

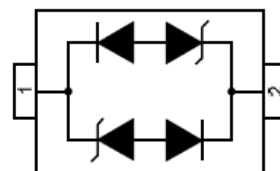
Desicription

- ◆ 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.



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): $10.0\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $0.5\text{ pF}(\text{typical})@1\text{MHz}$
- ◆ Very low reverse current: $I_R < 0.2\mu\text{A}(\text{typical})$
- ◆ Halogen free ,Lead free and RoHs
- ◆ AEC-Q101



Circuit Diagram

Application

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

Order information

Model	Marking	Package	shipping
ESD12A003TBC	DC	SOD323	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	$V_{RWM} = 12.0V$			0.2	μA
Reveres breakdown voltage	V_{BR}	$I_T = 1mA$	13.0		16.5	V
Clamping voltage	V_C	$I_{PP} = 1A(8/20\mu s)$			18.5	V
		$I_{PP} = 10A(8/20\mu s)$			27.0	V
Junction capacitance	C_J	$V_R = 0V$ f=1MHz		0.5	0.9	pF

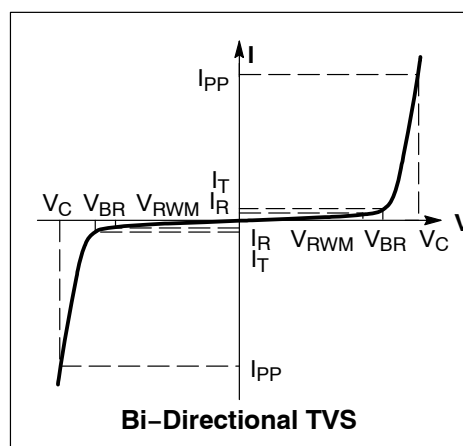
Electrical characteristic(T=25°C, unless otherwise specified)
Electrical performance curve

V_C : Maximum clamping voltage

V_{br} : Reverse breakdown voltage

V_{RWM} : Working voltage

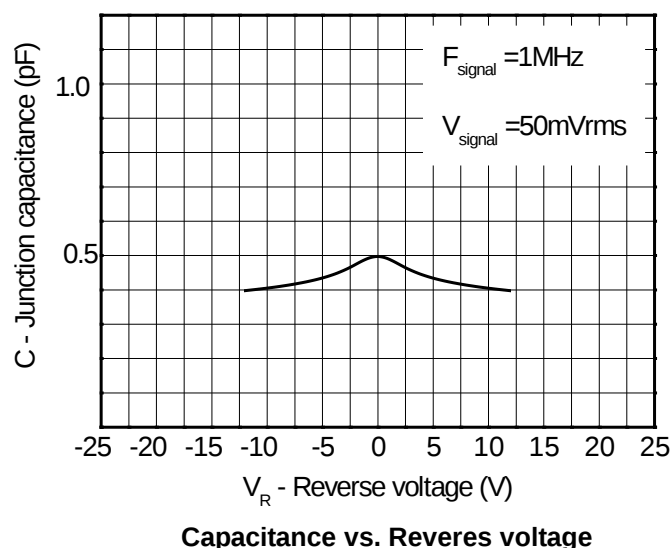
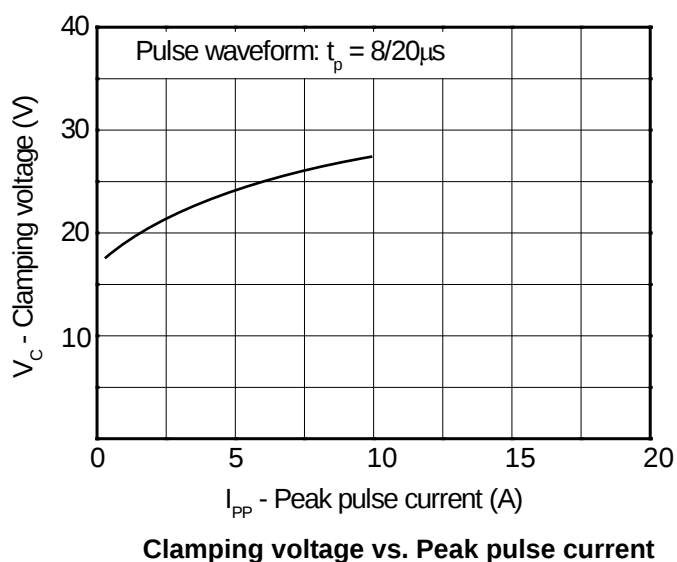
I_{PP} : Maximum peak current

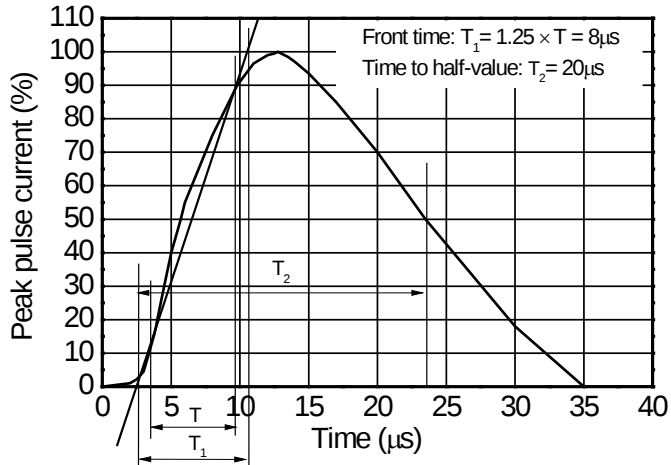


Maximum Rating

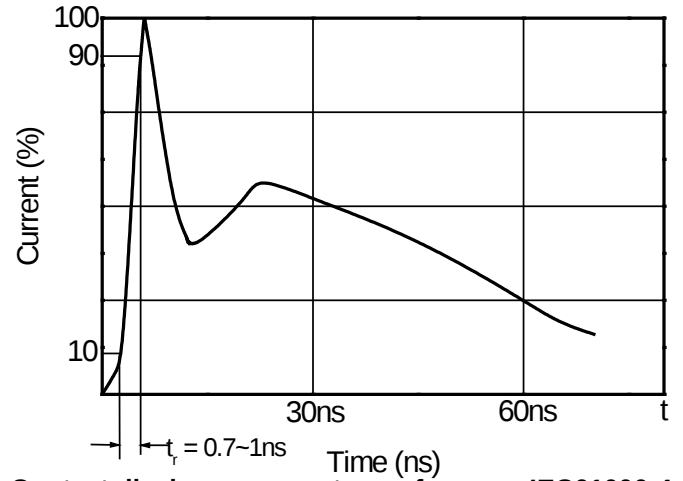
Rating	symbol	value	Units
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	10.0	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	± 30	KV
ESD per IEC61000-4-2(Air)		± 30	
Operating Temperature	T_J	-55~125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~150	$^{\circ}\text{C}$

Typical characteristic

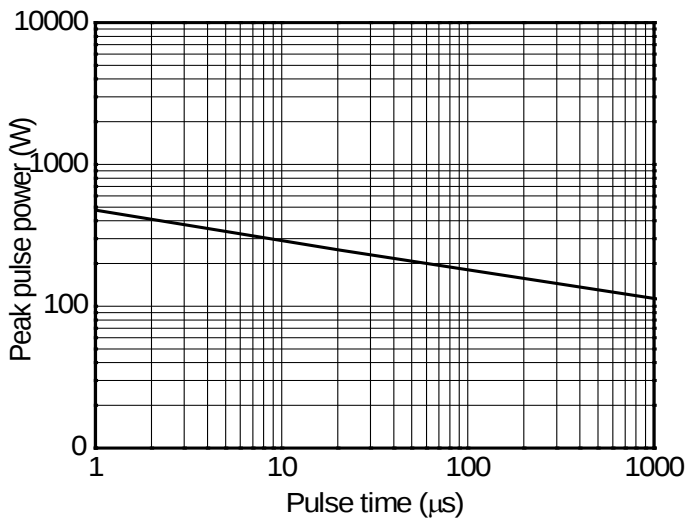




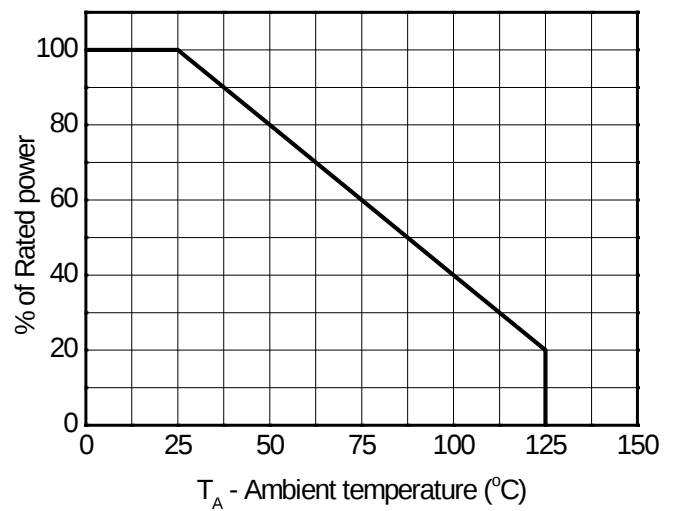
8/20 μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



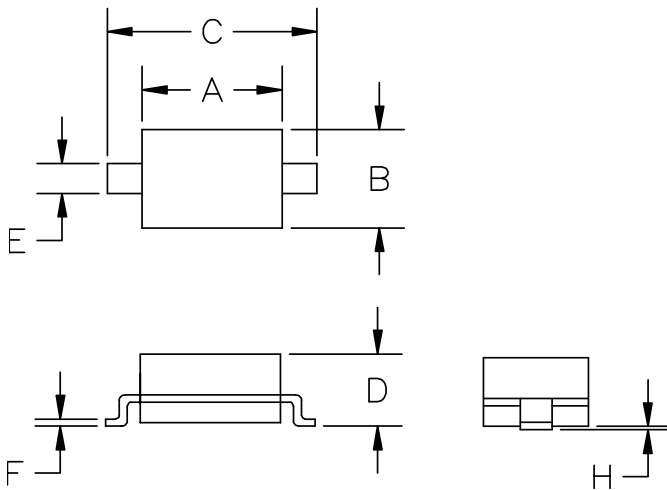
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

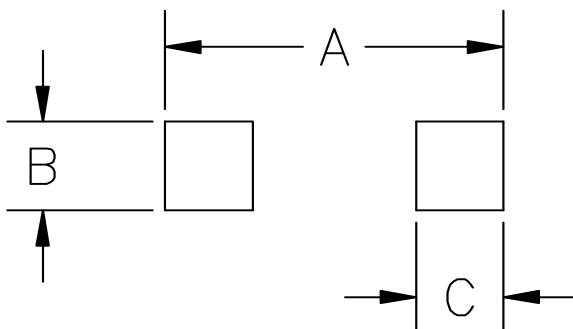
Dimension outline Unit:mm

SOD323



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

Recommended Mounting Pad Layout Unit:mm



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031