

Desicription

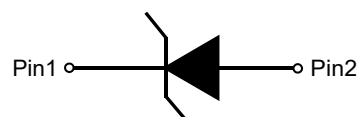
- ◆ This low-power TVS (Transient Voltage Suppressor) is mainly used for signal and power supply to protect the back-stage circuit from ESD(Electrostatic Discharge) and EFT(Electrical Fast Transients) and improve the reliability of the product, because its extremely small package is suitable for various 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): $15\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $80\text{pF}@1\text{MHz}$
- ◆ Very low reverse current: $I_{\text{R}} < 0.2\mu\text{A}$ (typical)
- ◆ Halogen free ,Lead free and RoHs



Circuit Diagram

Application

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

Order information

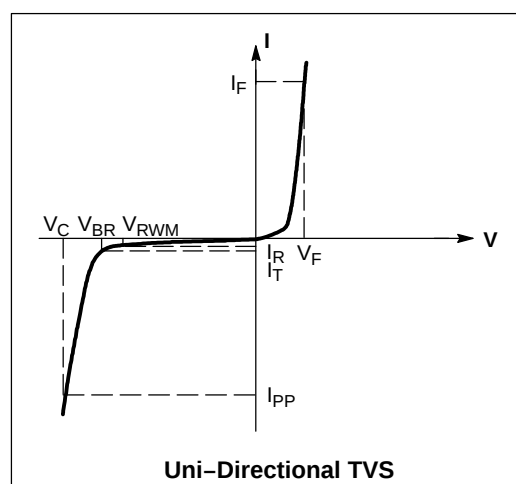
Model	Marking	Package	shipping
ESD12A500TR	ZC	SOD-323	3000/Tape&Reel

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

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM}				12.0	V
Reverse leakage current	I_R (Pin1 to Pin2)	$V_{RWM}=12V$			0.2	μA
Reveres breakdown voltage	V_{BR} (Pin1 to Pin2)	$I_T=1mA$	13.5			V
Clamping voltage	V_C (Pin1 to Pin2)	$I_{PP}=1A(8/20\mu s)$			18.0	V
		$I_{PP}=15A(8/20\mu s)$			23.0	V
Junction capacitance	C_J	$V_R=0V$ f=1MHz		80.0	100.0	pF

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

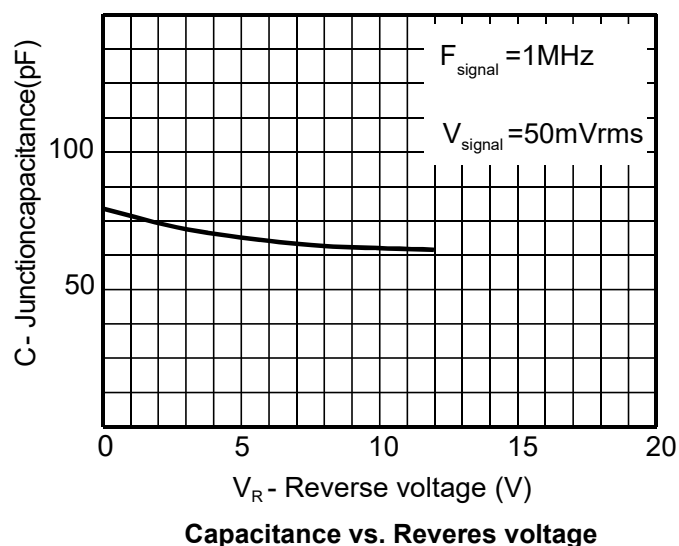
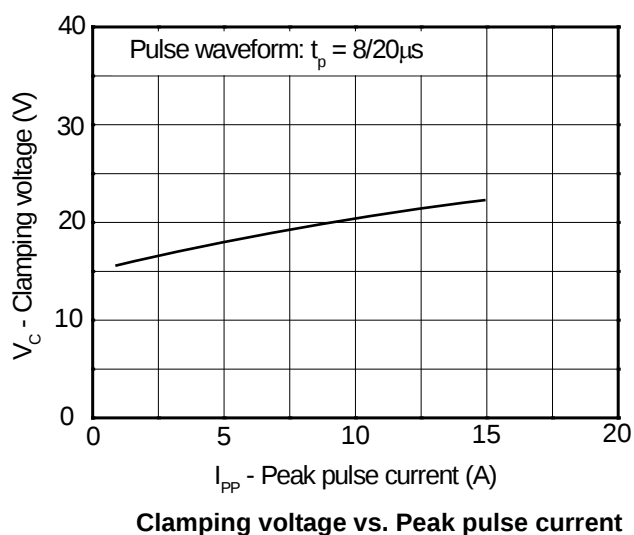
Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F

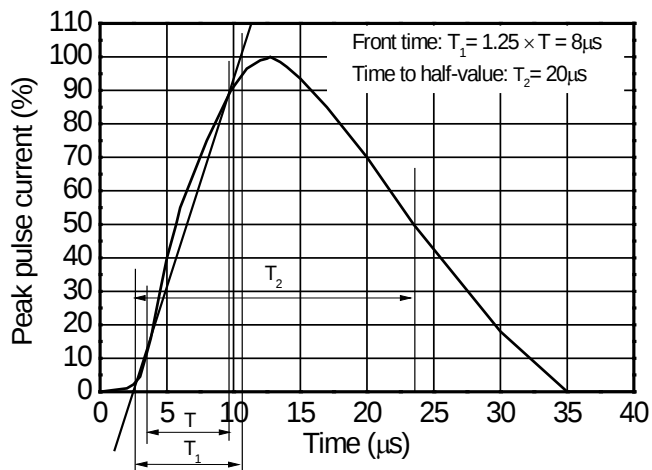


Maximum Rating

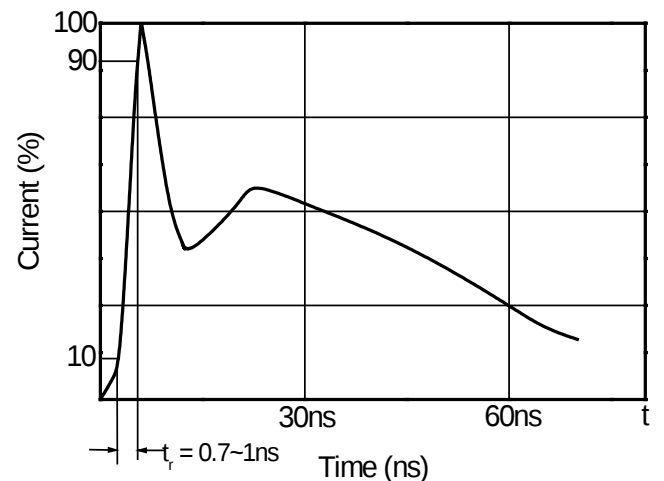
Rating	symbol	value	Units
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	15.0	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	± 30	KV
ESD per IEC61000-4-2(Air)		± 30	
Operating Temperature	T_J	-55~150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~150	$^{\circ}C$

Typical characteristic

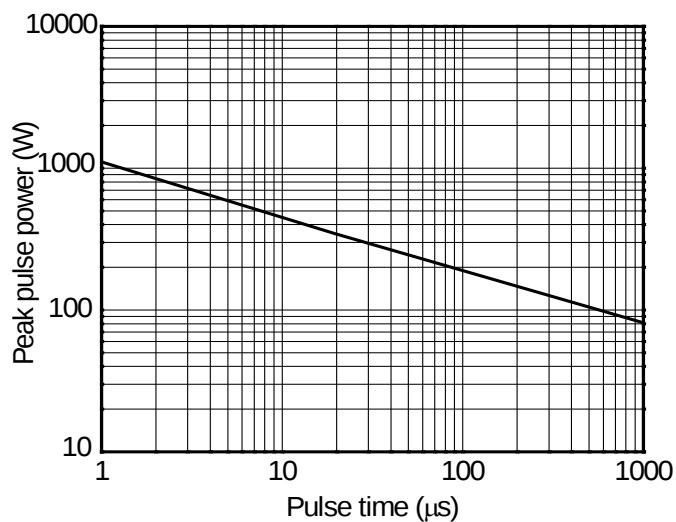




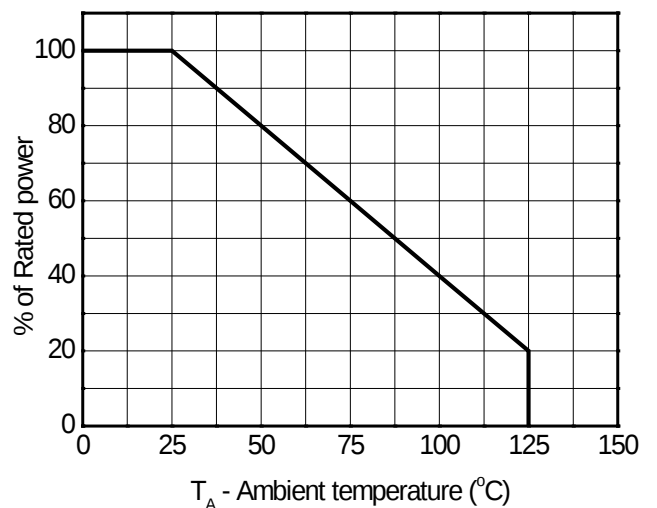
8/20 μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



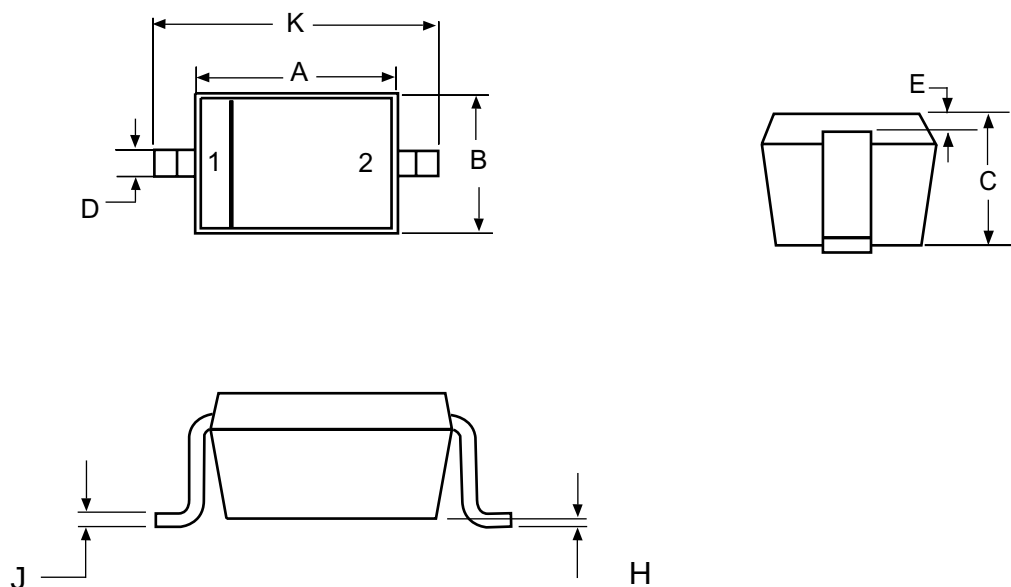
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

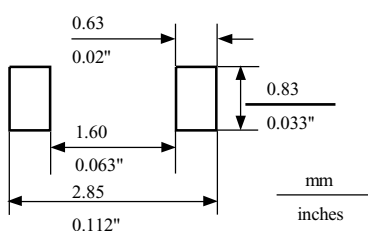
Package outline dimensions

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.