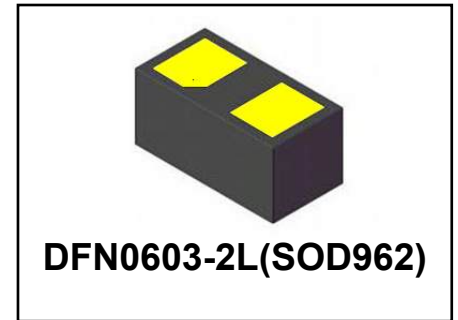


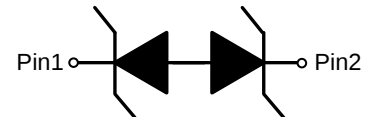
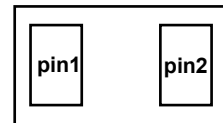
Desicription

- ◆ 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): $5.5\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $0.30\text{pF}(\text{typical})@1\text{MHz}$
- ◆ Very low reverse current: $I_R < 0.2\mu\text{A}(\text{typical})$
- ◆ Halogen free ,Lead free and RoHs
- ◆ Bi-directional



Application

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

Circuit Diagram

Marking Codes



Pin1 Identification

Note:

- (1) "5U" is device code, fixed.
- (2) "xx" is date code.

Order information

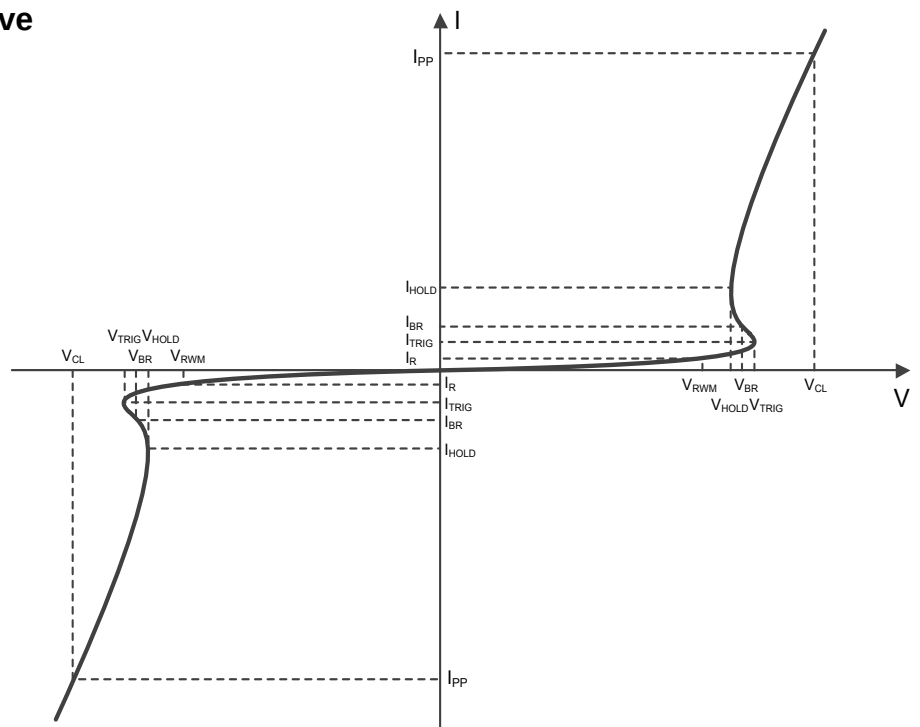
Model	Marking	Package	shipping
ESD5E003SA05	5U	DFN0603-2L	15000/Tape&Reel

Electrical characteristic(T=25°Cunless 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	uA
Reveres breakdown voltage	V_B	$I_T=1mA$	6.0	7.5	9.0	V
Dynamic resistance	R_{DYN}	$T_p=10/100ns$		0.22		Ω
Clamping voltage	V_C	$I_{PP}=16A, t_p=10/100ns$		8.0		V
		$I_{PP}= 5.5A, t_p=8/20us$		8.5	11.0	V
Junction capacitance	C_J	$V_R=0V f=1MHz$		0.25	0.40	pF
		$V_R=0V f=1GHz$		0.18		pF

Electrical performance curve

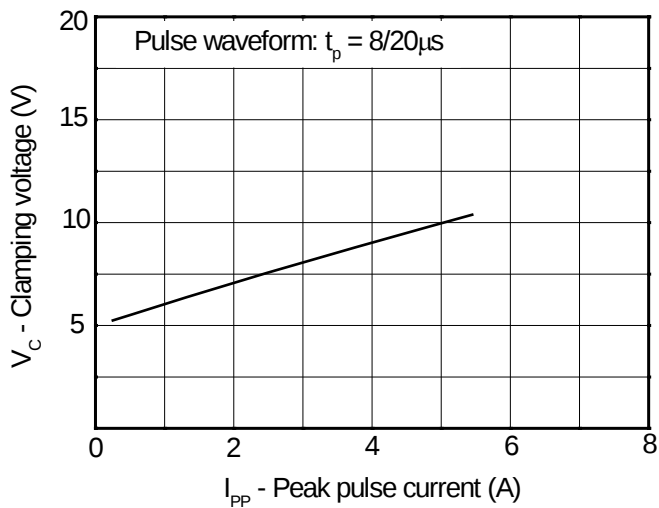
- V_{RWM} Reverse stand-off voltage
- I_R Reverse leakage current
- V_{CL} Clamping voltage
- I_{PP} Peak pulse current
- V_{TRIG} Reverse trigger voltage
- I_{TRIG} Reverse trigger current
- V_{BR} Reverse breakdown voltage
- I_{BR} Reverse breakdown current
- V_{HOLD} Reverse holding voltage
- I_{HOLD}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



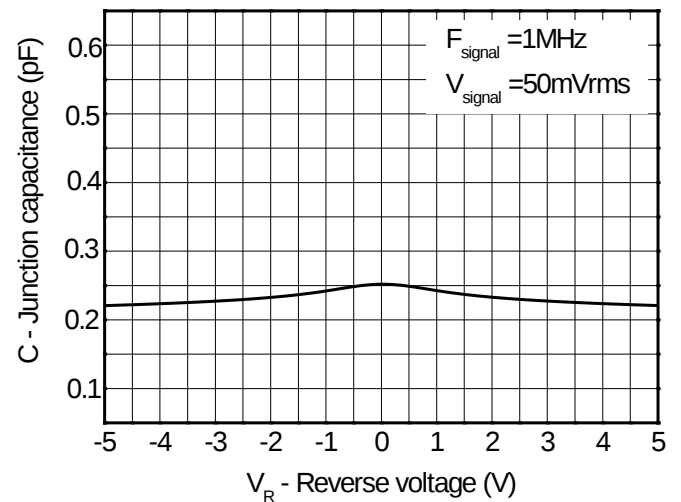
Maximum Rating

Rating	symbol	value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	60	W
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	5.5	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	$^{\circ}C$

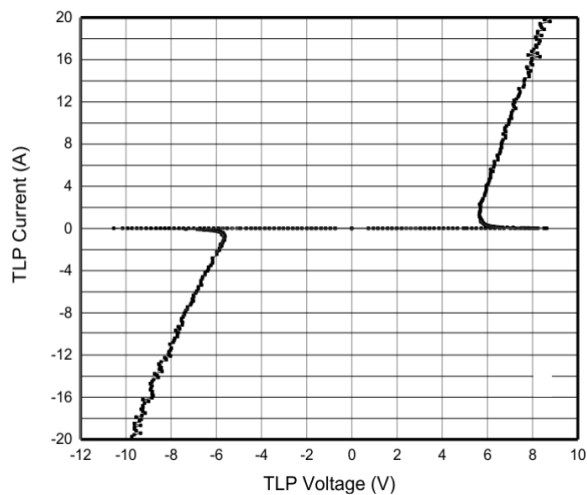
Typical characteristic



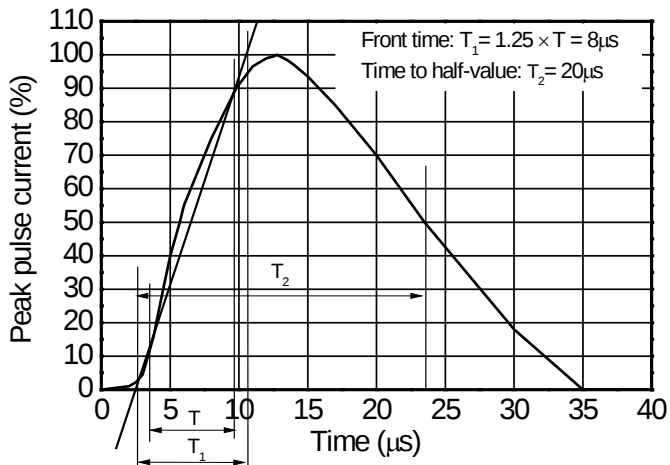
Clamping voltage vs. Peak pulse current



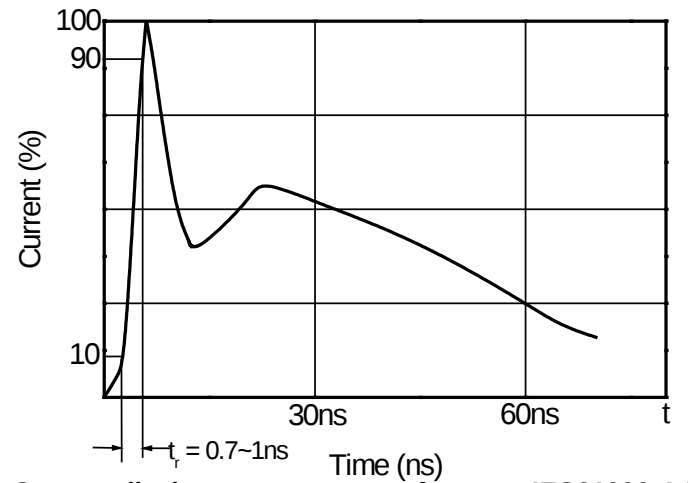
Capacitance vs. Reverses voltage



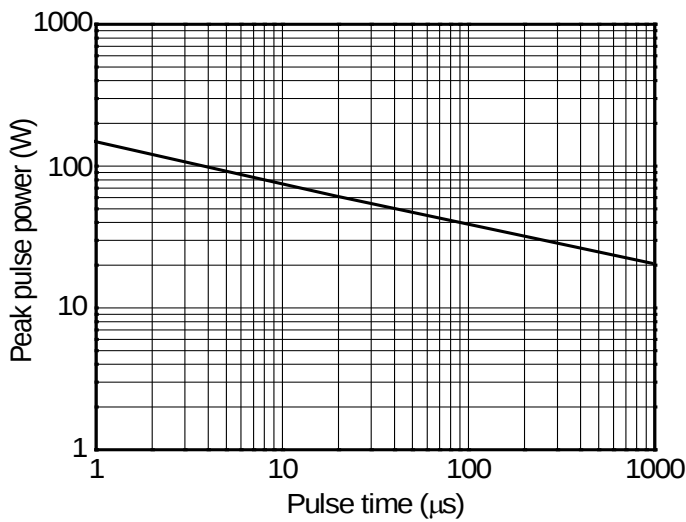
TLP Measurement



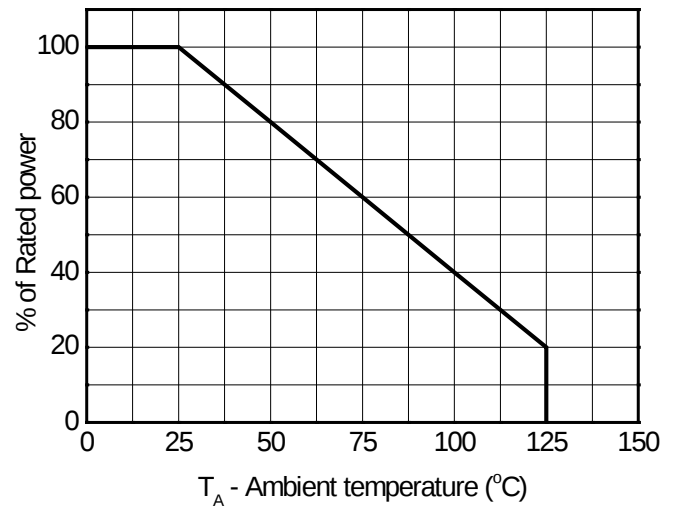
8/20 μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2



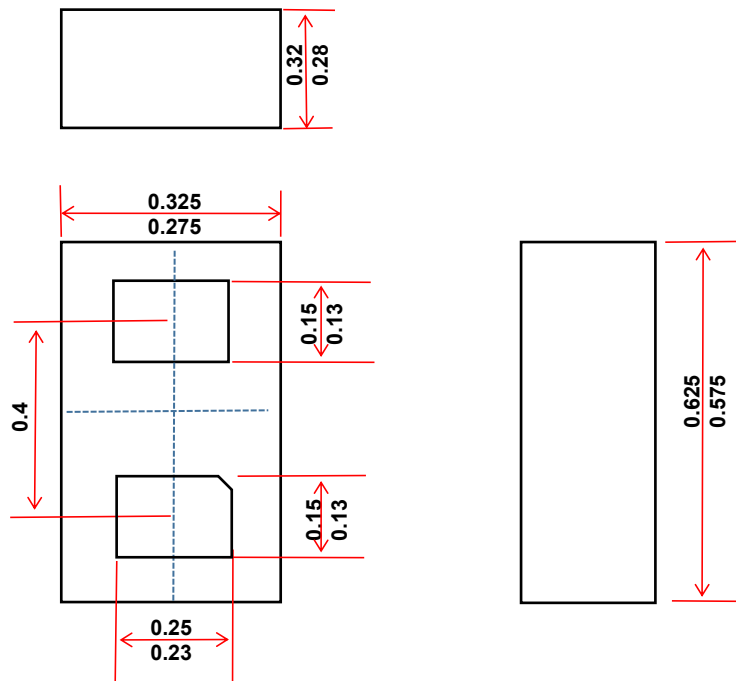
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

Dimension outline Unit:mm

DFN0603-2L(SOD962)



Recommended Mounting Pad Layout Unit:mm

