

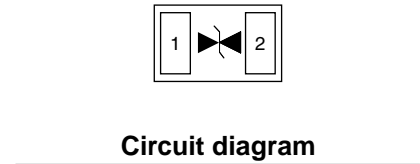
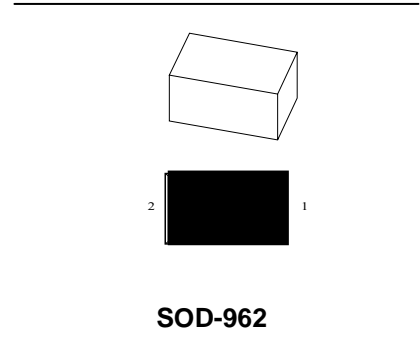
**1-Line, Bi-directional, Transient Voltage Suppressors**

**Descriptions**

The ESD3V3E100SA is a bi-directional TVS (Transient Voltage Suppressor). It is specifically designed to protect sensitive electronic components that may be subjected to ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.

The ESD3V3E100SA may be used to provide ESD protection 30KV Air, 30KV contact compliance to IEC61000 -4-2, and withstand peak pulse current up to 8 A (8/20µs) according to IEC61000-4-5.

The ESD3V3E100SA is available in SOD-962 package. Standard products are Pb-free and Halogen-free.



**Features**

- Stand-off voltage: ±3.3V Max
- Transient protection for each line according to IEC61000-4-2 (ESD): ±30KV Air, ±30KV contact IEC61000-4-5 (Surge): 8 A (8/20µs)
- Solid-state silicon technology
- Low leakage current

**Applications**

- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Digital Cameras
- CAR/MID DVD/MP3/MP4/PMP Players

**Order information**

Device	Mark	Package	Shipping
ESD3V3E100SA	B	SOD-962	15000/Tape&Reel

**Absolute maximum ratings**

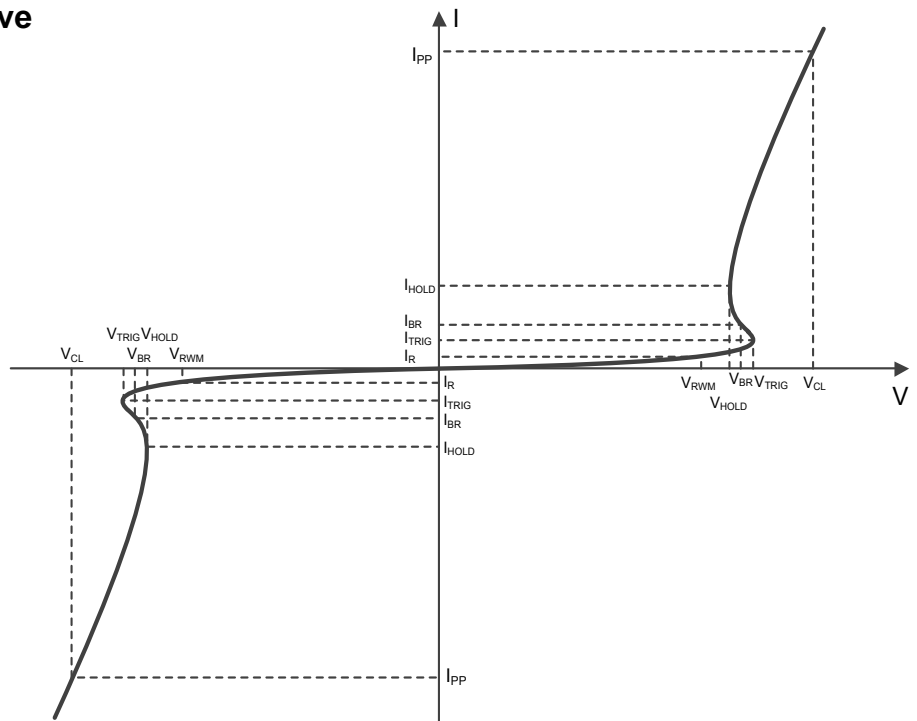
Parameter	Symbol	Rating	Unit
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	8	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	kV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
Operating temperature	$T_{OP}$	-40~85	$^{\circ}C$
Operation junction temperature	$T_J$	125	$^{\circ}C$
Lead temperature	$T_L$	260	$^{\circ}C$
Storage temperature	$T_{STG}$	-55~150	$^{\circ}C$

**Electrical characteristics (TA=25 °C , unless otherwise noted)**

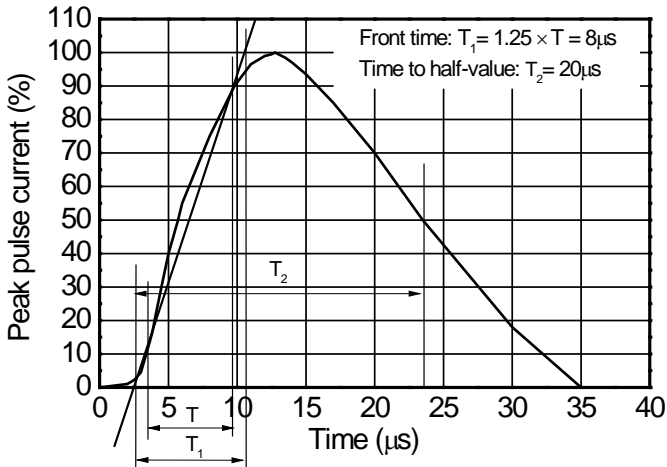
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	$V_{RWM}$				$\pm 3.3$	V
Reverse leakage current	$I_R$	$V_{RWM} = 3.3V$			100	nA
Reveres breakdown voltage	$V_{BR}$	$I_T=1mA$	4.2	5.5	6.5	V
Clamping voltage	$V_C$	$I_{pp}=1A$ $t_p=8/20\mu s$			7.0	V
		$I_{pp}=8A$ $t_p=8/20\mu s$			9.0	V
Junction capacitance	$C_J$	$V_R = 0V, f = 1MHz$		15	20	pF

**Electrical performance curve**

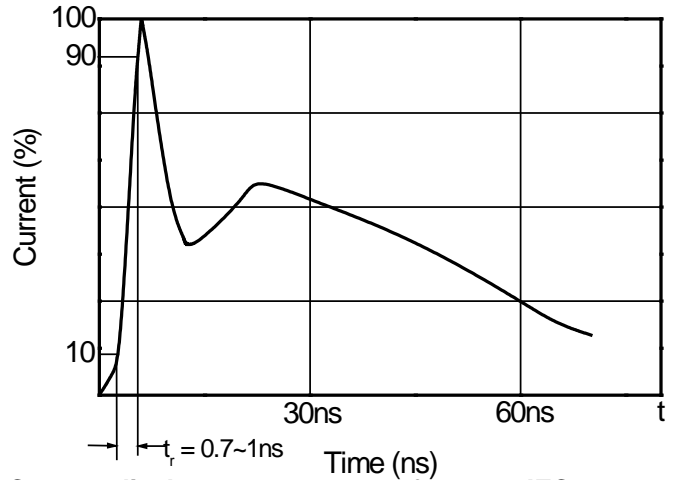
- $V_{RWM}$  Reverse stand-off voltage
- $I_R$  Reverse leakage current
- $V_{CL}$  Clamping voltage
- $I_{PP}$  Peak pulse current
- $V_{TRIG}$  Reverse trigger voltage
- $I_{TRIG}$  Reverse trigger current
- $V_{BR}$  Reverse breakdown voltage
- $I_{BR}$  Reverse breakdown current
- $V_{HOLD}$  Reverse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



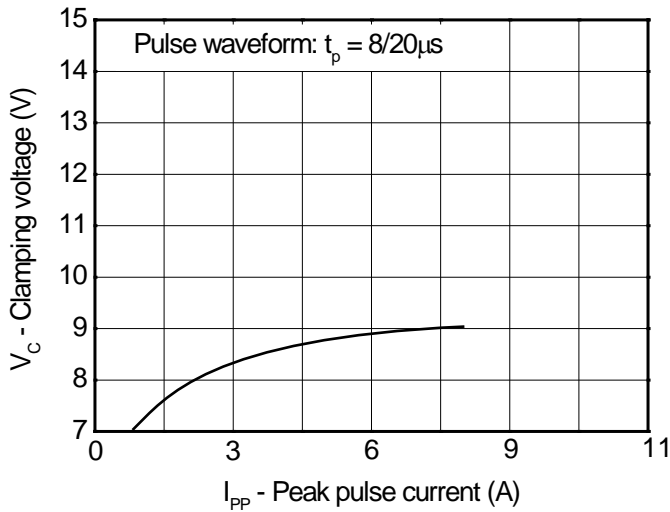
**Typical characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)**



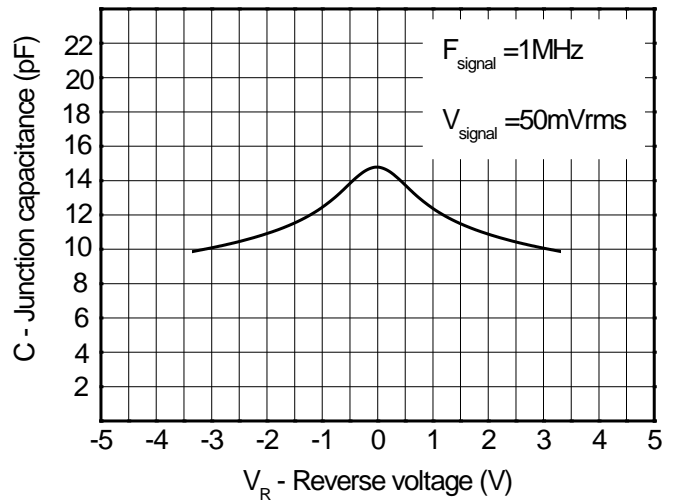
**8/20μs waveform per IEC61000-4-5**



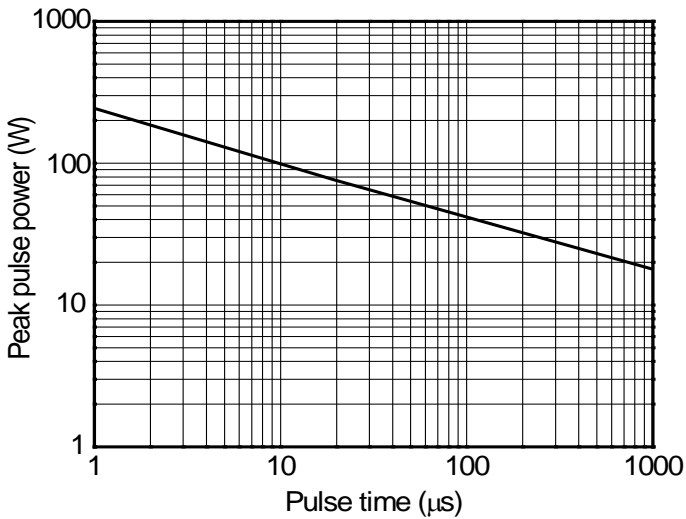
**Contact discharge current waveform per IEC61000-4-2**



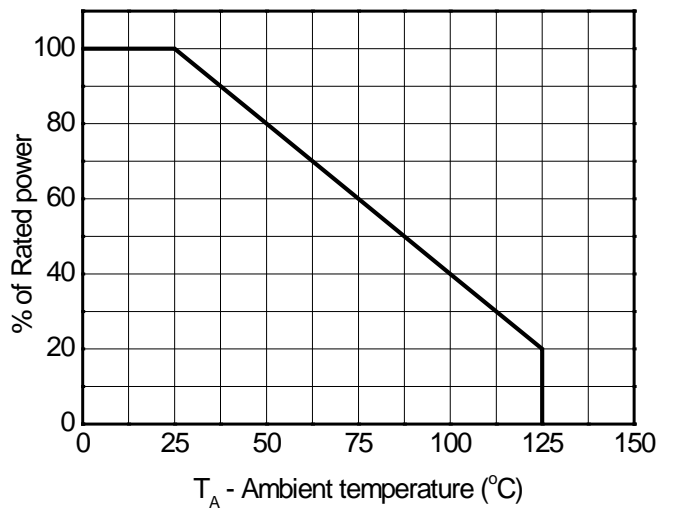
**Clamping voltage vs. Peak pulse current**



**Capacitance vs. Revers voltage**

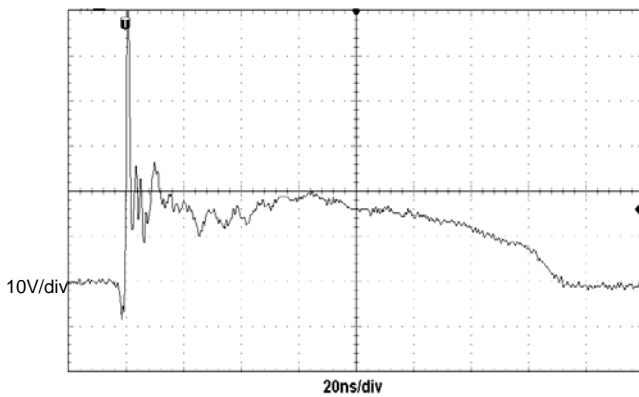
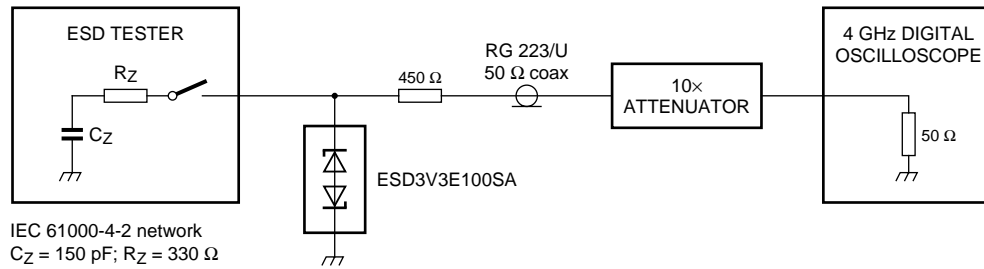


**Non-repetitive peak pulse power vs. Pulse time**

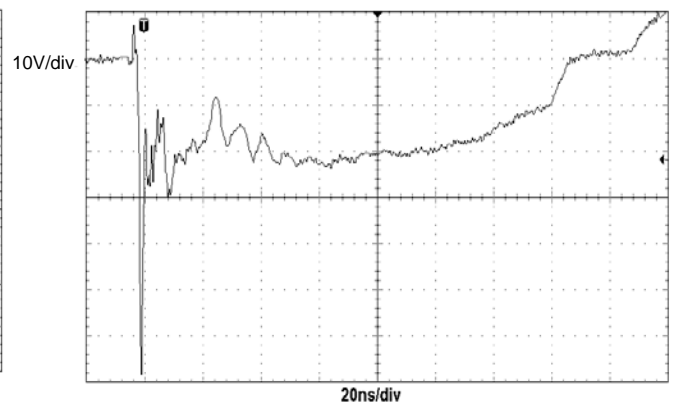


**Power derating vs. Ambient temperature**

ESD clamping test setup and waveforms



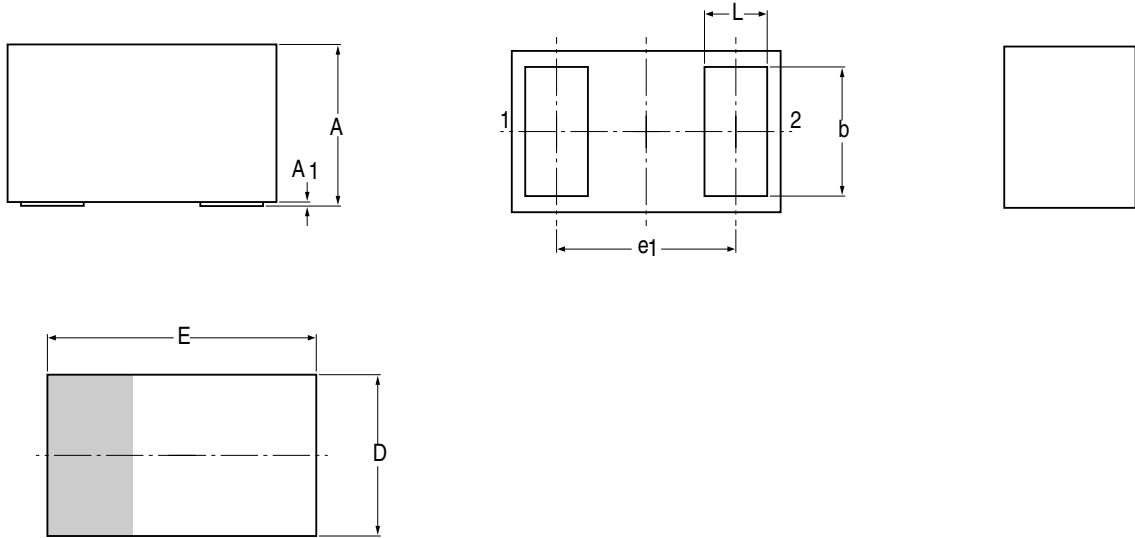
**ESD clamping**  
 (+8kV contact discharge per IEC61000-4-2)



**ESD clamping**  
 (-8kV contact discharge per IEC61000-4-2)

**Package outline dimensions**

**SOD-962**



**Dimensions**

Unit	A <sup>(1)</sup>	A <sub>1</sub>	b	D	E	e <sub>1</sub>	L
max	0.32	0.0076	0.25	0.325	0.625		0.15
nom						0.4	
min	0.28		0.23	0.275	0.575		0.13

**Note**

- 1. Dimension A is including coating foil thickness.
- 2. The marking bar indicates the cathode.

**attern (Unit: mm)**

**Recommended Mounting Pad Layout** Unit:mm

