

DESCRIPTION

The SD12DFM TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current and high surge capability. It is designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lighting.

The SD12DFM is in a SOD-123FL package and will protect one bidirectional line. It may be used to provide ESD protection up to $\pm 30\text{kV}$ (Contact and air discharge) according to IEC61000-4-2 , and withstand peak pulse current up to 200A (8/20 μs) according to IEC61000-4-5.

Features

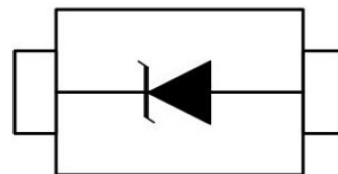
- ◆ Transient protection for high-speed data lines
- ◆ IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ◆ Peak power dissipation: 5600W (8/20 μs)
- ◆ Working voltages : 12V
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ Solid-state silicon-avalanche technology

Package Outline

Applications

- ◆ Power lines
- ◆ Personal digital assistants (PDA's)
- ◆ Microprocessors based equipment
- ◆ Notebooks, Desktops, and Servers
- ◆ Cell phone Handsets and Accessories
- ◆ Portable Electronics
- ◆ Peripherals

Circuit Diagram



- ◆ Packaging: Tape and Reel
- ◆ Quantity per reel: 3,000pcs
- ◆ Reel size: 7 inch

Absolute Maximum Rating (TA=25°C unless otherwise specified)

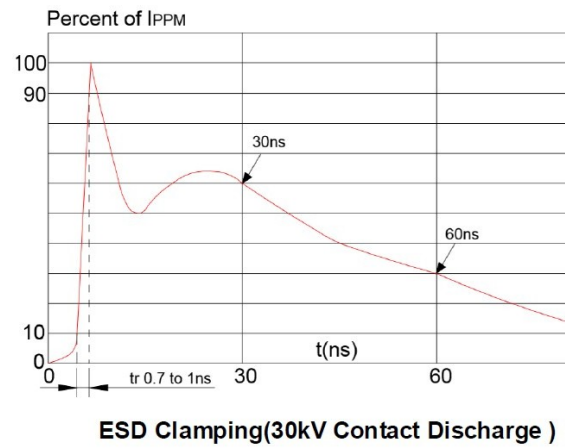
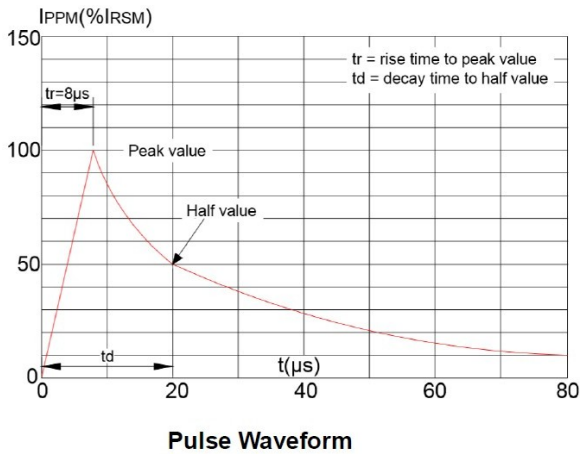
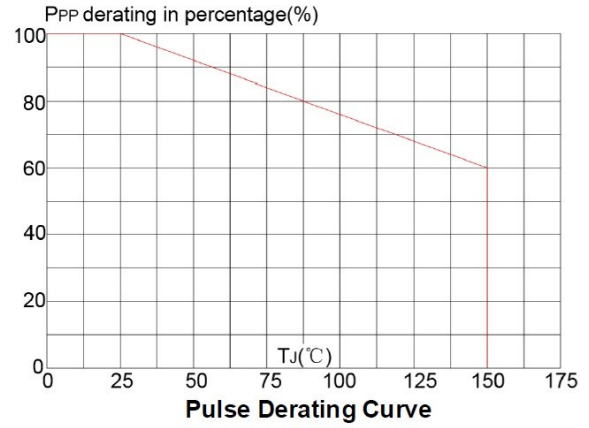
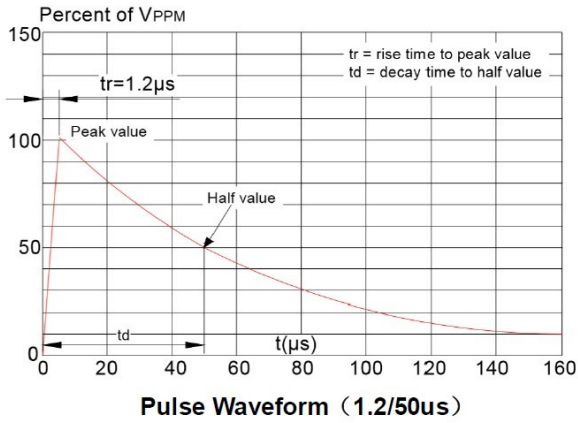
Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Peak Pulse Power(tp=8/20us waveform)	PPp	5600	W
Operating Temperature	TOPT	-55 to +125	°C
Storage Temperature	TSTG	-55 to +150	°C
Lead Solder Temperature – Maximum	TL	260(10 sec.)	°C

Electrical Characteristics (TA=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage				12	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	13		15	V
I _R	Reverse Leakage Current	V _{RWM} = 12V			1.0	μA
I _{PP}	Peak Pulse Current	t _p = 8/20μs			200	A
V _C	Clamping Voltage	I _{PP} = 200A, t _p = 8/20μs			28	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz		450	550	pF

The above data are for reference only.

ELECTRICAL CHARACTERISTICS CURVE



The curve above is for reference only.