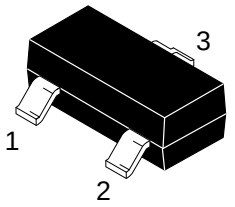
Desicription

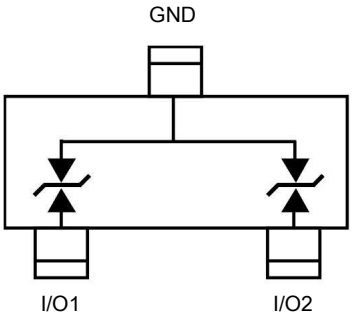
◆ This low-power TVS （Transient Voltage Suppressor)is mainly used for signal and power supply to protect the back-stage circuit from ESD(Electrostatic Discharge) and EFT(Electrical Fast Transients) and improve the reliability of the product, because its extremely small package is suitable for various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



SOT-23 (Top View)

Features

- ◆ IEC61000-4-2(ESD):±30KV Max Air
  ±30KV Max Contact
- ◆ IEC61000-4-4(EFT):40A(5/50ns)
- ◆ IEC61000-4-5(Surge): 9 .0A(8/20us)
- ◆ Line capacitance: 30.0 pF(typical)@1MHz
- ◆ Very low reverse current:I_R<0.2uA(typical)
- ◆ Halogen free ,Lead free and RoHs
- ◆ AEC-Q101



Circuit Diagram

Application

- ◆ Cellular phones
- ◆ Portable devices
- ◆ Digital cameras
- ◆ Player
- ◆ Smart home
- ◆ Robot
- ◆ Low and High-Speed CAN
  Fault Tolerant CAN

Order information

Model	Marking	Package	shipping
ESD24R300TBC	**27E**	**SOT23**	**3000/Tape&Reel**

Electrical characteristic(T=25℃, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM}				±24.0	V
Reverse leakage current	I_R	V_{RWM}= 24.0V			0.2	uA
Reveres breakdown voltage	V_{BR}	I_T=1mA	25.0			V
Clamping voltage	V_C	I_{PP}=1A(8/20us)			36.0	V
		I_{pp}=9.0A(8/20us)			48.0	V
Junction capacitance	C_J	V_R=0V f=1MHz		30.0	45.0	pF

Electrical characteristic(T=25℃, unless otherwise specified)

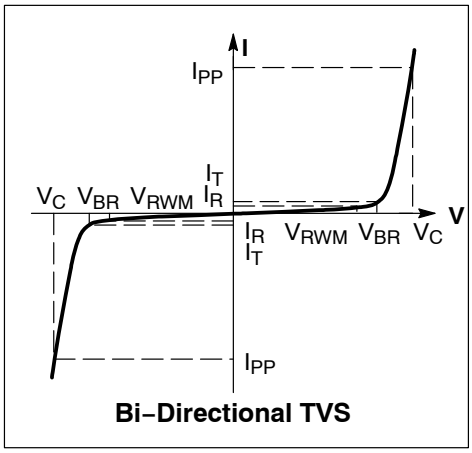
Electrical performance curve

V_C: Maximum clamping voltage

V_{br}: Reverse breakdown voltage

V_{RWM}: Working voltage

I_{PP}: Maximum peak current

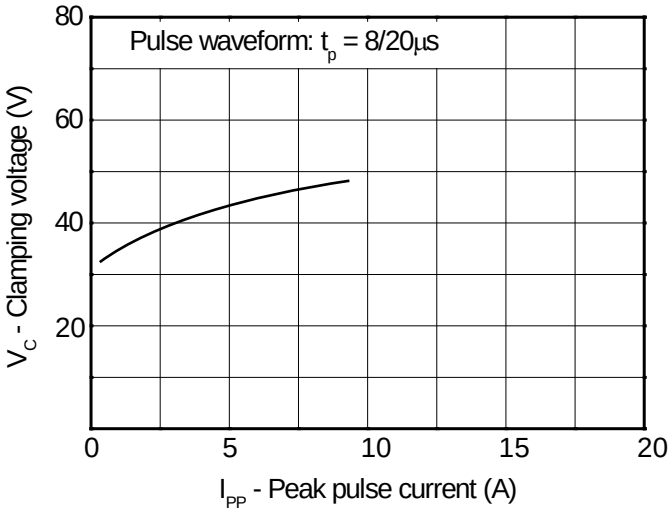


Bi-Directional TVS

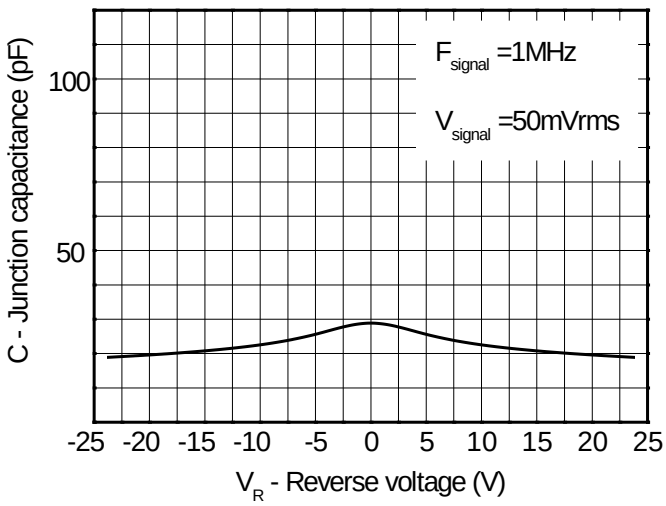
Maximum Rating

Rating	symbol	value	Units
Peak Pulse Current(tp=8/20us)	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	-55~125	℃
Storage Temperature	T_{STG}	-55~150	℃

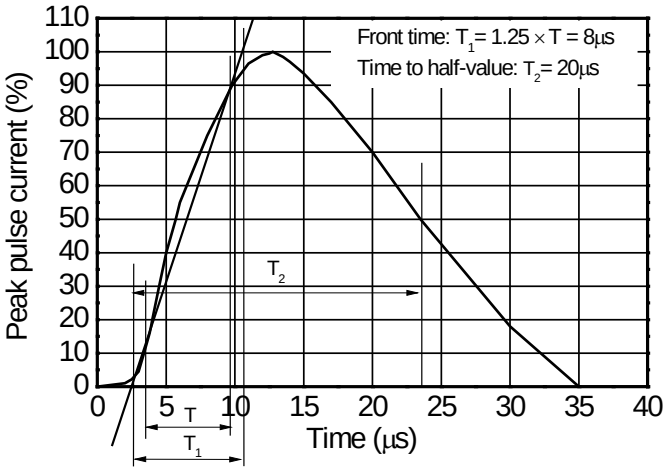
Typical characteristic



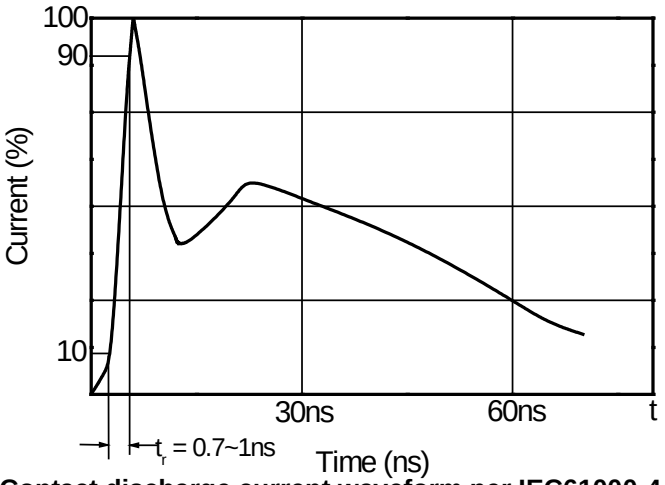
Clamping voltage vs. Peak pulse current



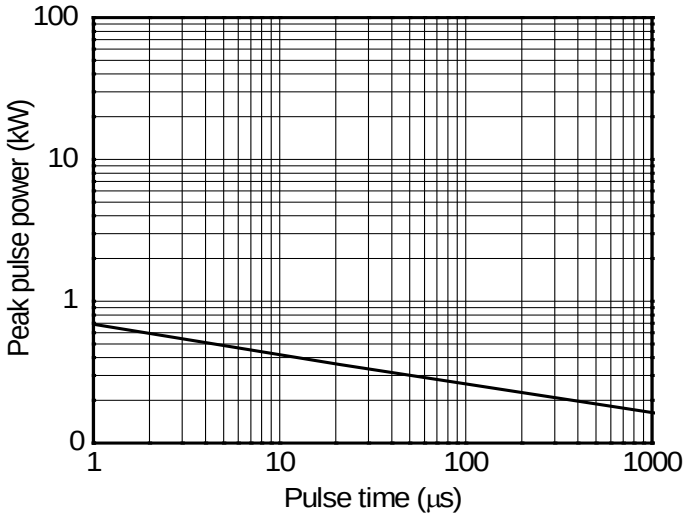
Capacitance vs. Reveres voltage



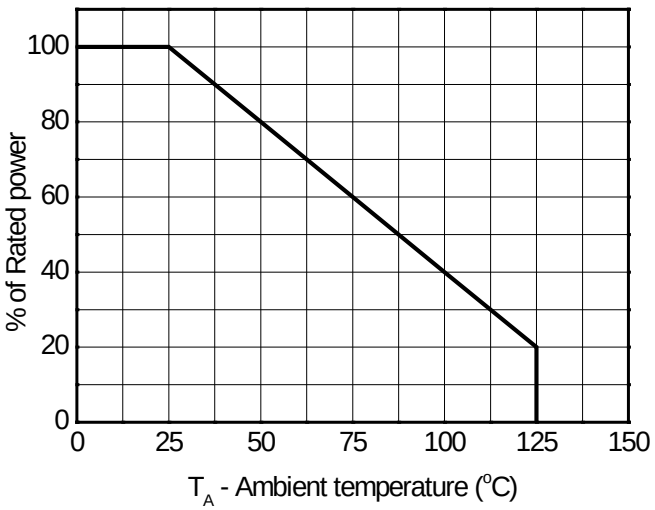
8/20μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



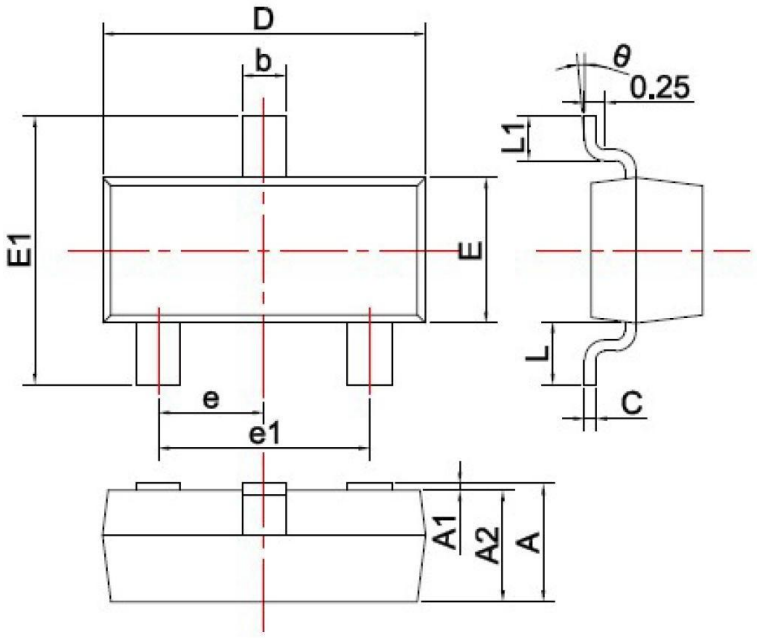
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

Dimension outline Unit:mm

SOT23



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Recommened Mounting Pad Layout Unit:mm