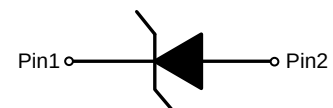


Desicription

- ◆ 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-523



Circuit Diagram

Features

- ◆ IEC61000-4-2(ESD): $\pm 25\text{KV}$ Max Air
 $\pm 25\text{KV}$ Max Contact
- ◆ IEC61000-4-4(EFT): $40\text{A}(5/50\text{ns})$
- ◆ IEC61000-4-5(Surge): $28\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $160\text{ pF}@1\text{MHz}$
- ◆ Very low reverse current: $I_R < 0.2\mu\text{A}(\text{typical})$
- ◆ Halogen free ,Lead free and RoHs

Application

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

Order information

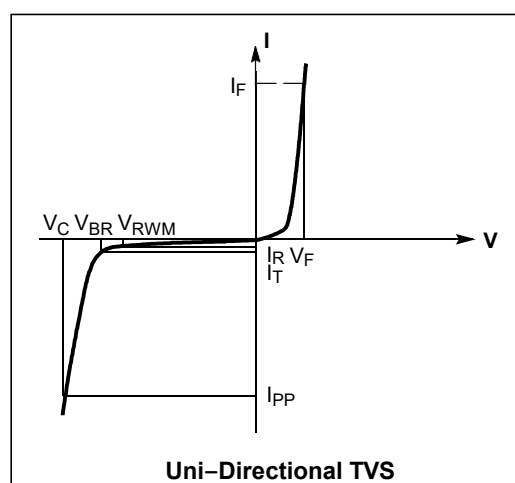
Model	Marking	Package	shipping
ESD5B161TR	5V	SOD-523	3000/Tape&Reel

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	$V_{RWM}=5V$			0.2	μA
Reveres breakdown voltage	V_{BR}	$I_T=1mA$	5.5		8.0	V
Clamping voltage	V_C	$I_{PP}=1A(8/20\mu s)$			8.0	V
		$I_{PP}=28A(8/20\mu s)$			14.0	V
Junction capacitance	C_J	$V_R=0V$ f=1MHz		160.0		pF

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

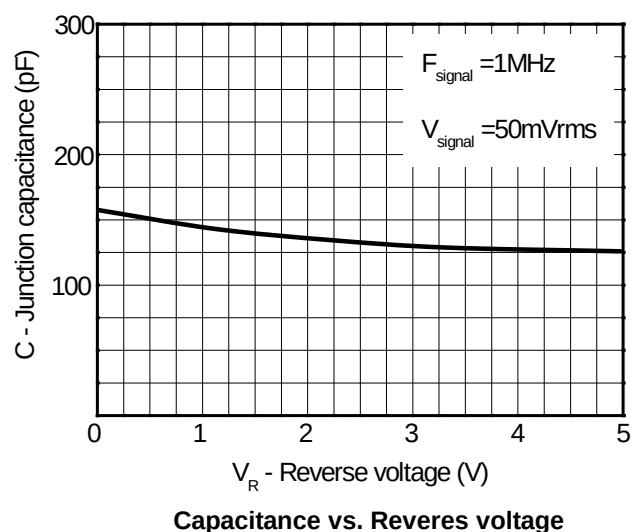
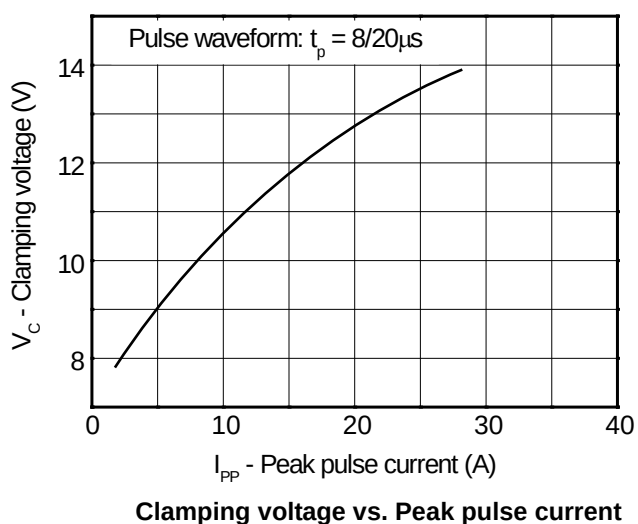
Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F

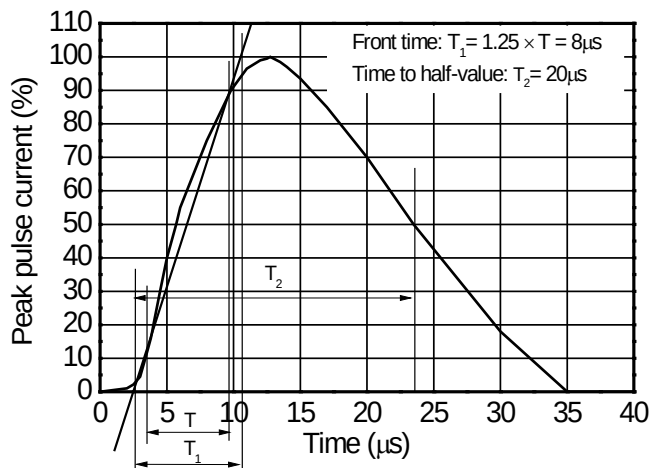


Maximum Rating

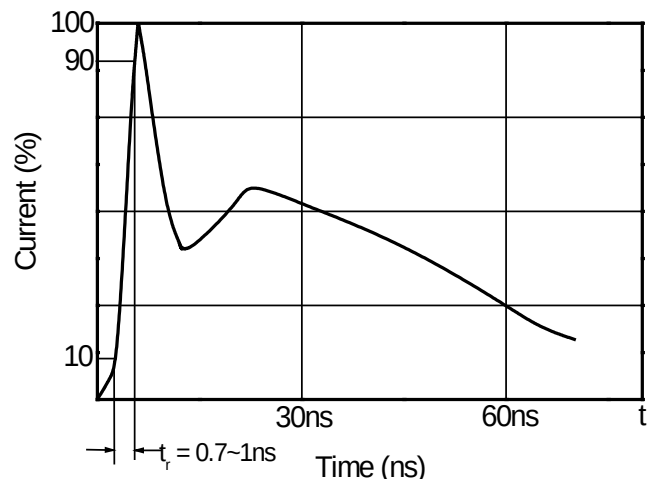
Rating	symbol	value	Units
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	28.0	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	± 25	KV
ESD per IEC61000-4-2(Air)		± 25	
Operating Temperature	T_J	-55~150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~150	$^{\circ}C$

Typical characteristic

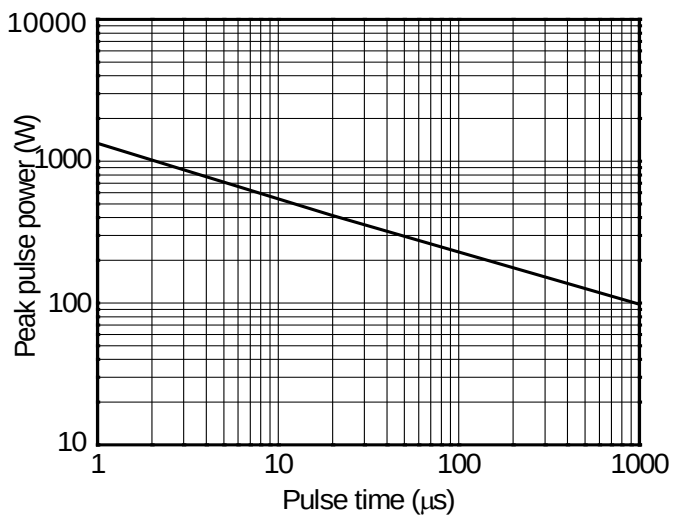




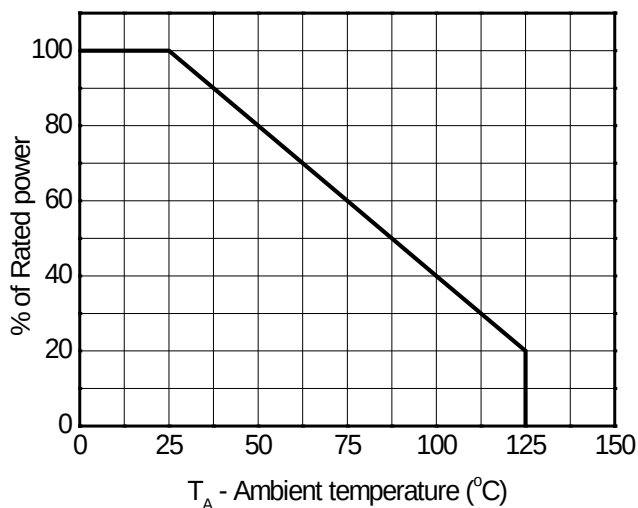
8/20μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



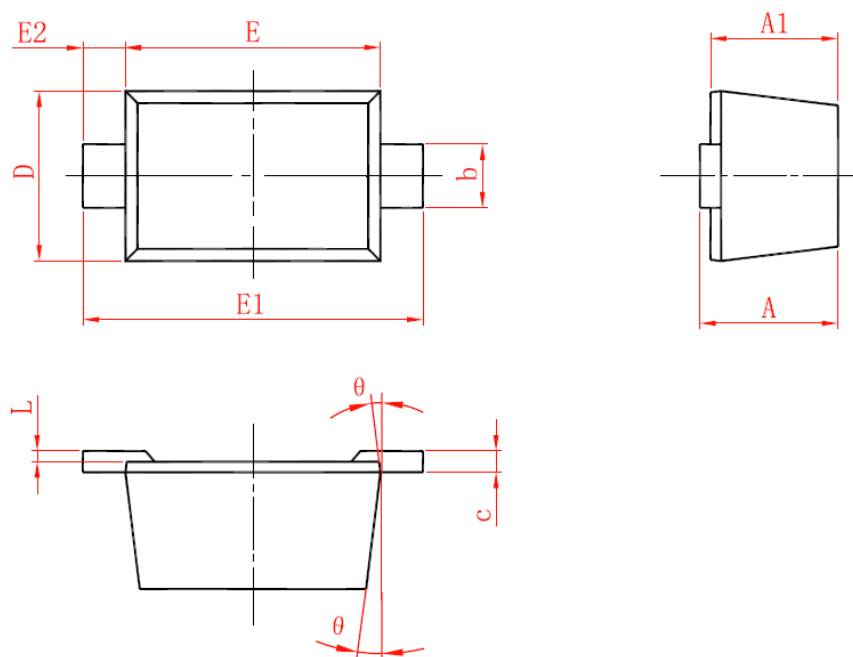
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

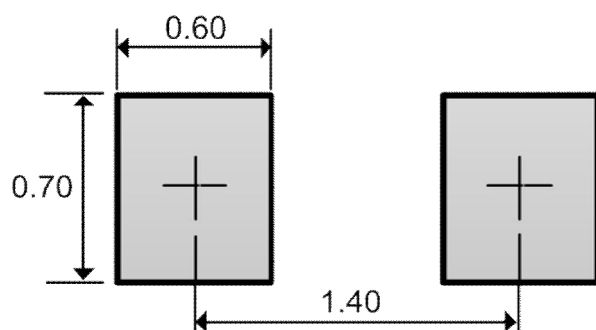
Package outline dimensions

SOD-523



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.510	0.640	0.770
A1	0.500	0.600	0.700
b	0.250	0.300	0.350
c	0.080	0.115	0.150
D	0.750	0.800	0.850
E	1.100	1.200	1.300
E1	1.500	1.600	1.700
E2	0.200 Ref		
L	0.010	0.040	0.070
θ	7° Ref		

Recommend land pattern (Unit: mm)



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