

Desicription

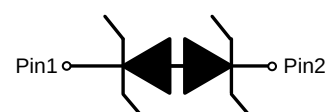
- ◆ This low-power TVS (Transient Voltage Suppressor) is mainly used for signal and power supply to protect the back-stage circuit from ESD(Electrostatic Discharge) and EFT(Electrical Fast Transients) and improve the reliability of the product, because its extremely small package is suitable for various portable devices and mobile electronic devices.



SOD-323

Features

- ◆ IEC61000-4-2(ESD): $\pm 30\text{KV}$ Max Air
 $\pm 30\text{KV}$ Max Contact
- ◆ IEC61000-4-4(EFT): $40\text{A}(5/50\text{ns})$
- ◆ IEC61000-4-5(Surge): $9.0\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $20\text{pF}@1\text{MHz}$
- ◆ Very low reverse current: $I_R < 0.2\mu\text{A}$ (typical)
- ◆ Halogen free ,Lead free and RoHs



Circuit Diagram

Application

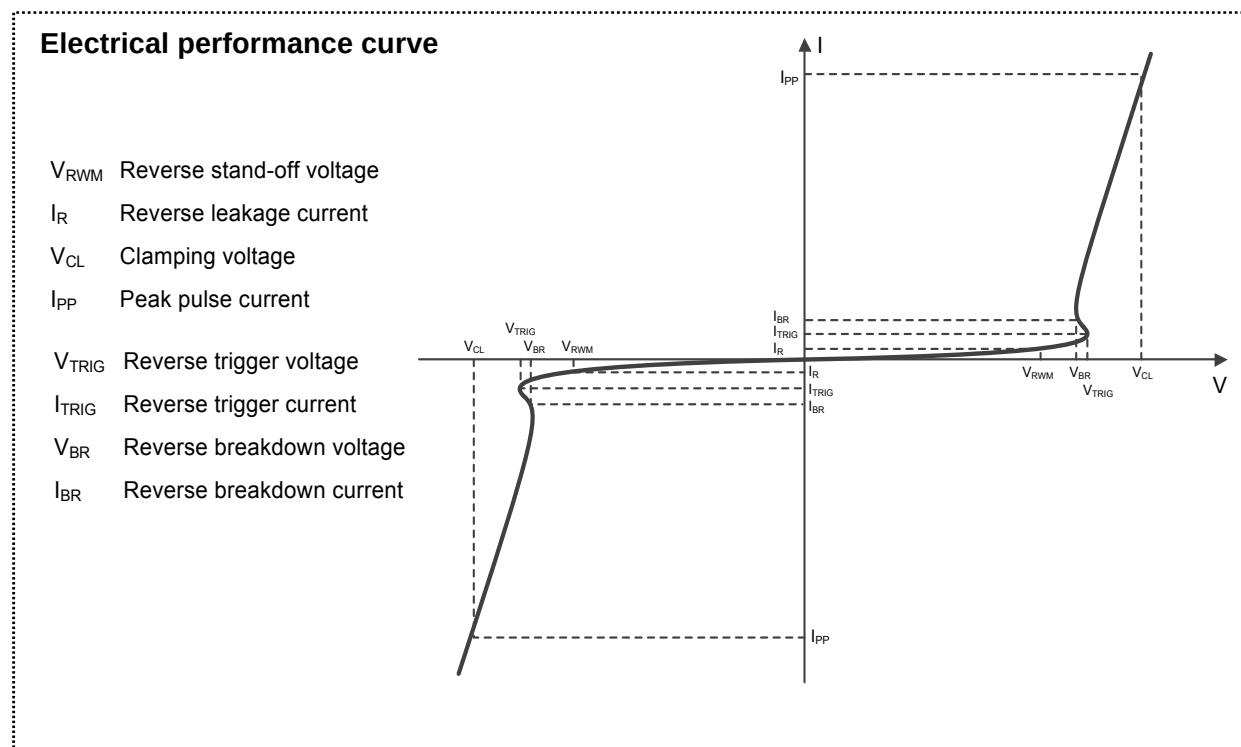
- ◆ Cellular phones
- ◆ Portable devices
- ◆ Digital cameras
- ◆ Player
- ◆ Smart home
- ◆ Robot

Order information

Model	Marking	Package	shipping
ESD5A190TA	3M	SOD-323	3000/Tape&Reel

Electrical characteristic(T=25°C unless otherwise specified)

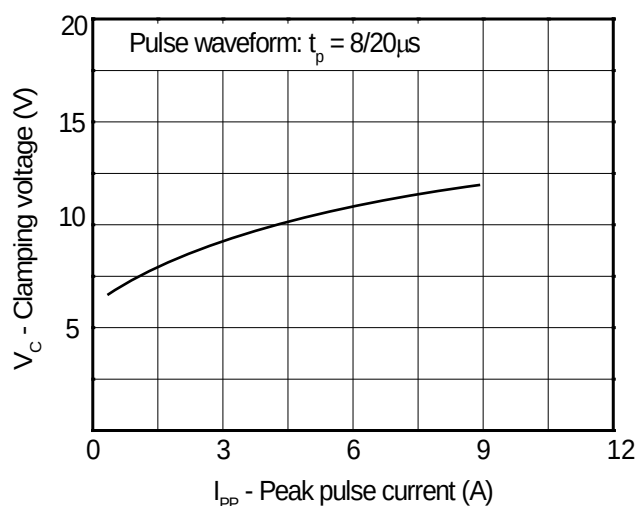
Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM}				± 5.0	V
Reverse leakage current	I_R	$V_{RWM}=5.0V$			0.2	μA
Reveres breakdown voltage	V_{BR}	$I_T=1mA$	5.5	6.2	8.0	V
Peak pulse current	I_{PP}	$V_{C\ Max} (8/20\mu s)$	9.0	10.0		A
Clamping voltage	V_C	$I_{PP}=1.0A(8/20\mu s)$		7.0		V
		$I_{PP}=9.0A(8/20\mu s)$		10.0	12.0	V
Junction capacitance	C_J	$V_R=0V\ f=1MHz$		20.0		pF

Electrical characteristic(T=25°C, unless otherwise specified)


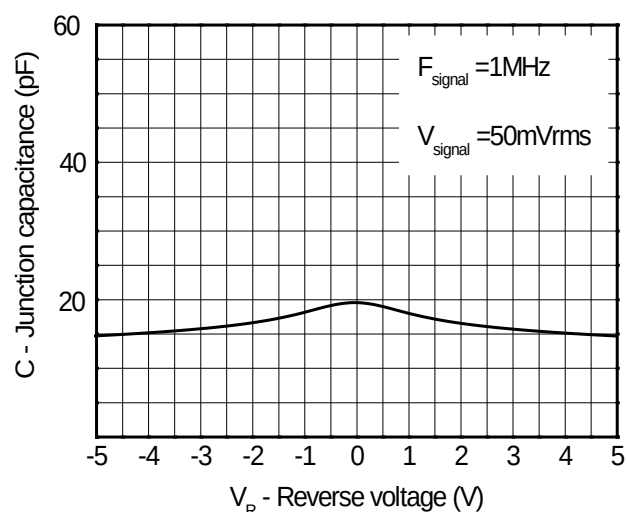
Maximum Rating

Rating	symbol	value	Units
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	9.0	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	± 30	KV
ESD per IEC61000-4-2(Air)		± 30	
Operating Temperature	T_J	-40~125	$^{\circ}C$
Storage Temperature	T_{STG}	-55~155	$^{\circ}C$

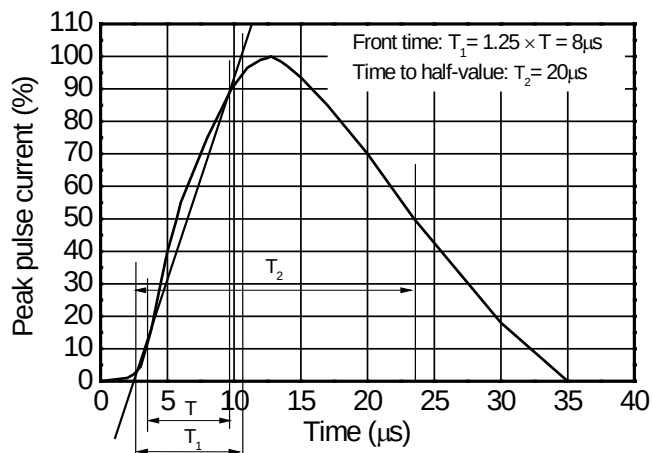
Typical characteristic



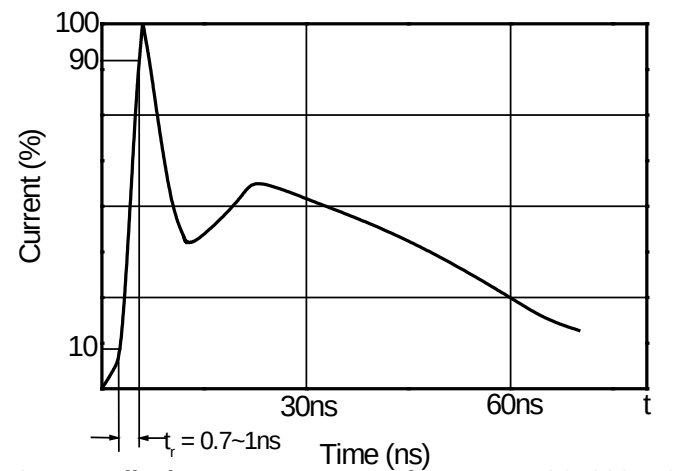
Clamping voltage vs. Peak pulse current



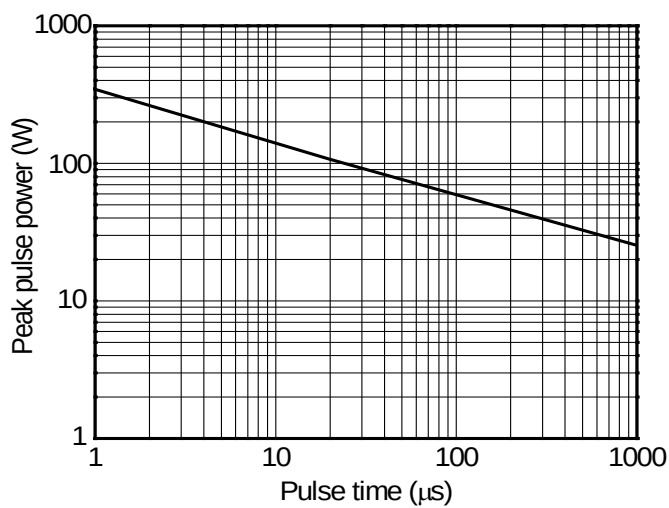
Capacitance vs. Reverse voltage



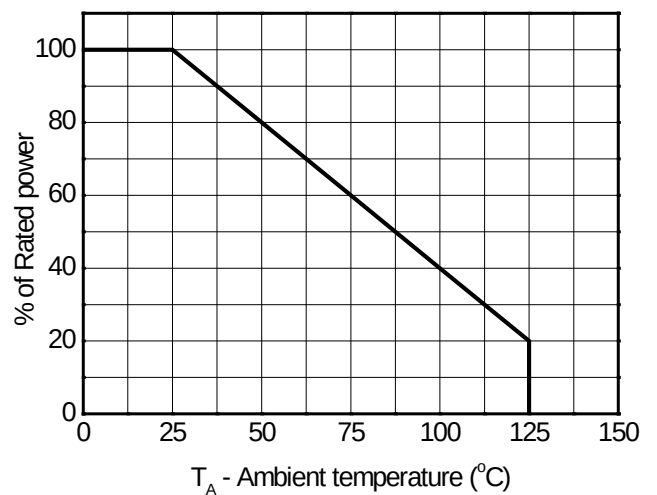
8/20 μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



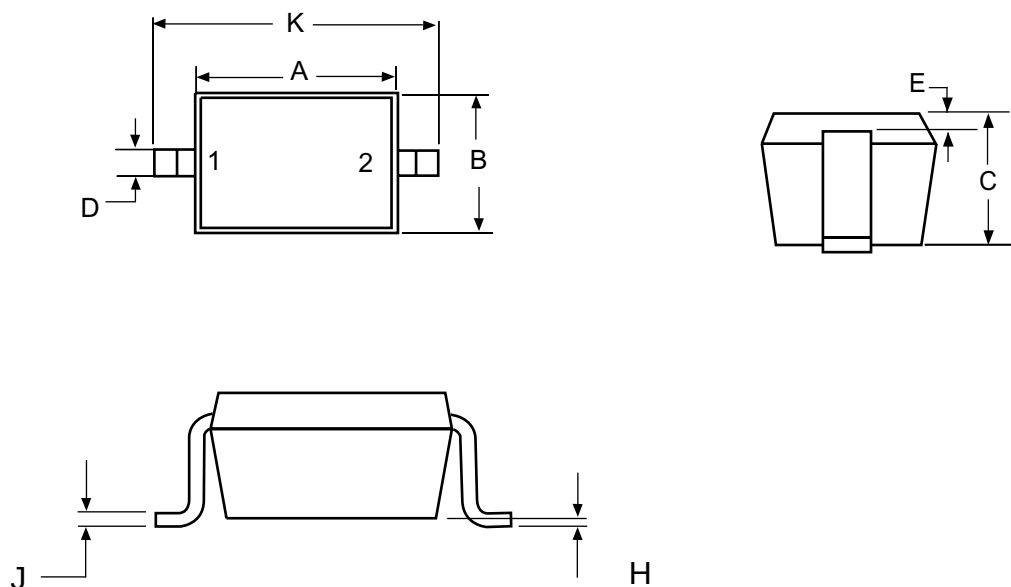
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

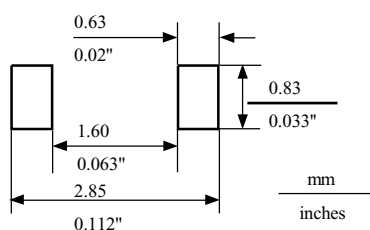
Package outline dimensions

SOD-323



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

Recommend land pattern (Unit: mm)



Note: This land pattern is for your reference only. Actual pad layouts may vary depending on application.