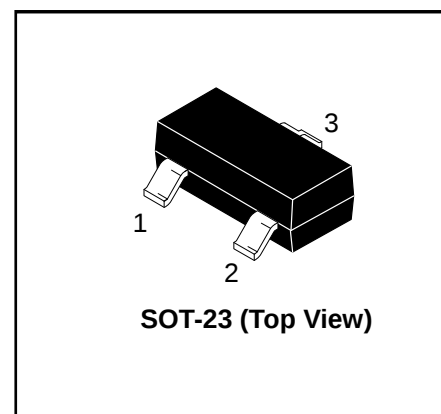


Desicription

- ◆ 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.

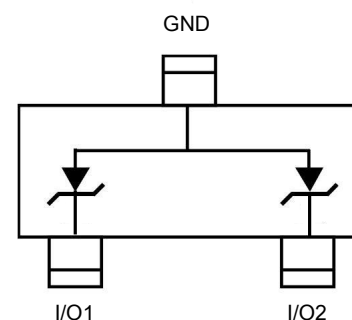


Features

- ◆ IEC61000-4-2(ESD): $\pm 20\text{KV}$ Max Air
 $\pm 15\text{KV}$ Max Contact
- ◆ IEC61000-4-4(EFT): $40\text{A}(5/50\text{ns})$
- ◆ IEC61000-4-5(Surge): $4\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $0.5\text{pF}(\text{typical})@1\text{MHz}$
- ◆ Very low reverse current: $I_R < 0.3\mu\text{A}(\text{typical})$
- ◆ Halogen free ,Lead free and RoHs
- ◆ AEC-Q101

Application

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



Circuit Diagram

Order information

Model	Marking	Package	shipping
ESD5R005TUC	M5	SOT23	3000/Tape&Reel

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

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM} pin1/2 to pin3				5.0	V
Reverse leakage current	I_R pin1/2 to pin3	$V_{RWM}=5.0V$			0.3	uA
Reveres breakdown voltage	V_{BR} pin1/2 to pin3	$I_T=1mA$	5.5		9.5	V
Clamping voltage	V_C pin1/2 to pin3	$I_{PP}=1A(8/20us)$			10.0	V
		$I_{pp}=4A(8/20us)$			14.0	V
Junction capacitance	C_J	$V_R=0V$ f=1MHz		0.5	0.8	pF

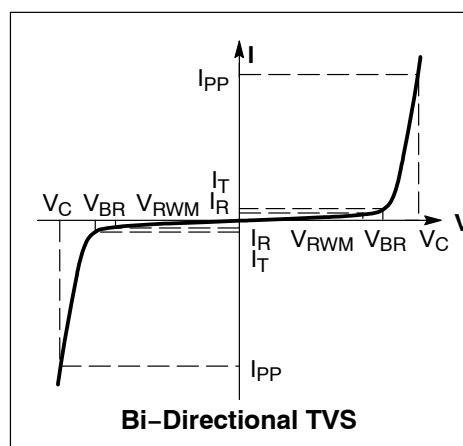
Electrical characteristic(T=25°C, unless otherwise specified)
Electrical performance curve

V_C : Maximum clamping voltage

V_{br} : Reverse breakdown voltage

V_{RWM} : Working voltage

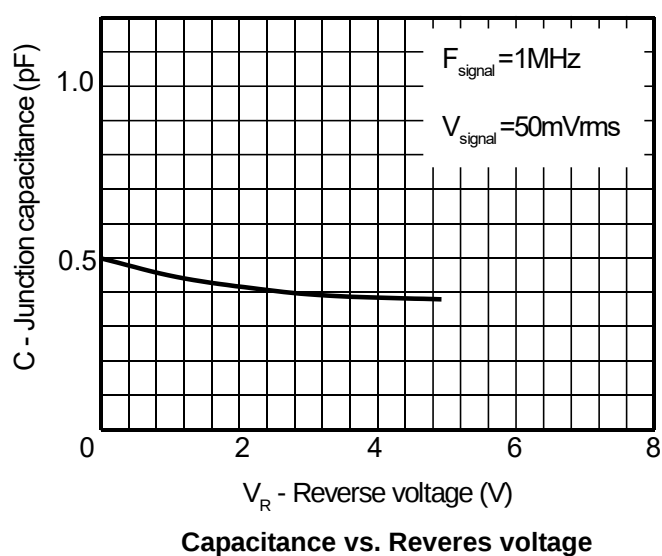
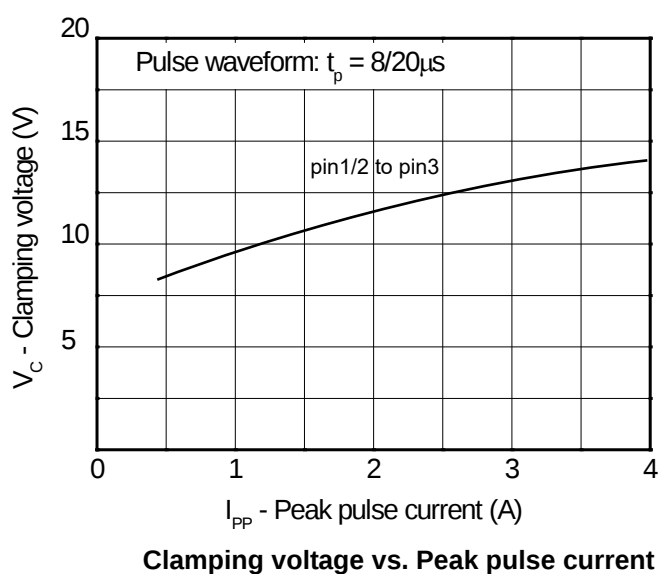
I_{PP} : Maximum peak current

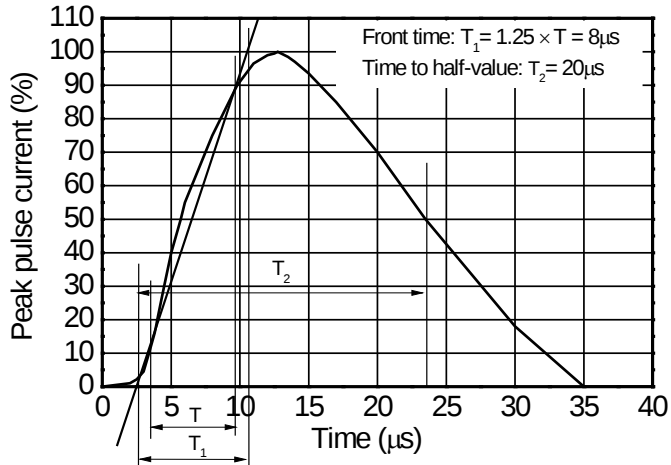


Maximum Rating

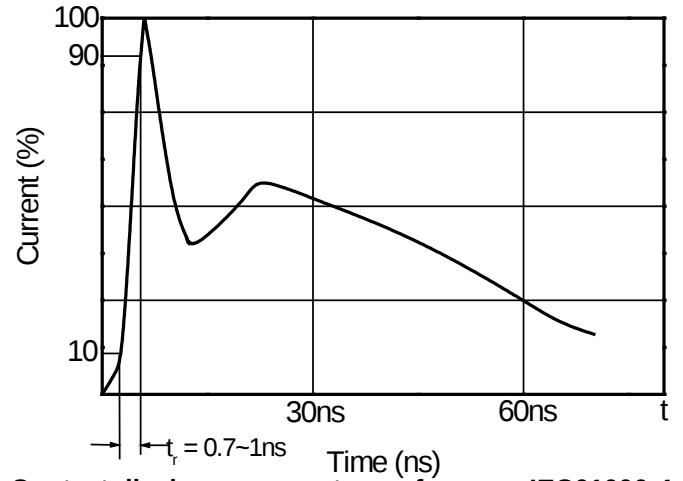
Rating	symbol	value	Units
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	4.0	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	± 15	KV
ESD per IEC61000-4-2(Air)		± 20	
Operating Temperature	T_J	-55~125	$^{\circ}C$
Storage Temperature	T_{STG}	-55~150	$^{\circ}C$

Typical characteristic

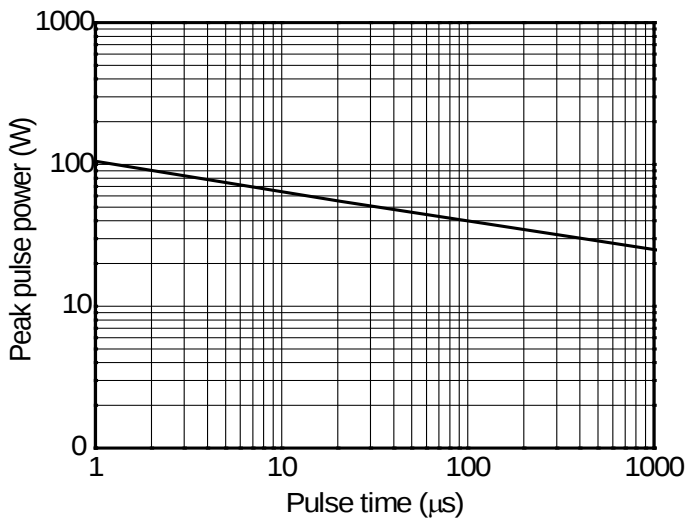




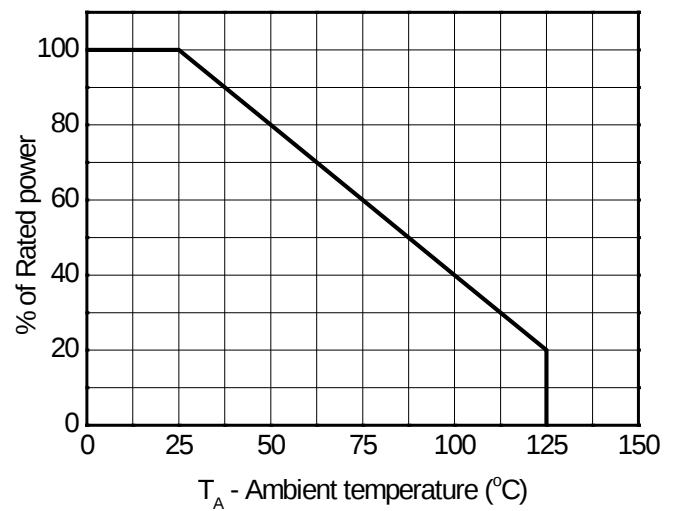
8/20 μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



Non-repetitive peak pulse power vs. Pulse time

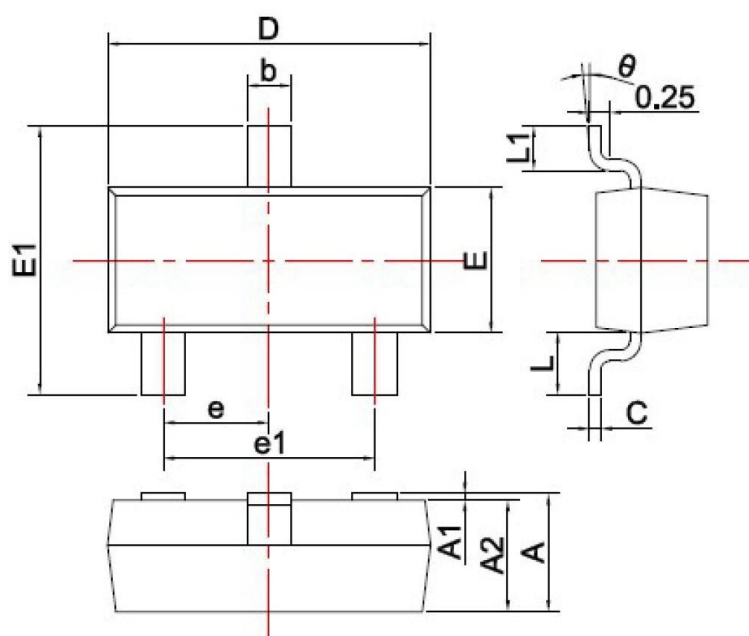


Power derating vs. Ambient temperature

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

Recommended Mounting Pad Layout

Unit:mm

