

ESD3ZxxC SERIES

Surface Mount Bi-Directional TVS For ESD Protection Diode - 3.3V - 36V

Features

- This series is designed for average power 320W 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, 15V, 18V, 24V, 36V.
- Low leakage current.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free.

IEC compatibility

- IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

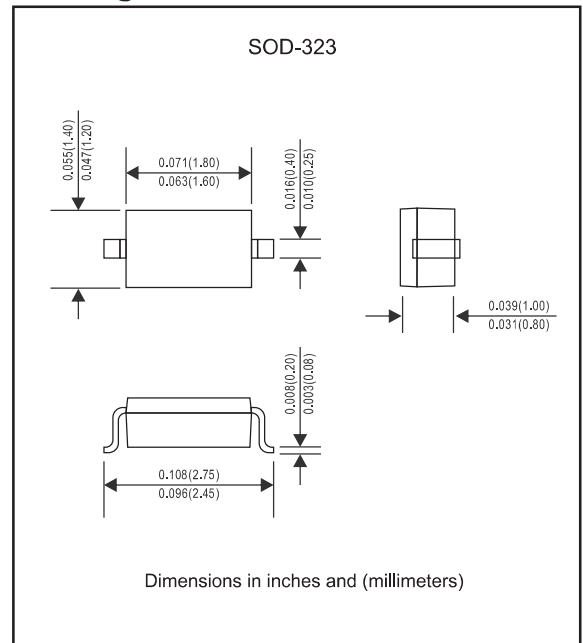
Applications

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

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Package outline



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

PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Total power dissipation	Peak pulse power ($t_p = 8/20\mu\text{s}$)	P_{PP}	320	W
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)

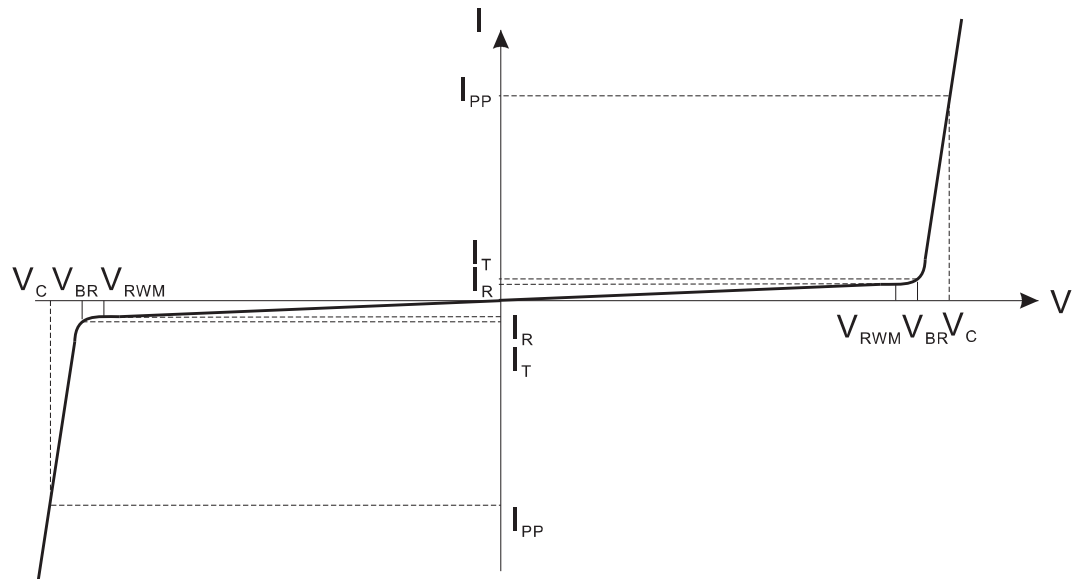
Part No.	V_{RWM} (V) (Max.)	$I_R(\mu\text{A})$ @ V_{RWM} (Max.)	V_{BR} (V) @ I_T (Note 2) (Min.)	I_T (mA)	V_C (V) @ $I_{PP}=1.0\text{A}$ (Max.)	I_{PP} (A) (Max.)	V_C (V) @ I_{PP} (Max.)	C_J (pF) (Max.)
ESD3Z3.3C	3.3	200	4.0	1.0	7.0	25.0	16.0	350
ESD3Z5.0C	5.0	10	6.0	1.0	9.8	24.0	17.0	260
ESD3Z12C	12	1	13.3	1.0	19.0	13.0	25.0	110
ESD3Z15C	15	1	16.7	1.0	24.0	9.0	32.0	100
ESD3Z18C	18	1	20.0	1.0	29.0	15.0	40.0	57
ESD3Z24C	24	1	26.7	1.0	43.0	6.0	52.0	75
ESD3Z36C	36	1	40.0	1.0	60.0	4.0	75.0	35

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



Bi-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 (ESD3ZxxC SERIES)

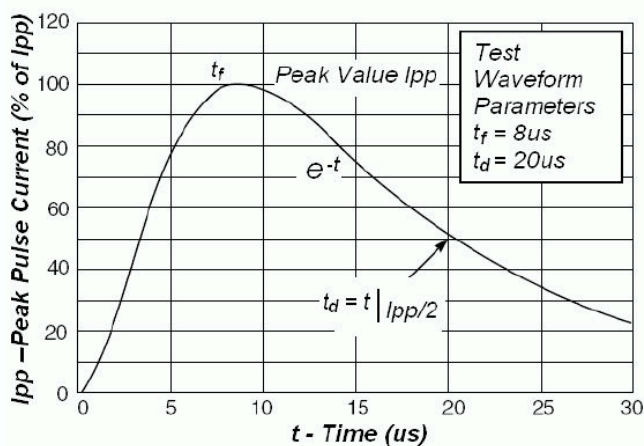


Fig1. Pulse Waveform

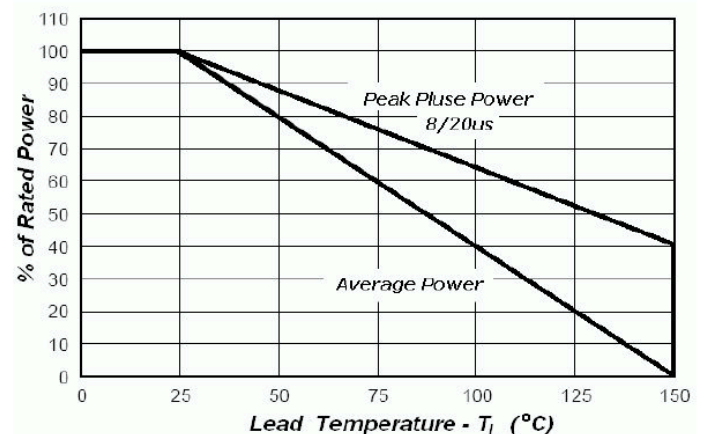
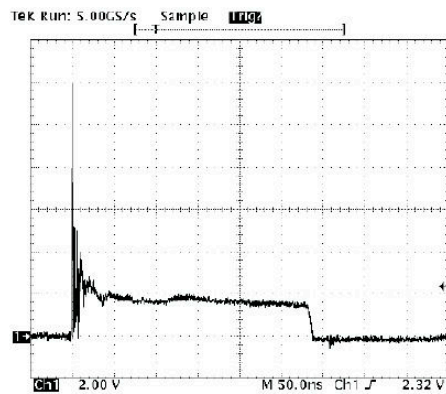


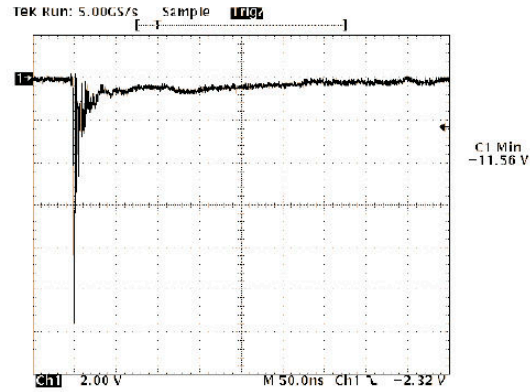
Fig2. Power Derating

ESD3ZxxC SERIES

ESD Clamping
(8kV Contact per IEC 61000-4-2)



ESD Clamping
(-8kV Contact per IEC 61000-4-2)



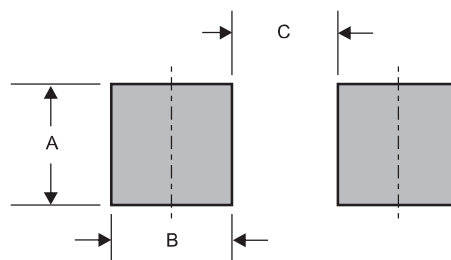
Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
ESD3Z3.3C	03B/2A
ESD3Z5.0C	05B/3M
ESD3Z12C	12B/12C
ESD3Z15C	15B/2J
ESD3Z18C	18C
ESD3Z24C	24B/M
ESD3Z36C	2N

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)