package:SOD-523
- Marking:ↃC
- 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

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(8/20μs)	P_{PP}	400	W
Operating Temperature	T_{OPT}	-55~+150	℃
Storage Temperature	T_{STG}	-55~+150	℃

Electrical Characteristics (T_A=25℃)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	5.8		7.8	V
Reverse Leakage Current	I_R	V_{RWM}=5V			1.0	μA
Clamping Voltage	V_C	I_{PP}=1A,t_P=8/20μs			9.8	V
		I_{PP}=20A,t_P=8/20μs		15	20	V
Junction Capacitance	C_J	V_R=0V,f=1MHz		33	40	pF

Typical Characteristics

Fig1 8/20us Pulse Waveform

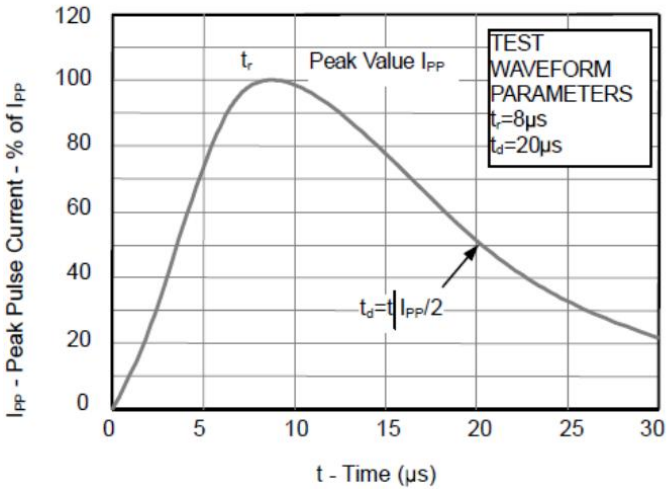


Fig2 Contact Discharge Current Waveform (IEC 61000-4-2)

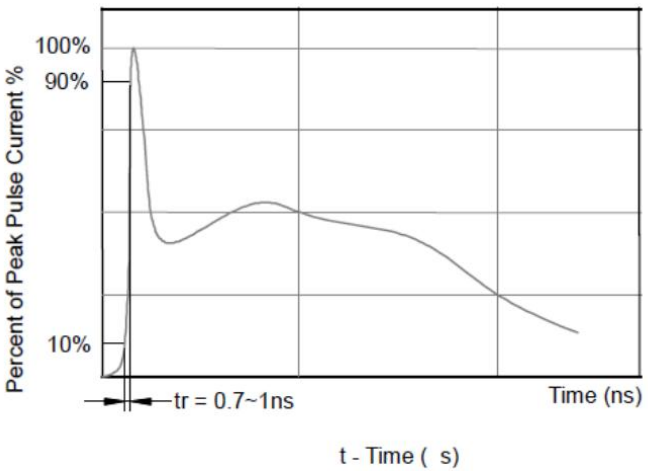


Fig 3 Voltage vs Capacitance

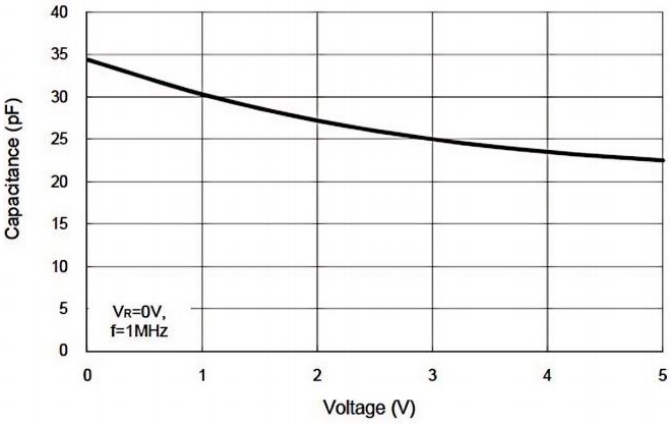
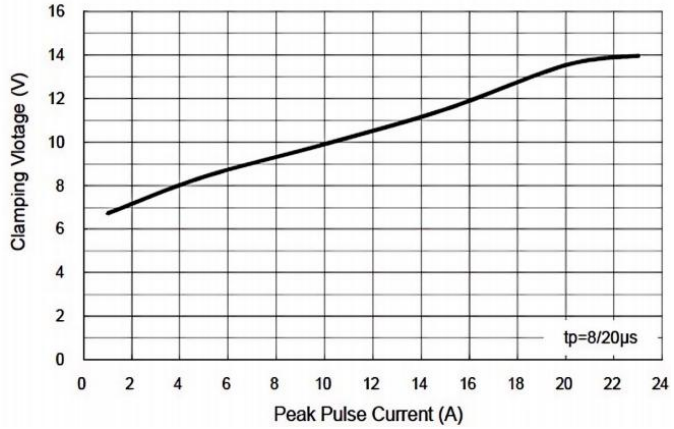


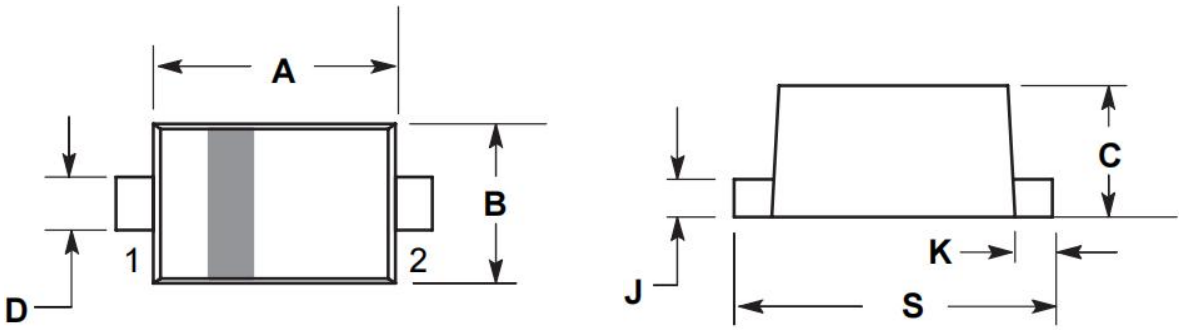
Fig 4 Clamping Voltage vs Peak Pulse Current



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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