

ESD5Z3.3C

Surface Mount Bi-Directional TVS For ESD Protection Diode 3.3V

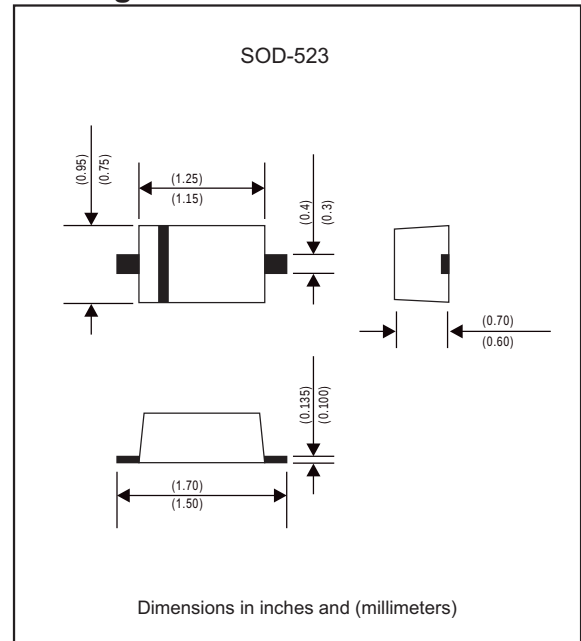
Features

- Bi-directional ESD protection of one line
- Low capacitance: 15pF(Max.)
- Reverse stand-off voltage: 3.3V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 1.0mm×0.6mm×0.5mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

Applications

- Computers and peripherals
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection
- Portable electronics
- FireWire
- Other electronics equipments communication systems

Package outline



Maximum ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Total power dissipation	on FR-5 Board, @ $T_A=25^\circ\text{C}$	P_{PP}	70	W
Lead solder temperature -maximum		T_L	260(10s)	$^\circ\text{C}$
Operating junction temperature range		T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Part No.	V_{RWM} (V)	$I_R(\mu\text{A})$ @ V_{RWM}	$V_{BR}(V)$ @ I_T (Note 2)		I_T (mA)	$V_C(V)$ @ $I_{PP}=1.0\text{A}$ (Note 1) Max	$I_{PP}(A)$ (Note 1) Max	$V_C(V)$ @Max I_{PP} (Note 1) Max	P_{PK} (W) (Note 1) Max	$C_T(pF)$ $V_R=0V$ and $f=1\text{MHz}$ Typ.
	Max	Max	Min.	Max.						
ESD5Z3.3C	3.3	0.1	3.5	5.0	1.0	6.5	10.0	10.0	100	15

Note 1: Surge current waveform per Fig.1

2: V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C

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MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}^{(1)}$	± 25	kV
Air Model			
Contact Model		± 25	
JESD22-A114-B ESD Voltage		± 16	
ESD Voltage	Machine Model	± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	70	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	7	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

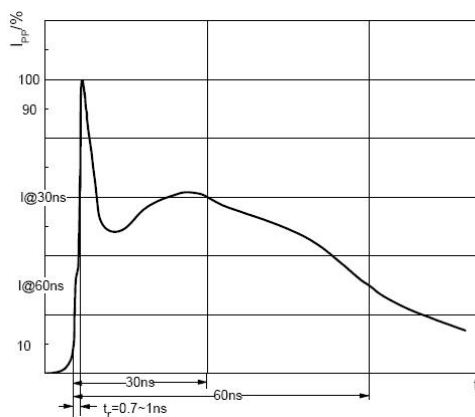
ESD standards compliance

IEC61000-4-2 Standard

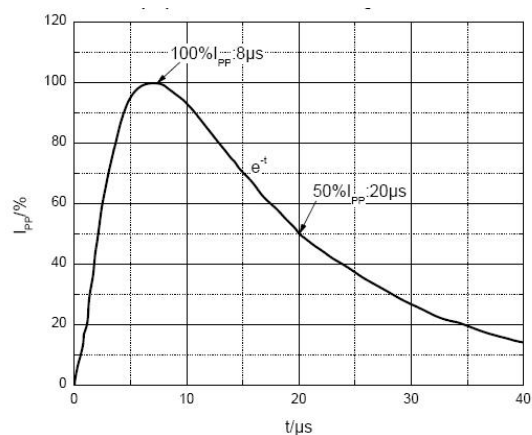
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999



ESD pulse waveform according to IEC61000-4-2

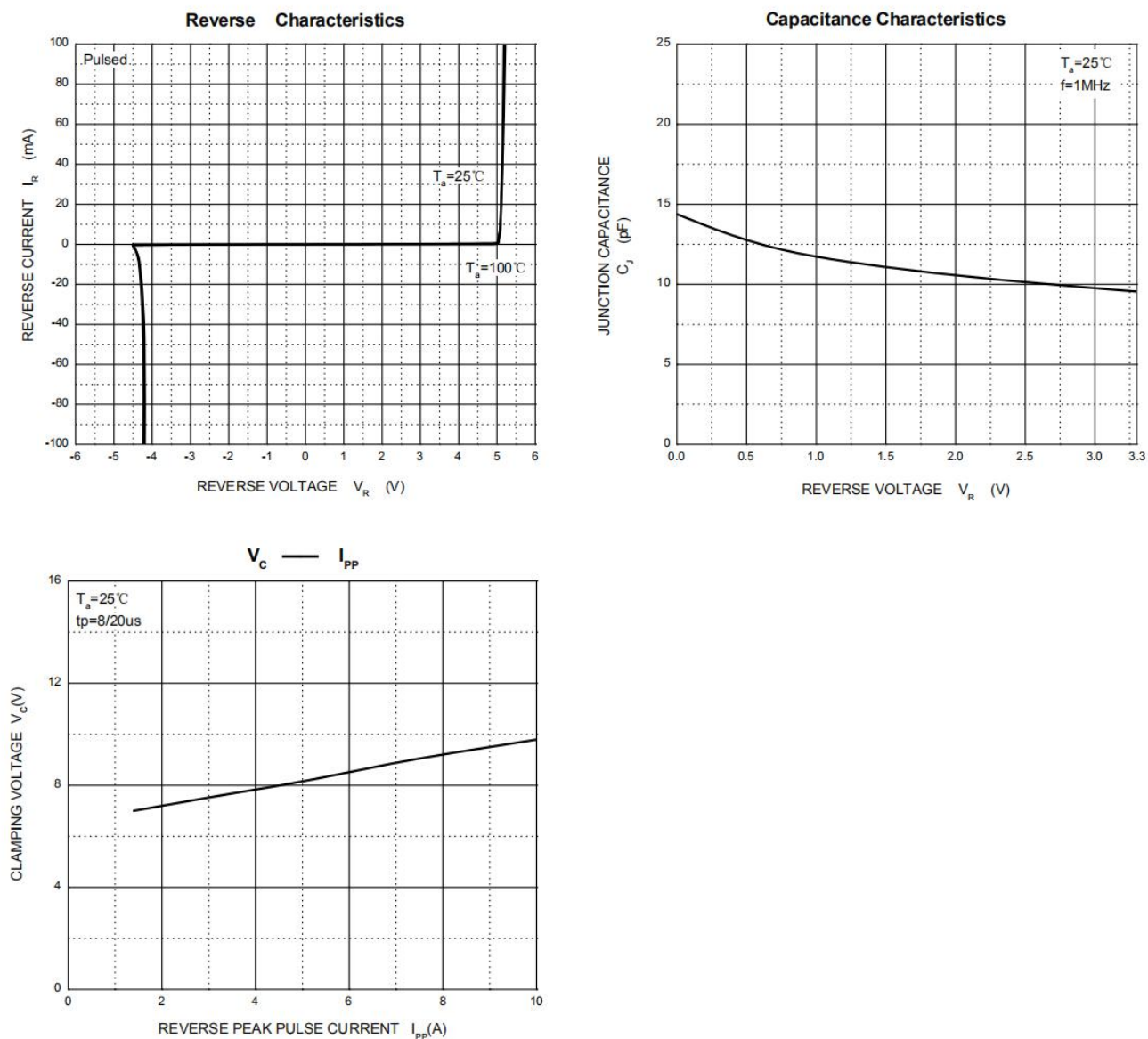


8/20 μs pulse waveform according to IEC 61000-4-5

ESD5Z3.3C

Rating and characteristic curves

TYPICAL CHARACTERISTICS



ESD5Z3.3C

Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
ESD5Z3.3C	5*

5*:5=Devicre code
*=Month code(A~Z)