

SOD-323 Plastic-Encapsulate ESD Protection Diodes

DESCRIPTION

The SD07T 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 SD07T is in a SOD-323 package and will protect one unidirectional 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 used to protect USB voltage bus pin (8/20 μs) according to IEC61000-4-5.

Features

- ◆ Peak power dissipation: 2625W (8/20 μs)
- ◆ Transient protection for high-speed data lines
- ◆ IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ Working voltages : 7V
- ◆ Solid-state silicon-avalanche technology

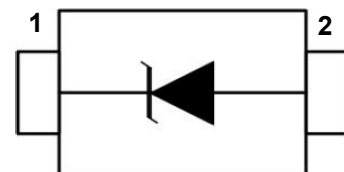
Pin Configuration



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



260°C/ 10s

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

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

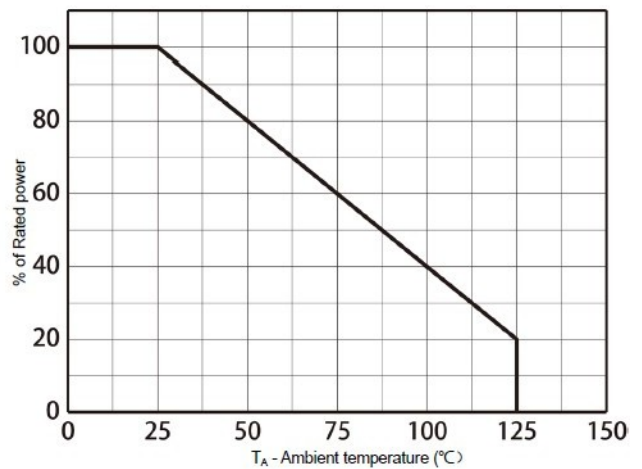
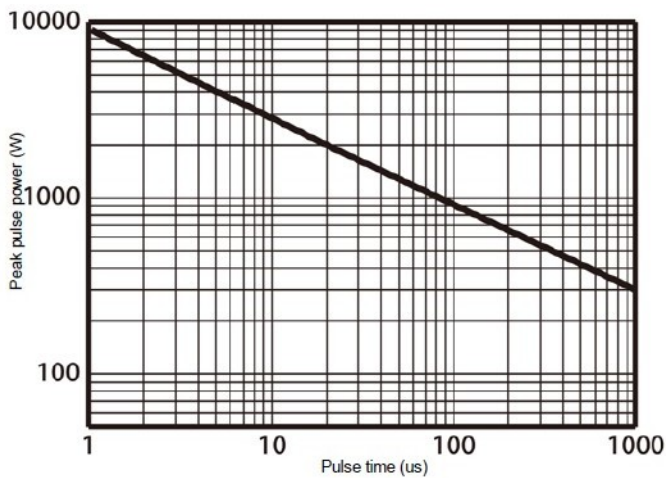
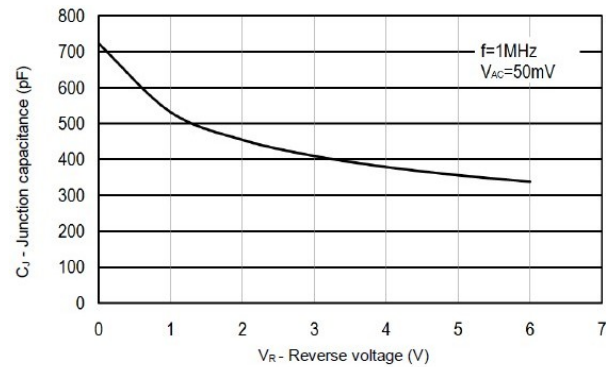
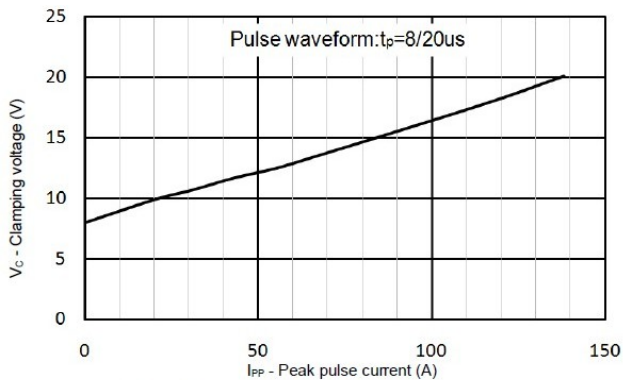
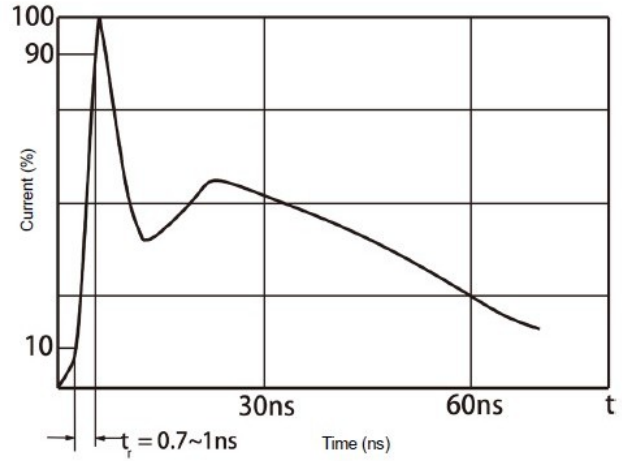
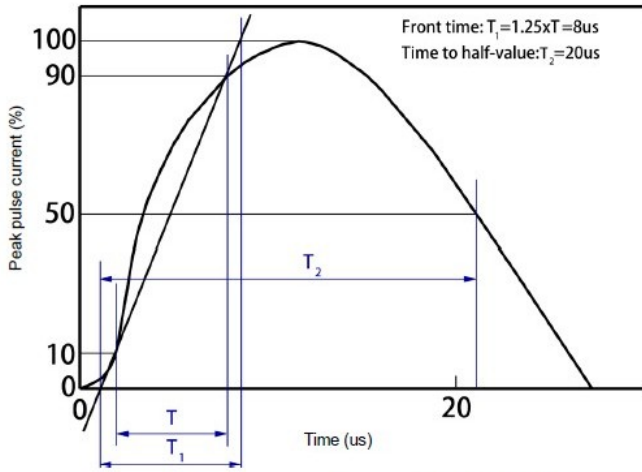
Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Peak Pulse Power($t_p=8/20\mu\text{s}$ waveform)	P _{PP}	2625	W
Operating Temperature	T _{OPT}	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260(10 sec.)	°C

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage				7.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	7.5	8.0	9.0	V
I _R	Reverse Leakage Current	V _{RWM} = 7V			1	uA
I _{PP}	Peak Pulse Current	t _p = 8/20μs			105	A
V _C	Clamping Voltage	I _{PP} = 70A, t _p = 8/20μs		17	19	V
		I _{PP} = 105A, t _p = 8/20μs		20	25	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz		600	700	pF

The above data are for reference only.

ELECTRICAL CHARACTERISTICS CURVE



The curve above is for reference only.