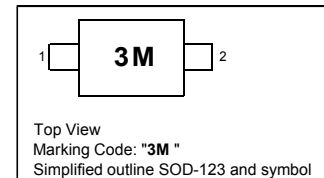


## Transient Voltage Suppressors for ESD Protection

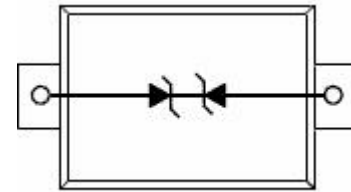
### General Description

The DESD1Z5.0 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.



### Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



### Features

- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 200 Watts @ 8 x 20  $\mu$ s Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection

### ORDERING INFORMATION

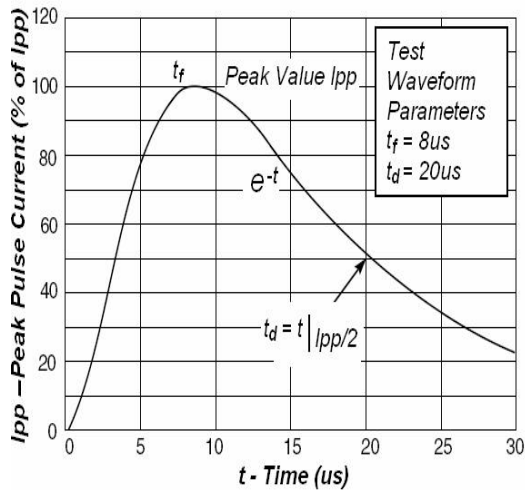
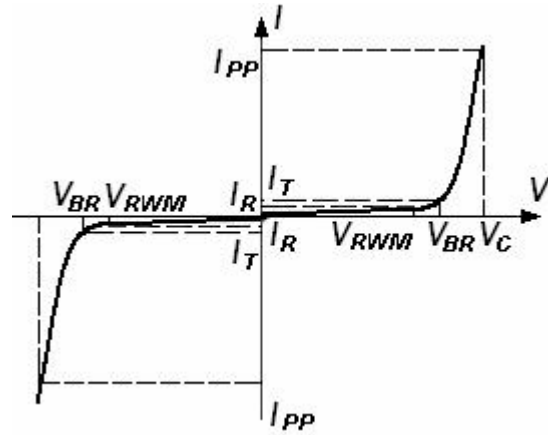
Device	Marking	Shipping
DESD1Z5.0	3M	3000/Tape & Reel

### Absolute Ratings ( $T_{amb}=25^{\circ}C$ )

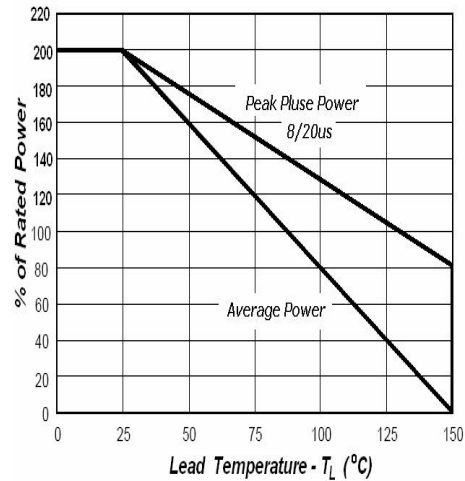
Symbol	Parameter	Value	Units	
$P_{PP}$	Peak Pulse Power ( $t_p = 8/20 \mu s$ )	200	W	
$T_L$	Maximum lead temperature for soldering during 10s	260	$^{\circ}C$	
$T_{stg}$	Storage Temperature Range	-55 to +155	$^{\circ}C$	
$T_{op}$	Operating Temperature Range	-40 to +125	$^{\circ}C$	
$T_j$	Maximum junction temperature	150	$^{\circ}C$	
	IEC61000-4-2 (ESD)	air discharge contact discharge	$\pm 15$ $\pm 8$	KV
	IEC61000-4-4 (EFT)		40	A
	ESD Voltage	Per Human Body Model	16	KV

### Electrical Parameter

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$



**Fig1. Pulse Waveform**



**Fig2. Power Derating**

### Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. VF = 0.9V at IF = 10mA

Device	$V_{RWM}$ (V)	$I_R$ (uA) @ $V_{RWM}$	$V_{BR}$ (V) @ $I_T$ (Note 1)		$I_T$	$V_C$ (V) @ $I_{PP}=5 A^*$	$V_C$ (V) @ Max $I_{PP}^*$	$I_{PP}$ (A)*	$P_{PK}$ (W)*	C (pF)
	Max	Max	Min	Max	mA	Typ	Max	Max	Max	Typ
DESD1Z5.0	5.0	1	5.6	7.8	1.0	11.6	18.6	9.4	174	25

\*Surge current waveform per Figure 1.

1.  $V_{BR}$  is measured with a pluse test current  $I_T$  at an ambient temperature of 25°C.