

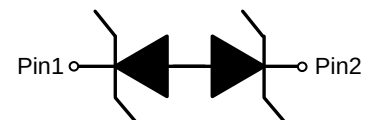
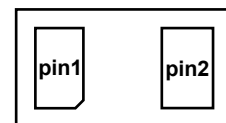
Desicription

- ◆ 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): $7.0\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $10\text{ pF}(\text{typical})@1\text{MHz}$
- ◆ Very low reverse current: $I_R < 0.1\mu\text{A}(\text{typical})$
- ◆ 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
ESD5E090TA	A	DFN0603-2L	15000/Tape&Reel

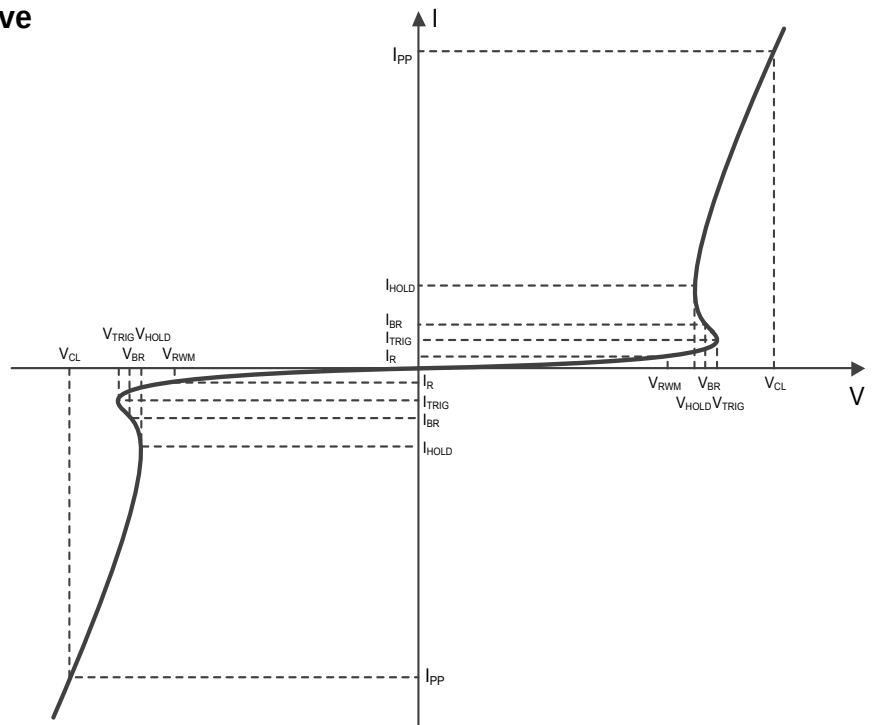
Electrical characteristic(T=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM}				± 5.0	V
Reverse leakage current	I_R	$V_{RWM}=5.0V$			0.1	μA
Reveres breakdown voltage	V_{BR}	$I_T=1mA$	5.5	6.2		V
Dynamic resistance	R_{DYN}			0.23		Ω
Peak pulse current	I_{PP}	$V_{C_{Max}} (8/20\mu s)$	5.5	7.0		A
Clamping voltage	V_C	$I_{PP}=1A(8/20\mu s)$		7.5		V
		$I_{pp}=7.0A(8/20\mu s)$		8.5	10.0	V
Junction capacitance	C_J	$V_R=0V f=1MHz$		10.0	15.0	pF

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

Electrical performance curve

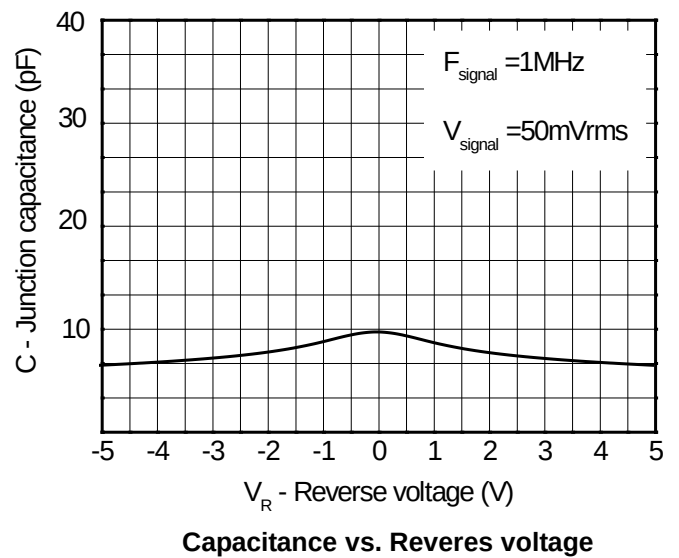
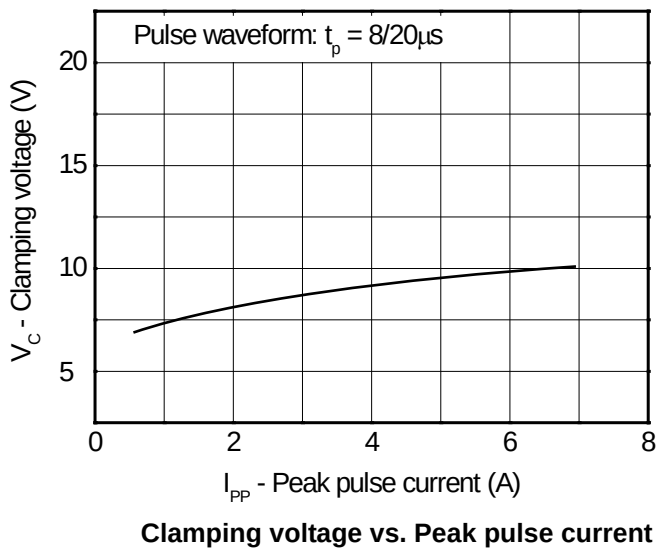
- V_{RWM} Reverse stand-off voltage
- I_R Reverse leakage current
- V_{CL} Clamping voltage
- I_{PP} Peak pulse current
- V_{TRIG} Reverse trigger voltage
- I_{TRIG} Reverse trigger current
- V_{BR} Reverse breakdown voltage
- I_{BR} Reverse breakdown current
- V_{HOLD} Reverse holding voltage
- I_{HOLD} Reverse holding current

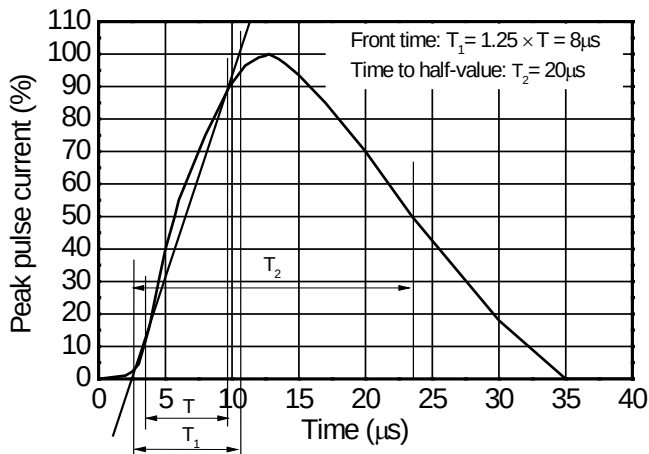


Maximum Rating

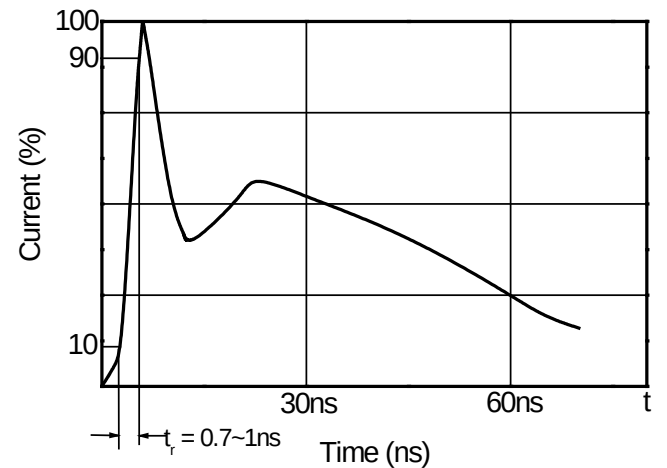
Rating	symbol	value	Units
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	7.0	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	± 30	KV
ESD per IEC61000-4-2(Air)		± 30	
Operating Temperature	T_J	-40~125	$^{\circ}C$
Storage Temperature	T_{STG}	-55~155	$^{\circ}C$

Typical characteristic

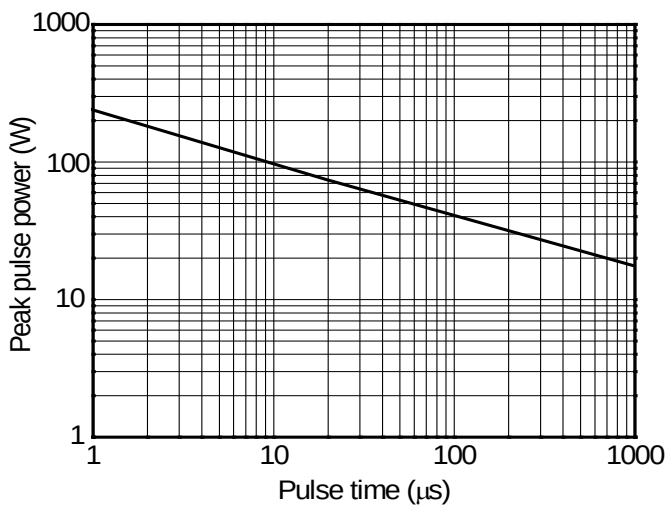




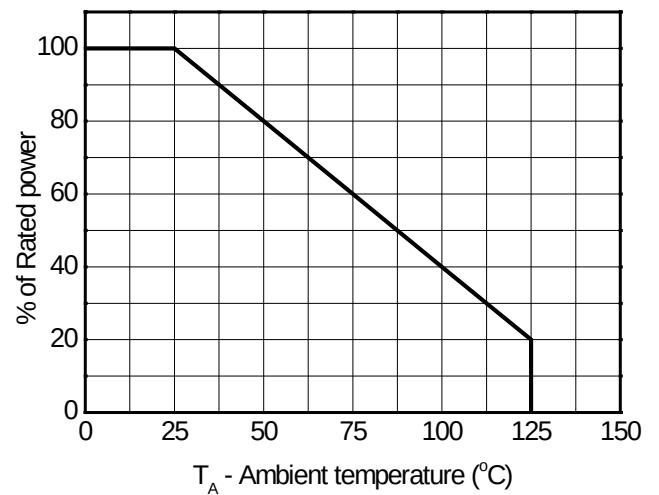
8/20µs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



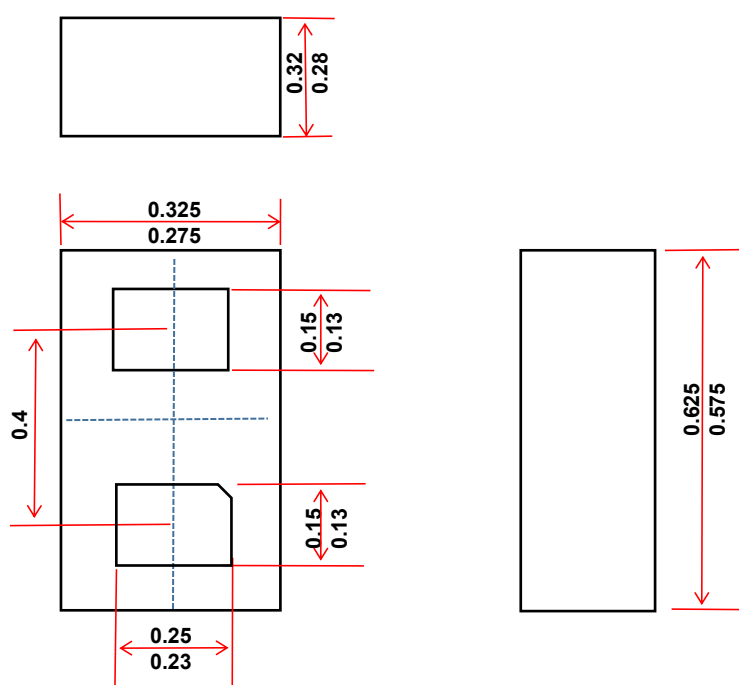
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

Dimension outline Unit:mm

DFN0603-2L(SOD962)



Recommended Mounting Pad Layout Unit:mm

