



Description

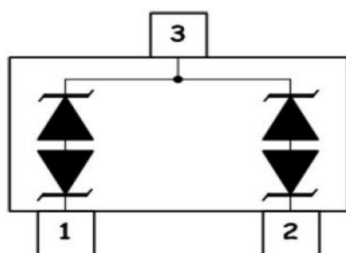
The SM03CM Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

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

Ordering Information

- Device: SM03CM
- Package: SOT-23
- Marking: 3CM
- Material: Halogen free & RoHS compliant
- Packing: Tape & Reel
- Quantity per reel: 3,000 pcs

Pin Configuration



Features

- IEC61000-4-2(ESD) $\pm 30\text{kV}(\text{air})$
 $\pm 30\text{kV}(\text{contact})$
- IEC61000-4-4(EFT) 40A (5/50ns)
- Peak power dissipation: 500W (8/20 μs)
- Working voltage: 3.3V
- Low clamping voltage
- Low leakage current
- Protects two bidirectional lines

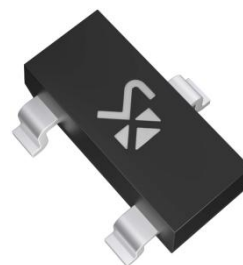
Mechanical Data

- SOT-23 package
- Flammability rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260°C/10s
- 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





Absolute Maximum Rating

Parameter	Symbol	Value	Units
ESD per IEC 61000-4-2(Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2(Contact)		± 30	
Peak Pulse Power(8/20 μ s)	P_{PP}	500	W
Operating Temperature	T_{OPT}	-55~+125	$^{\circ}C$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}C$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	3.8		5.0	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
		$I_{PP}=34A, t_p=8/20\mu s$		14	18	
Junction Capacitance	C_J	$V_R=0V, f=1MHz$			65	pF

Electrical Characteristics Curve

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

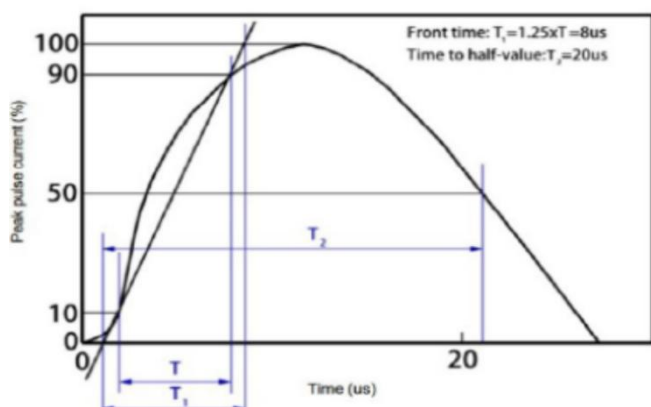


Fig3 Voltage vs Capacitance

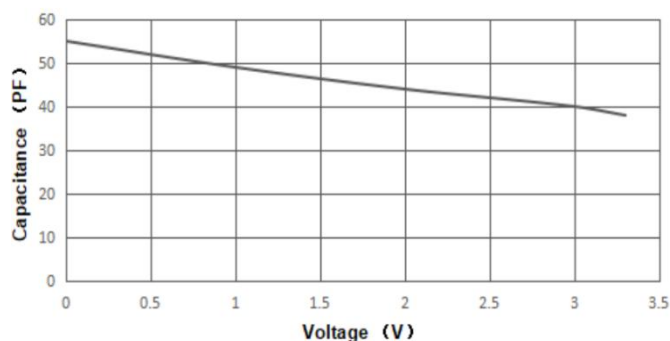


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

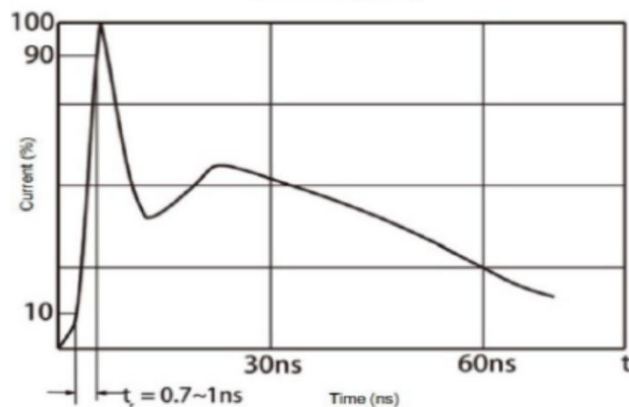
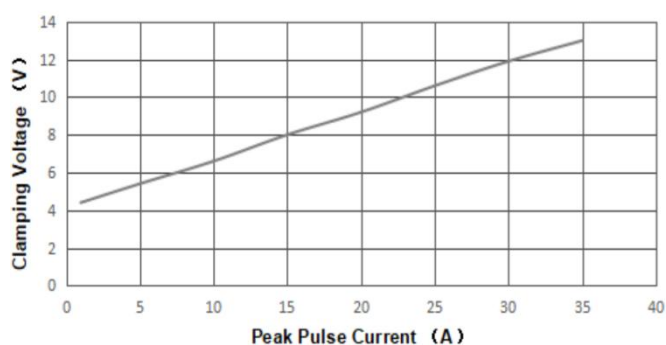


Fig4 Clamping Voltage vs Peak Pulse Current

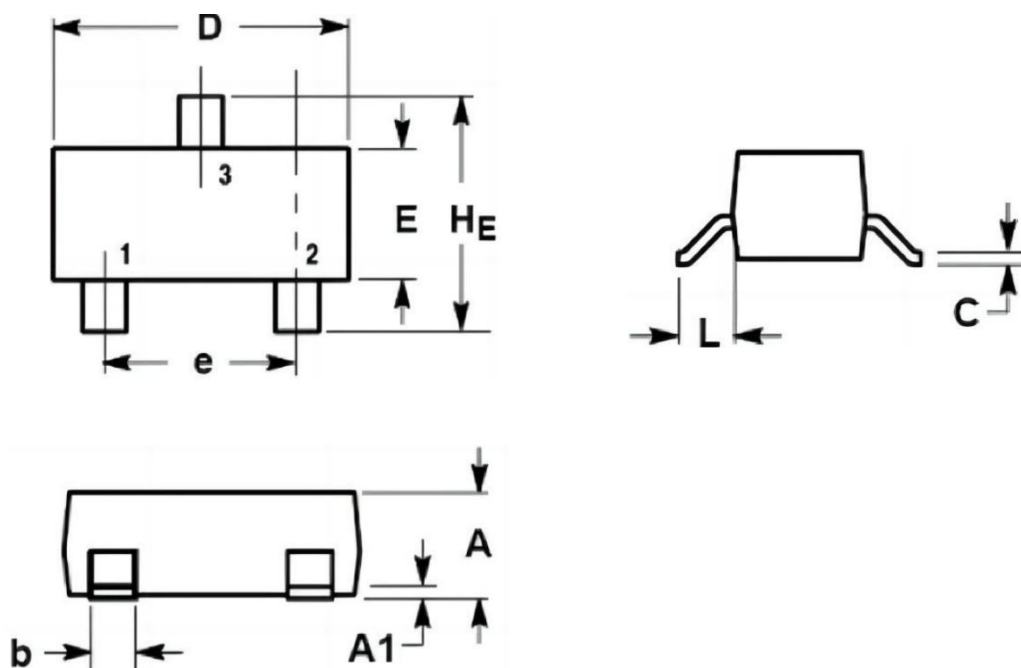




Package Information

SOT-23

Dimensions in mm



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104



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