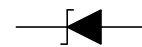


**ESD5Z3V3**
**1-Line Uni-directional Transient Voltage Suppressors**
[Http://www.willsemi.com](http://www.willsemi.com)
**Descriptions**

The ESD5Z3V3 is a transient voltage suppressors (TVS) which provide a very high level protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is designed to replace multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

The ESD5Z3V3 was past ESD transient voltage up to  $\pm 30\text{kV}$  (contact) according to IEC61000-4-2 and withstand peak current up to 9A for 8/20us pulse according to IEC61000-4-5.

The ESD5Z3V3 is available in SOD-523 package. Standard products are Pb-free and Halogen-free.


**SOD-523**

**Pin configuration (Top view)**

**SOD-523**

**5** = Device code  
**\*** = Month code (A~Z)  
**Marking**

**Features**

- Working voltage : 3.3V
- Peak power (tp=8/20us) : 108W
- ESD protection
  - IEC61000-4-2 (Contact) :  $\pm 30\text{kV}$
  - IEC61000-4-2 (Air) :  $\pm 30\text{kV}$
- Low leakage current
- Small package

**Applications**

- Mobile phone
- PAD
- Notebook
- STB
- LCD TV
- Digital camera
- Other electronics equipments

**Order information**

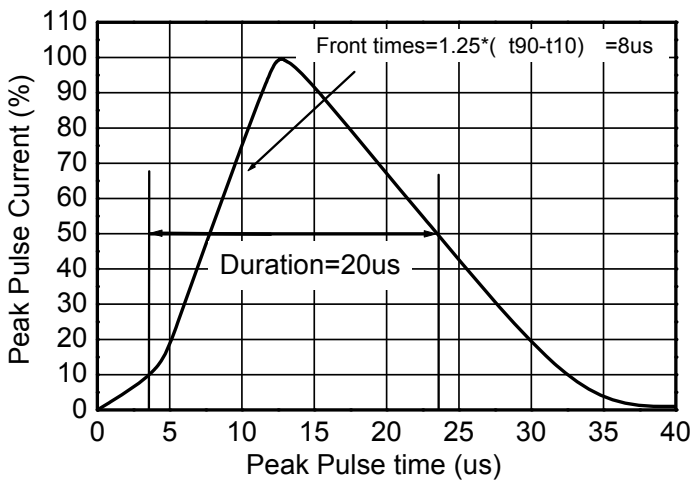
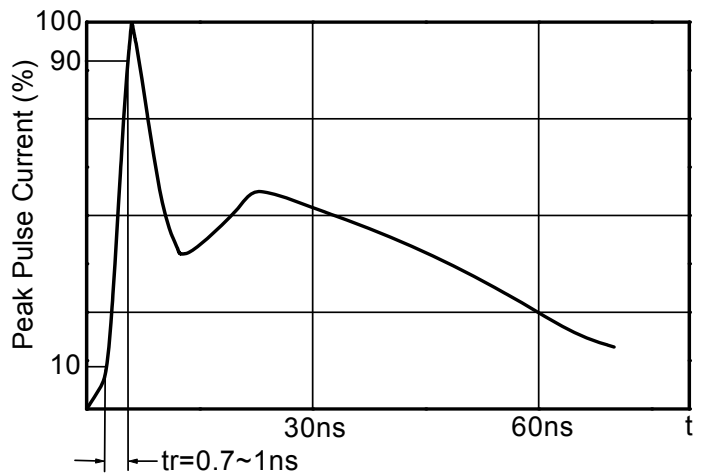
Device	Package	Shipping
ESD5Z3V3-2/TR	SOD-523	3000/Tape&Reel

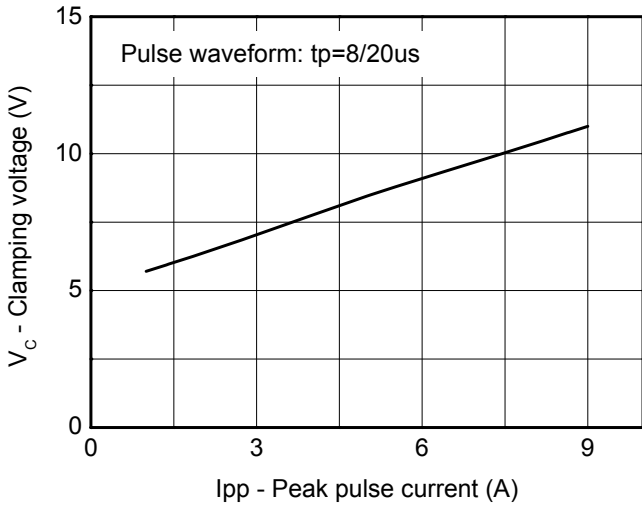
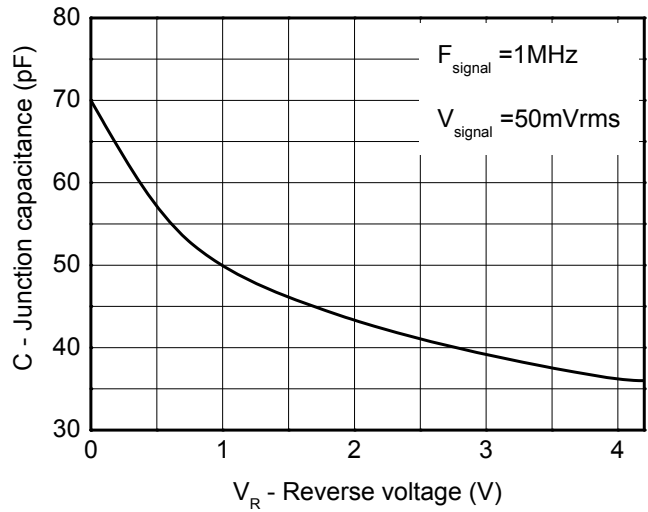
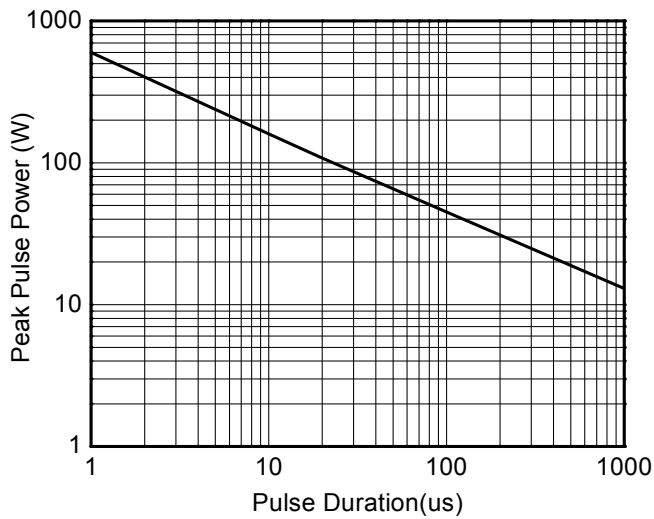
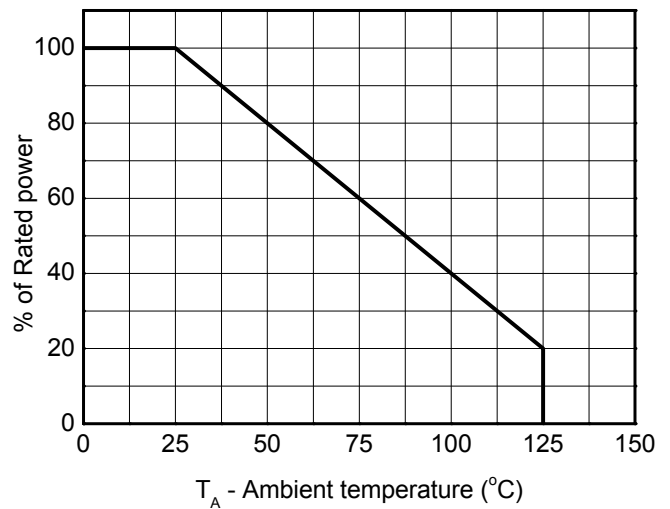
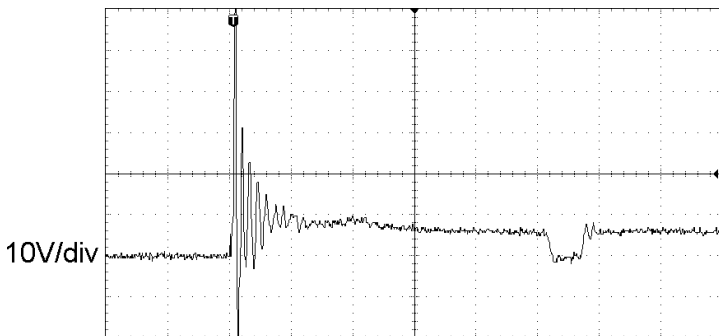
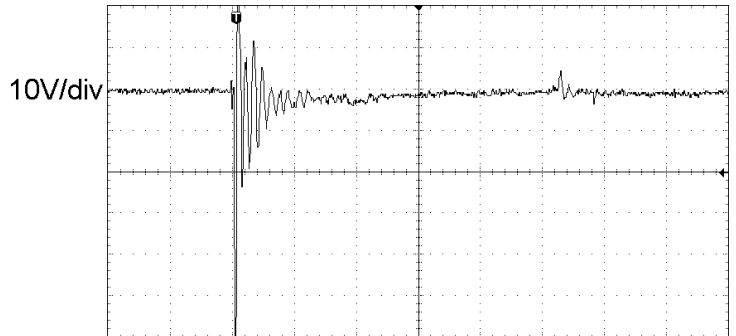
**Absolute maximum ratings**

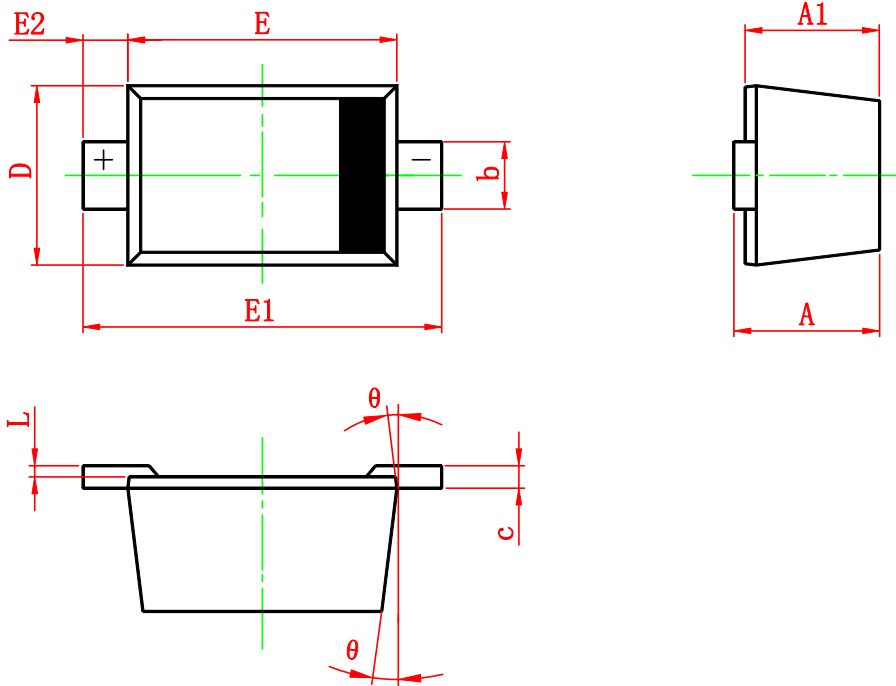
Parameter	Symbol	Rating	Unit
Peak pulse power (tp=8/20us)	Ppk	108	W
Peak pulse current (tp=8/20us)	Ipp	9	A
ESD voltage IEC61000-4-2 air	V <sub>ESD</sub>	±30	kV
ESD voltage IEC61000-4-2 contact		±30	
Junction temperature	T <sub>J</sub>	125	°C
Operating temperature	T <sub>OP</sub>	-40~85	°C
Lead temperature	T <sub>L</sub>	260	°C
Storage temperature	T <sub>STG</sub>	-55~150	°C

**Electronics characteristics (Ta=25 °C, unless otherwise noted)**

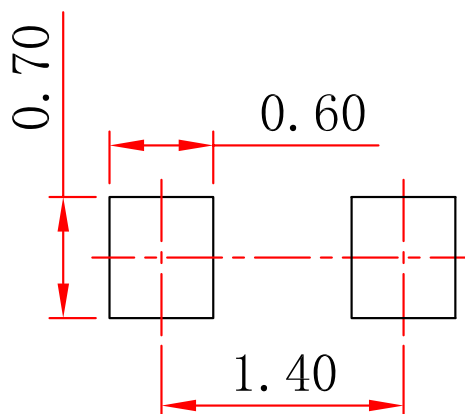
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse maximum working voltage	V <sub>RWM</sub>				3.3	V
Reverse leakage current	I <sub>R</sub>	V <sub>RWM</sub> =1V			0.1	uA
		V <sub>RWM</sub> =4.2V			10	uA
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	4.8	5.2	5.4	V
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =-10mA	0.55	0.8	1.25	V
Clamping voltage	V <sub>C</sub>	I <sub>pp</sub> =1A tp=8/20us			6.5	V
		I <sub>pp</sub> =9A tp=8/20us			12	V
Junction capacitance	C	F=1MHz, V <sub>R</sub> =0V		70	90	pF


**8/20us waveform**

**IEC61000-4-2 waveform**

**Typical characteristics (Ta=25°C, unless otherwise noted)**

**Clamping voltage vs. Peak pulse current**

**Capacitance vs. Reverse voltage**

**Non-Repetitive Peak Pulse Power vs. Pulse time**

**Power derating vs. Temperature**

**ESD Clamping  
(IEC61000-4-2 +8kV contact)**

**ESD Clamping  
(IEC61000-4-2 -8kV contact)**

**Package outline dimensions**
**SOD-523**


Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.510		0.770
A1	0.500		0.700
b	0.250	0.300	0.350
c	0.080		0.150
D	0.750	0.800	0.850
E	1.100	1.200	1.300
E1	1.500	1.600	1.700
E2	0.200 Ref.		
L	0.010		0.070
$\theta$	0°		8°

**Recommend PCB Layout (Unit: mm)**


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