

SOD-323 Plastic-Encapsulate ESD Protection Diodes

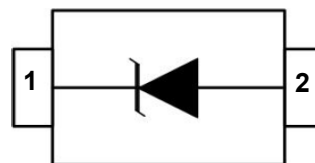
DESCRIPTION

The SD15T 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.

- ◆ 1800 Watts Peak Pulse Power per (8/20 μ s)
- ◆ Transient protection for high-speed data lines
- ◆ IEC61000-4-2 (ESD) $\pm$ 30kV (air), $\pm$ 30kV (contact)
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ Working voltages : 15V
- ◆ Solid-state silicon-avalanche technology
- ◆ Meets MSL 1 Requirements



Cir



Applications

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

260°C/10s

- ◆ Packaging: Tape and Reel
- ◆ Marking: H15

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}	1800	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

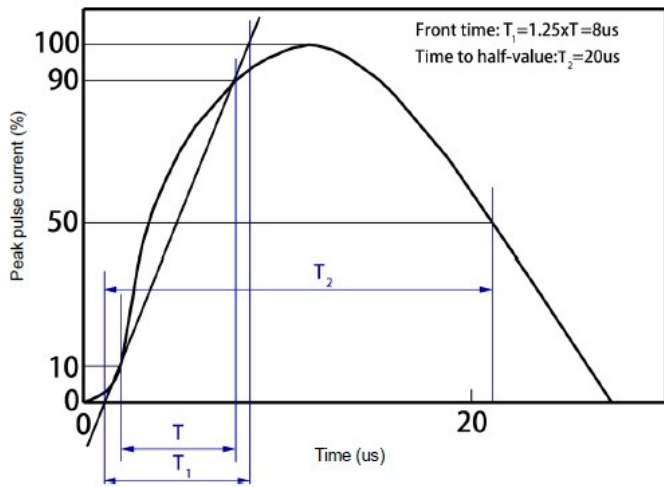
The above data are for reference only.

Electrical Characteristics (TA=25°C unless otherwise specified)

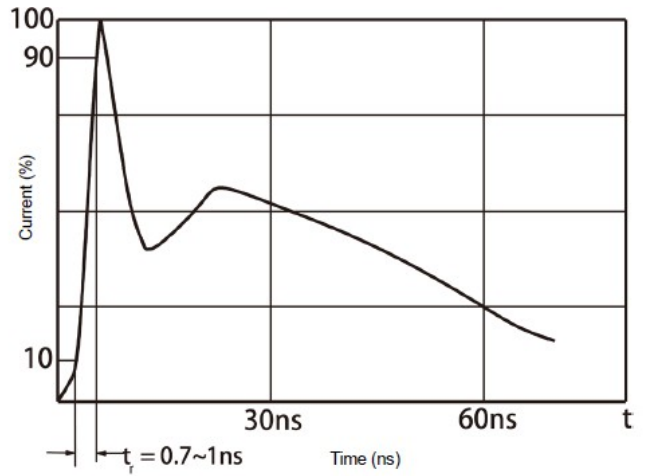
Symbol	Param	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				15	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$	16	16.5	18	V
I_R	Reverse Leakage Current	$V_{RWM} = 15V$			1	μA
I_{PP}	Peak Pulse Current	$t_p = 8/20\mu s$			60	A
V_C	Clamping Voltage	$I_{PP} = 25A, t_p = 8/20\mu s$			22	V
		$I_{PP} = 50A, t_p = 8/20\mu s$			26	V
		$I_{PP} = 60A, t_p = 8/20\mu s$			30	V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$	300	330	400	pF

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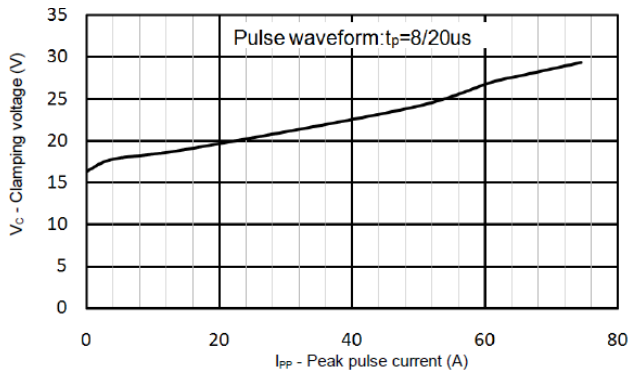
ELECTRICAL CHARACTERISTICS CURVE



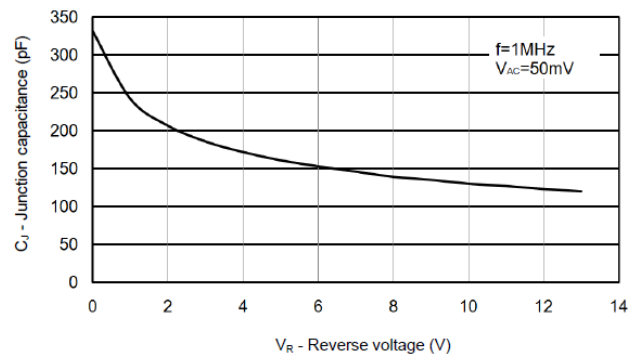
8/20 us waveform per IEC61000-4-5



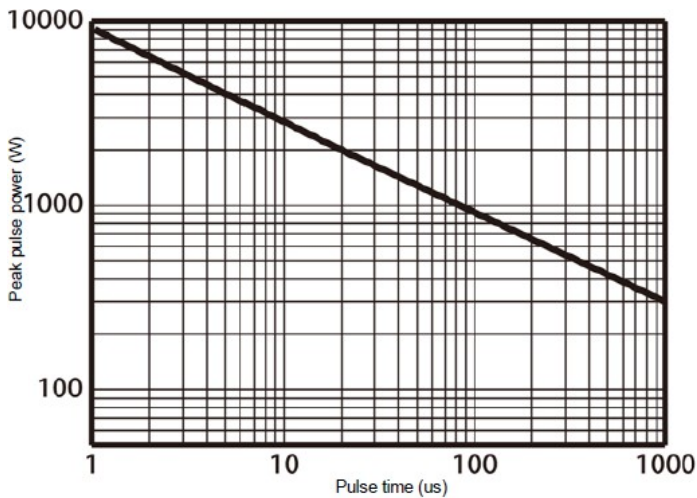
Contact discharge current waveform per IEC61000-4-2



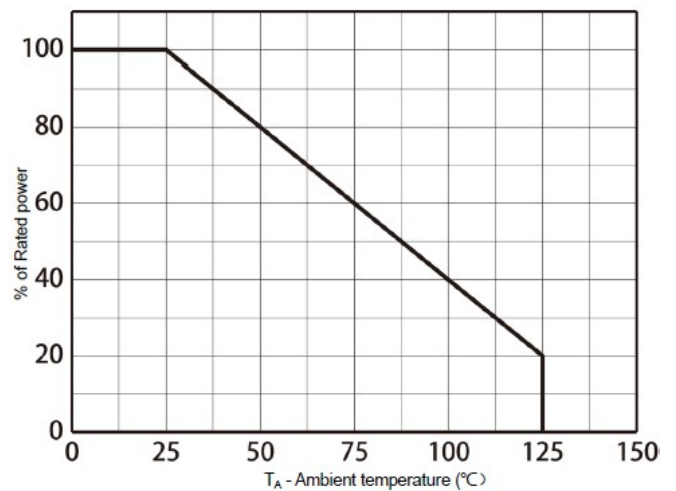
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

The curve above is for reference only.