

Transient Voltage Suppressors for ESD Protection

General Description

The DESD3Z5.0 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

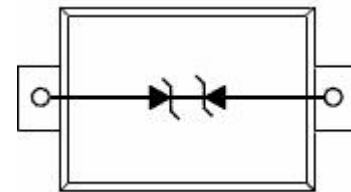
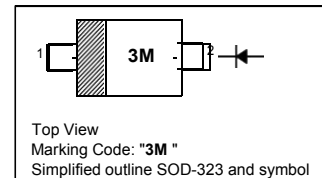
- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 200 Watts @ 8 x 20 μ s Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection

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	± 15 ± 8	KV
	IEC61000-4-4 (EFT)		40	A
	ESD Voltage	Per Human Body Model	16	KV

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



ORDERING INFORMATION

Device	Marking	Shipping
DESD3Z5.0	3M	3000/Tape & Reel

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

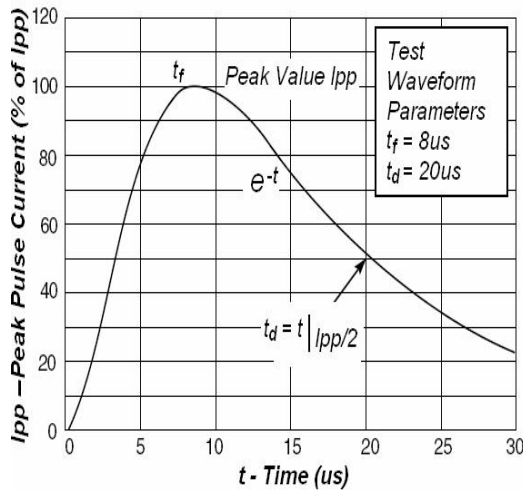
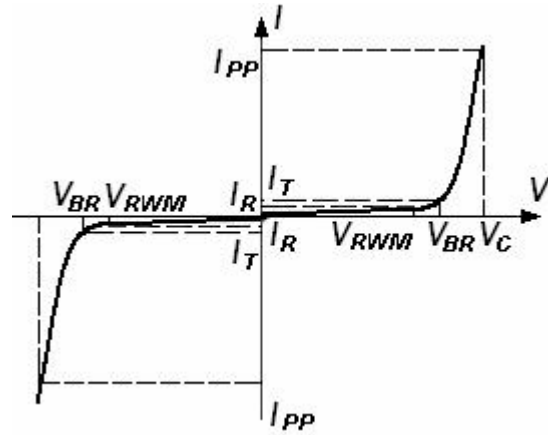


Fig1. Pulse Waveform

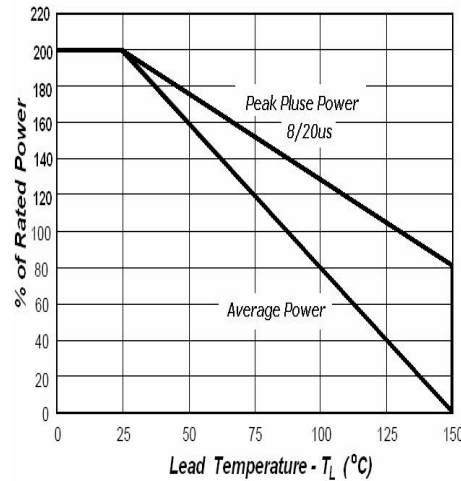


Fig2. Power Derating

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
DESD3Z5.0	5.0	1	5.6	7.8	1.0	11.6	18.6	9.4	174	25

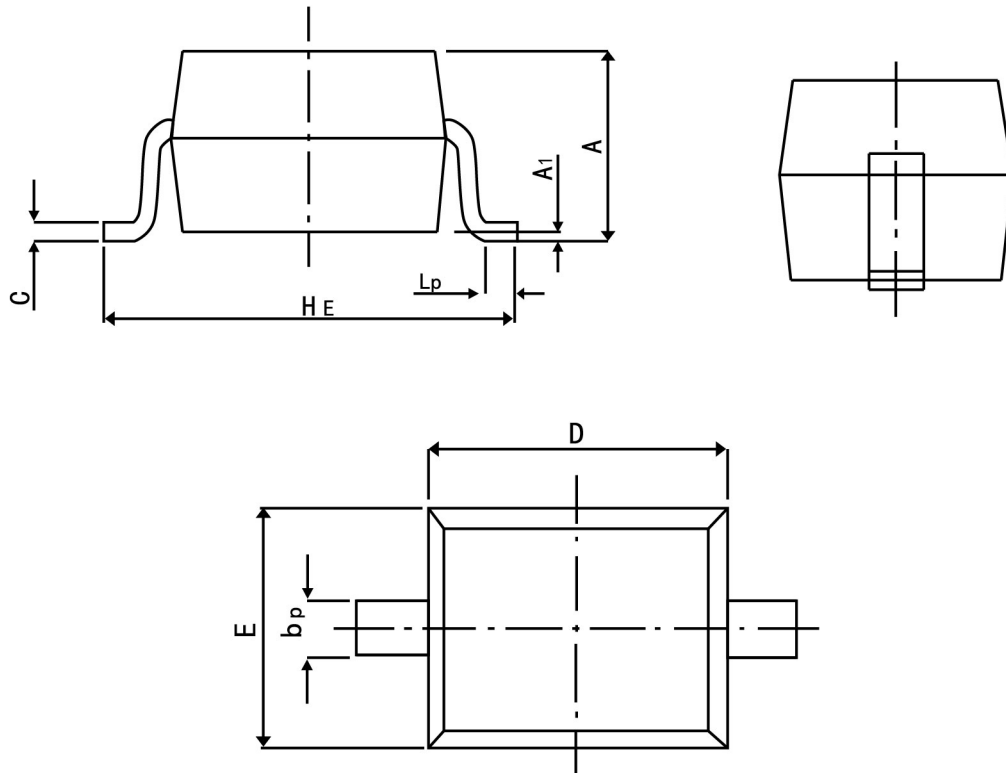
*Surge current waveform per Figure 1.

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

DESD3Z5.0 PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-323



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.20
bp	0.25	0.40
C	0.10	0.15
D	1.60	1.80
E	1.15	1.35
HE	2.30	2.80
A1	0.01	0.10
Lp	0.20	0.50