SM03 THUR SM36

Unidirectional TVS Diode Array

Description

The SMxx 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).

Features

- IEC61000-4-2(ESD) ±30kV(air)
  ±30kV(contact)
- IEC61000-4-4(EFT) 40A (5/50ns)
- Peak power dissipation: 450W(tp=8/20μs)
- Protects two unidirectional lines
- Low clamping voltage
- Working voltage: 3.3V to 36V
- Low leakage current

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
- MSL 1

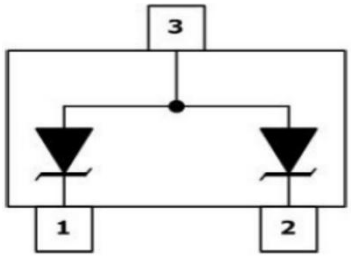
Ordering Information

- Device:SMxx
- Package:SOT-23
- Material:Halogen free and RoHS compliant
- Packing:Tape & Reel
- Quantity per reel:3000pcs

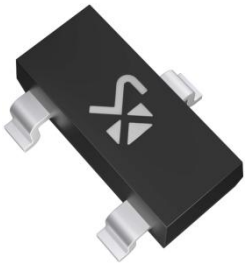
Applications

- Cell Phone Handsets and Accessories
- Microprocessorr 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	Units
ESD per IEC 61000-4-2(Air)	V_{ESD}	±30	kV
ESD per IEC 61000-4-2(Contact)		±30	
Peak Pulse Power(8/20μs)	P_{PP}	450	W
Operating Temperature	T_{OPT}	-55~+150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Soldering Temperature	T_L	260(10 sec.)	℃

Electrical Characteristics (T_A=25℃)

Part Number	Device Marking	V_{RWM} (V) (max.)	V_B (V) (min.)	I_T (mA)	V_C@1A (V) (max.)	V_C (V) (max.)	(@A)	I_R (μA) (max.)	C_J (pF) (max.)
SM03	M03	3.3	4.0	1	7.5	16.0	25	40	400
SM05	M05	5.0	6.0	1	9.8	18.0	24	10	200
SM08	M08	8.0	8.5	1	13.4	24.0	20	2	180
SM12	M12	12.0	13.3	1	19.0	32.0	17	1	100
SM15	M15	15.0	16.7	1	24.0	38.0	13	1	80
SM18	M18	18.0	20.0	1	29.0	45.0	10	1	70
SM20	M20	20.0	22.3	1	35.0	50.0	9	1	52
SM24	M24	24.0	26.7	1	43.0	52.0	9	1	50
SM36	M36	36.0	40.0	1	60.0	75.0	6	1	35

Electrical Characteristics Curve

Fig1. 8/20us Pulse Waveform

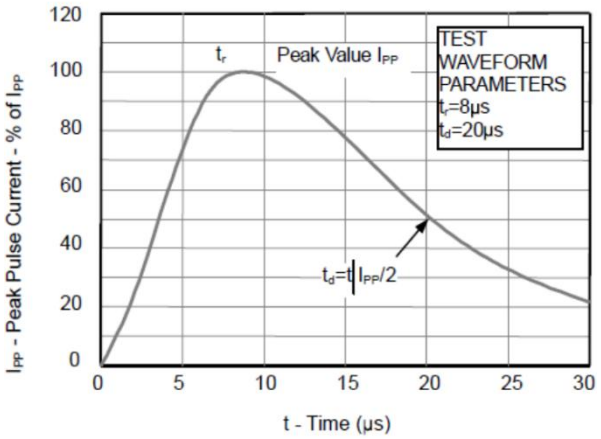


Fig2. Contact Discharge Current Waveform (IEC 61000-4-2)

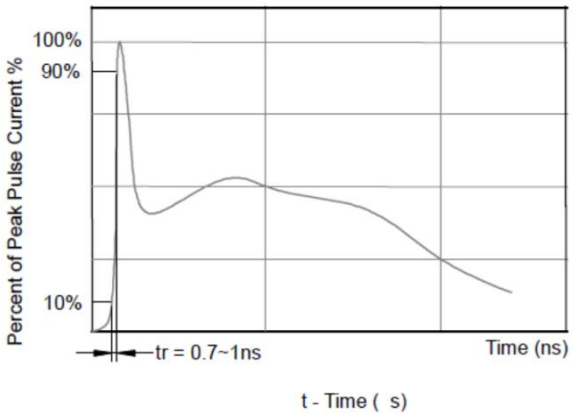


Fig3 Voltage vs Capacitance

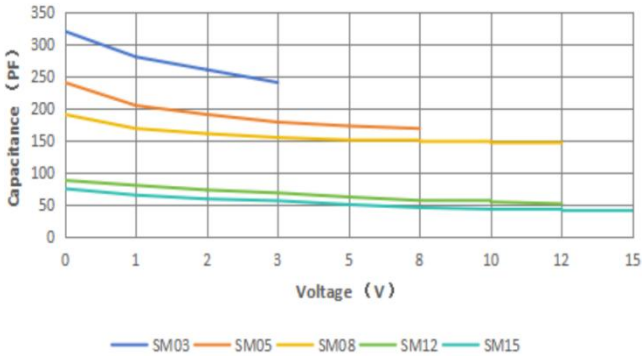


Fig4 Voltage vs Capacitance

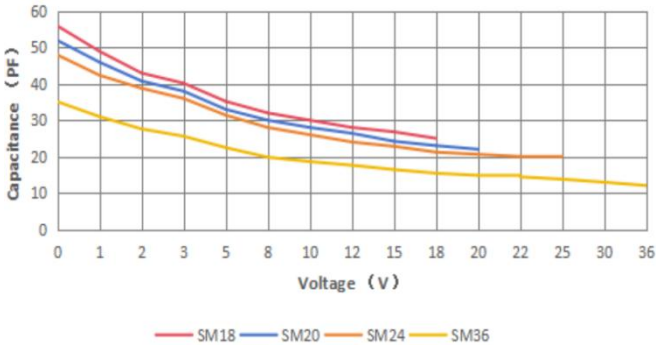


Fig5 Clamping Voltage vs Peak Pulse Current

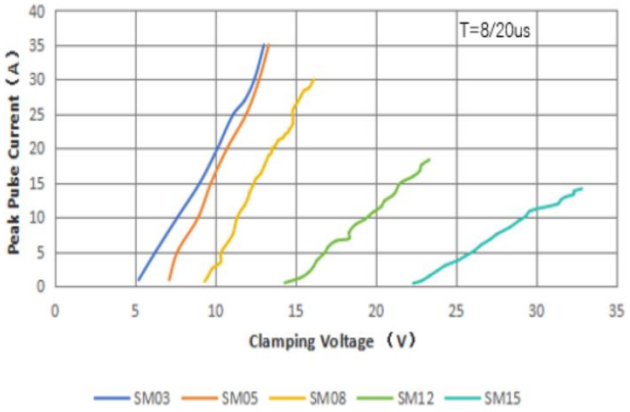
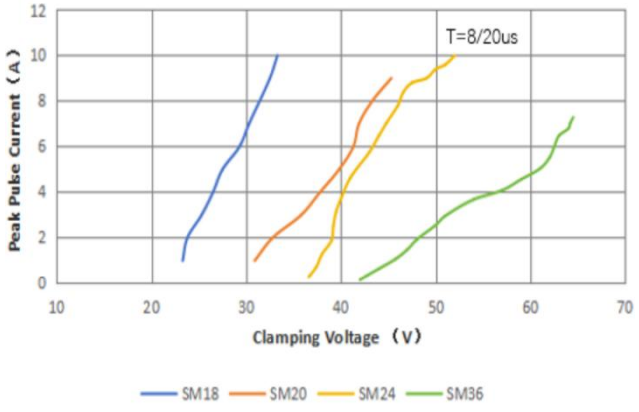


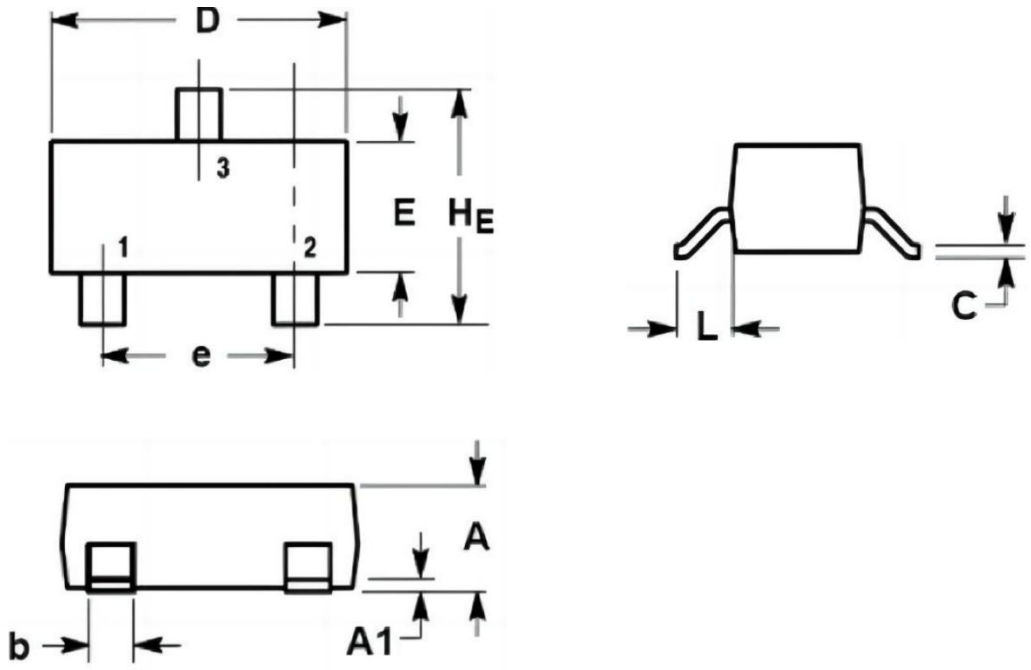
Fig6 Clamping Voltage vs Peak Pulse Current



Package Information

SOT-23

Dimensions in mm



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.089	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
H_E	2.10	2.40	2.64	0.083	0.094	0.104

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