

### 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
- Suffix "-H" indicates Halogen-free part, ex.ESD3Z3.3C-H.

### IEC compatibility

- IEC61000-4-2 (ESD)  $\pm 25kV$  (air),  $\pm 20kV$  (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 8A (8/20us)

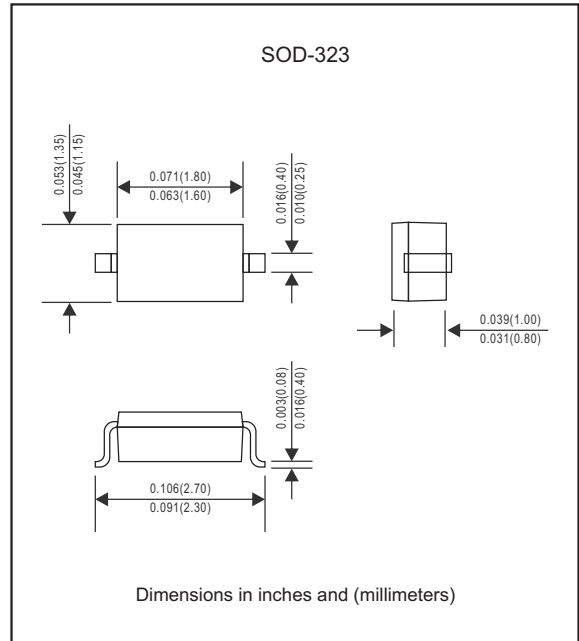
### Applications

- 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 $T_A=25^\circ C$ unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Total power dissipation	Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{PP}$	320	W
Operating junction temperature range		$T_J$	-55 to +150	$^\circ C$
Storage temperature range		$T_{STG}$	-55 to +150	$^\circ C$

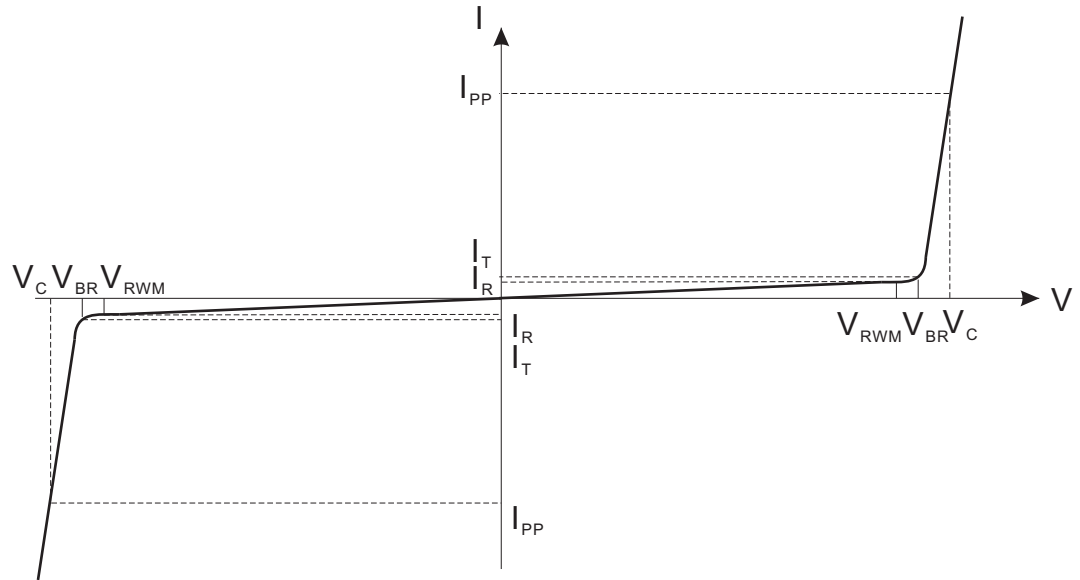
### Electrical characteristics (at $T_A=25^\circ C$ unless otherwise noted)

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) @ $I_{PP}$ (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	19.0	1.0	28.0	8.0	35.0	90
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  $25^\circ C$ .

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)

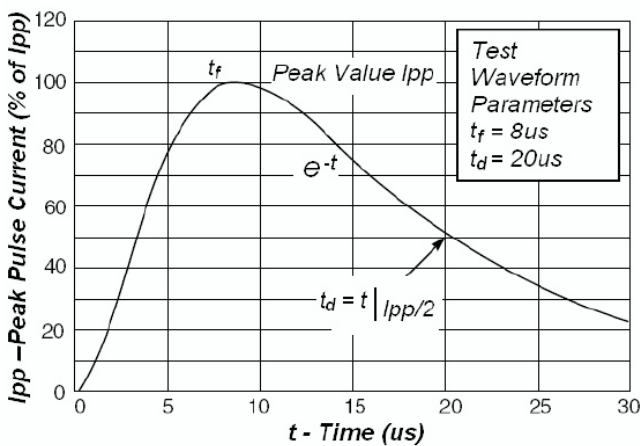


Fig1. Pulse Waveform

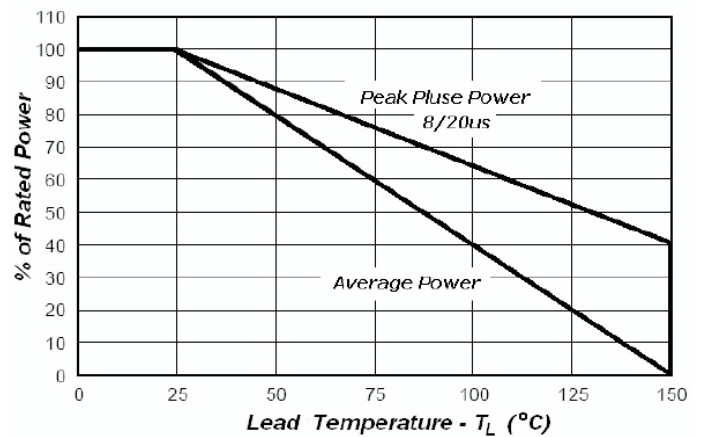
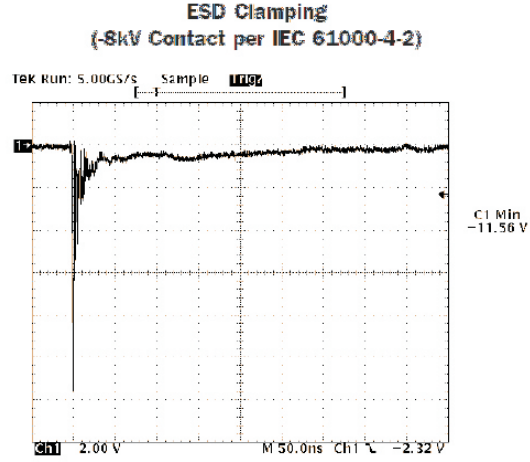
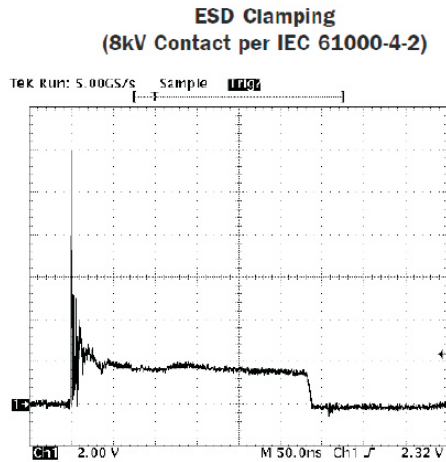


Fig2. Power Derating



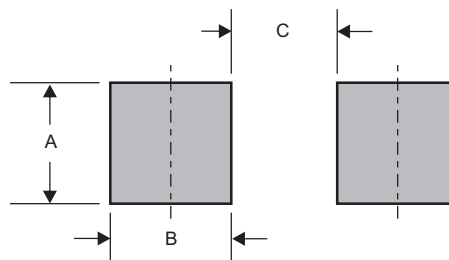
### Pinning information

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	2K
ESD3Z24C	24B /M
ESD3Z36C	36C

### 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)

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