

ESD3Z SERIES SMD Transient Voltage Suppressor For ESD protection

Surface Mount Uni-Directional TVS For ESD Protection Diode - 3.3V - 12V

Features

- This series is designed for average power 350W approximated ESD protection, different V_{RWM} , different peak pulse power available.
- Protects one I/O or power line.
- Low clamping voltage.
- Working voltages: 3.3V, 5.0V, 12V
- Low leakage current.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free part, ex.ESD3Z3.3-H.

IEC compatibility

- IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 24A (8/20us)

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Peripherals
- Pagers

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.005 gram

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

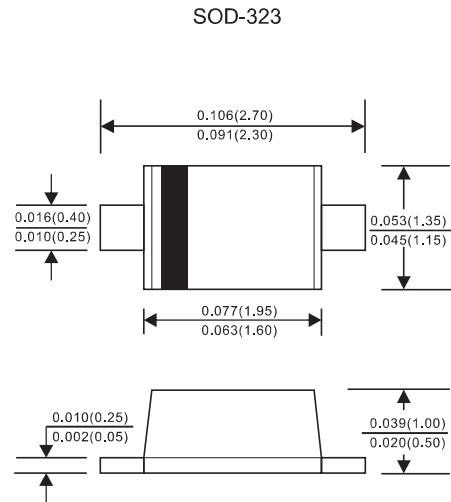
PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Lead solder temperature-maximum	10 second duration	T_L	260	$^\circ C$
Operating junction temperature range		T_J	-55 to +150	$^\circ C$
Operating & Storage Temperature Range		T_{STG}	-55 to +150	$^\circ C$

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

Part No.	V_{RWM} (V) (Max.)	I_R (uA) @ V_{RWM} (Max.)	V_{BR} (V) @ I_T (Note 2) (Min.)	I_T (mA)	V_C (V) @ $I_{PP}=1.0A$ (Max.)	I_{PP} (A) (Max.)	V_C (V)(Note 1) @Max I_{PP} (Max.)	P_{PK} (W) (Note 1) (Max.)	C_J (pF) (Typ.)
ESD3Z3.3	3.3	10	5.0	1.0	7.5	8.5	10.5	90	45
ESD3Z5.0	5.0	10	6.2	1.0	9.8	24.0	14.5	350	235
ESD3Z12	12	1	13.3	1.0	19.0	14.0	25.0	350	100

Notes 1: Surge current waveform per Fig.1

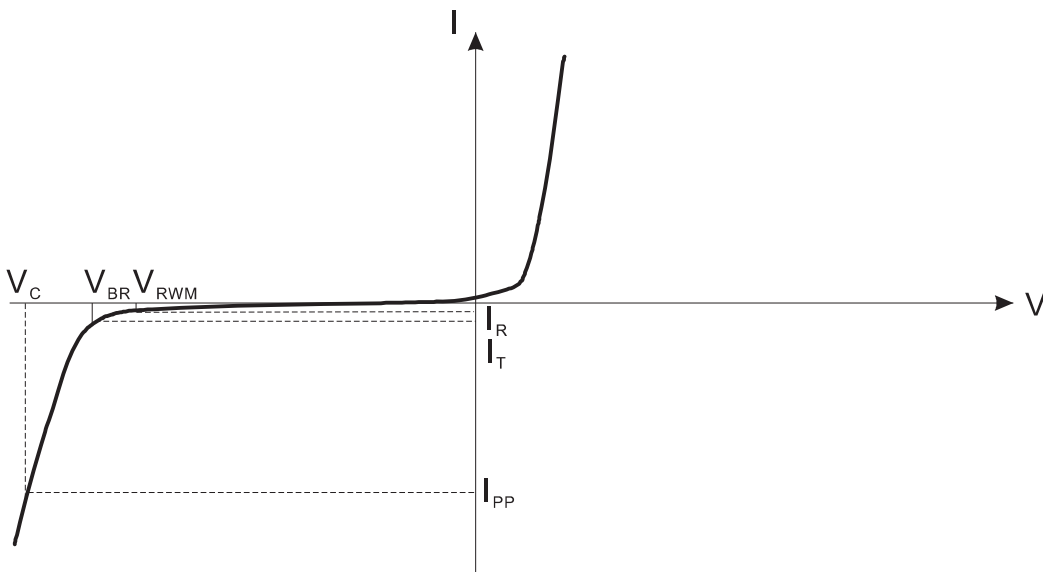
2: V_{BR} is measured with a pulse test current I_T at an ambient temperature of $25^\circ C$.



Dimensions in inches and (millimeters)

ESD3Z SERIES SMD Transient Voltage Suppressor For ESD protection

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



Uni-Directional TVS

- V_C : Clamping voltage @ I_{PP}
- I_{PP} : Maximum reverse peak pulse current
- V_{RWM} : Maximum working peak reverse voltage
- I_R : Maximum reverse leakage current @ V_{RWM}
- V_{BR} : Breakdown voltage @ I_T
- I_T : Test current
- C_J : Max. capacitance @ $V_R = 0\text{V}$ and $f = 1\text{MHz}$

Rating and characteristic curves (ESD3Z SERIES)

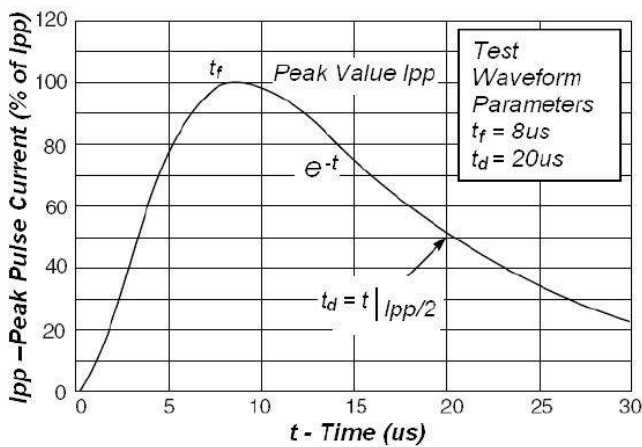


Fig1. Pulse Waveform

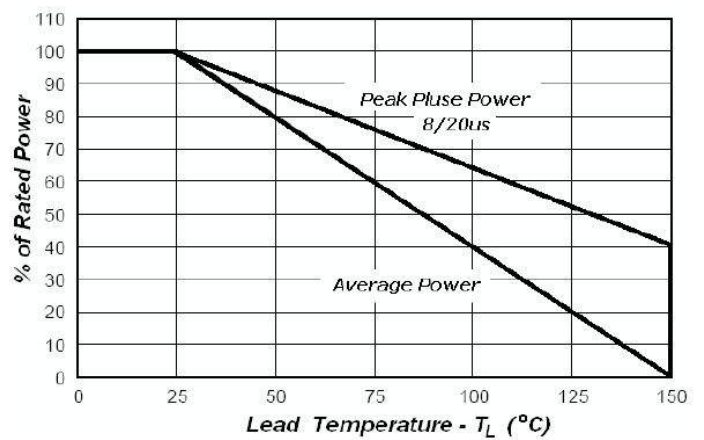
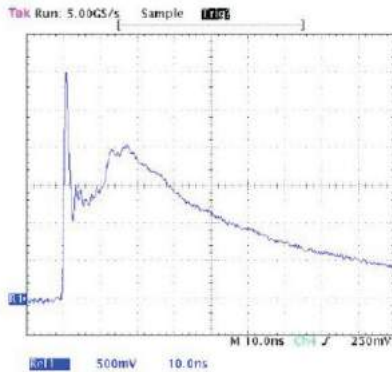




Fig2. Power Derating

ESD3Z SERIES SMD Transient Voltage Suppressor For ESD protection

ESD Pulse Waveform (Per IEC 61000-4-2)



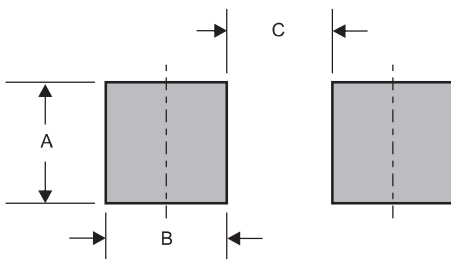
Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
ESD3Z3.3	E2
ESD3Z5.0	E5
ESD3Z12	E6

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-323	0.033 (0.83)	0.025 (0.63)	0.063 (1.60)