Leiditech

June 2006

ESD3Z xxV-5
Transient Voltage Suppressors for ESD Protection

Revision:A

General Description

The ESD3Z series 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 Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants(PDA'S)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Pagers Peripherals

Features

- Small Body Outline Dimensions
- 500 Watts peak pulse power (tp = 8/20μs)
- Transient protection for data lines to
- Small package for use in portable electronics
- Suitable replacement for MLV's in ESD protection applications
- Protects one I/O or power line
- Low clamping voltage
- Low leakage current
- Solid-state silicon-avalanche technology

Complies with the following standards

IEC61000-4-2

Level 4 15 kV (air discharge)

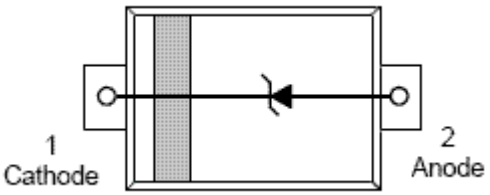
8 kV(contact discharge)

MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

Functional diagram

SOD-323

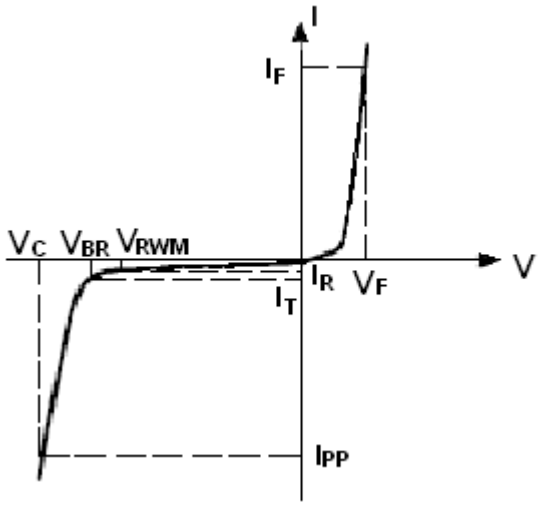


Absolute Ratings (Tamb=25°C)

Symbol	Parameter	Value	Units
P_{PK}	Peak Pulse Power (tp = 8/20μs)	500	W
V_{ESD}	ESD Voltage(HBM Waveform per IEC 61000-4-2)	8	kV
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Maximum junction temperature	-55 to +125	°C

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
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Part Numbers	V_{BR} Min	V_{BR} Typ	V_{BR} Max	I_T	V_{RWM}	I_R	Vc	Ipp	C Typ. (Note1)
	V	V	V	mA	V	μA	V	A	pF
ESD3Z5V-5	6.1	6.7	7.2	1.0	5.0	1	20.4	25.2	210
ESD3Z12V-5	13.3	14.0	14.7	1.0	12.0	1	27.1	18.5	140

1. Capacitance is measured at f=1MHz, V_R=0V,T_A=25℃.

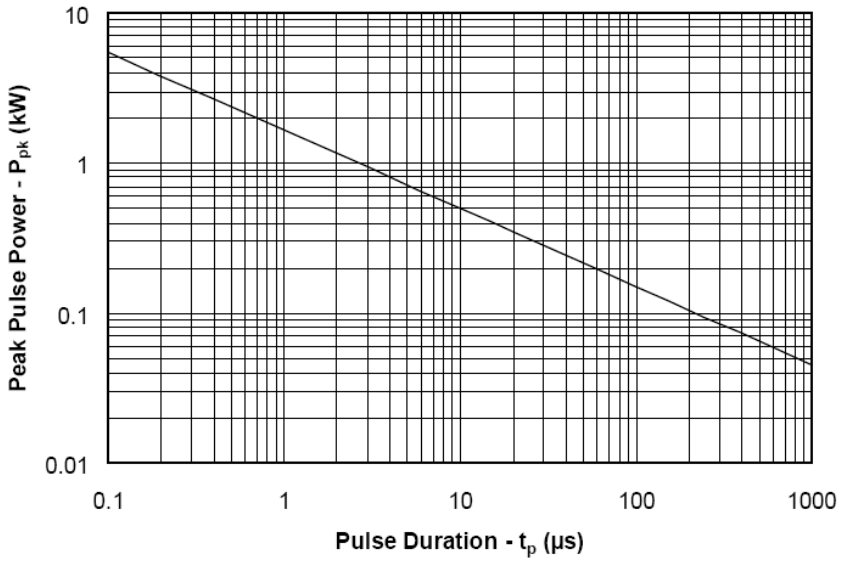


Fig.1 Non-Repetitive Peak Pulse Power vs. Pulse Time

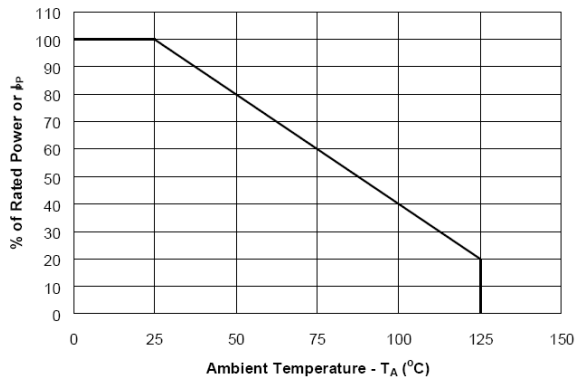


Fig.2 Power Derating Curve

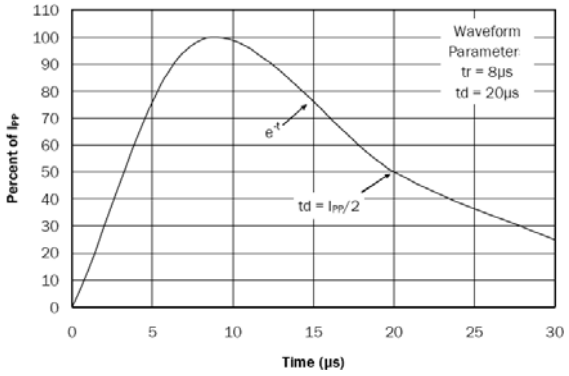
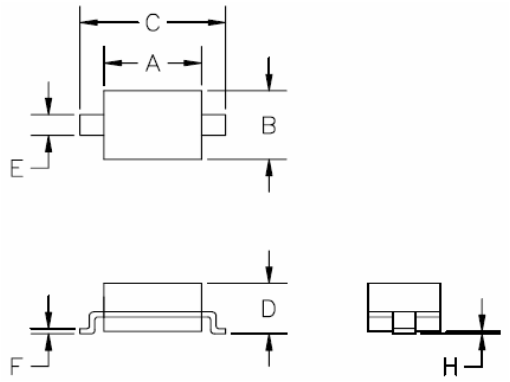


Fig.3 Waveform

SOD-323 Mechanical Data



Dimensions				
Dim	Inches		Milllimeters	
	Min	Max	Min	Max
A	0.060	0.071	1.5	1.8
B	0.045	0.054	1.2	1.4
C	0.060	0.107	2.3	2.7
D	-	0.043	-	1.1
E	0.012	0.016	0.3	0.4
F	0.004	0.010	0.10	0.25
H	-	0.004	-	0.10

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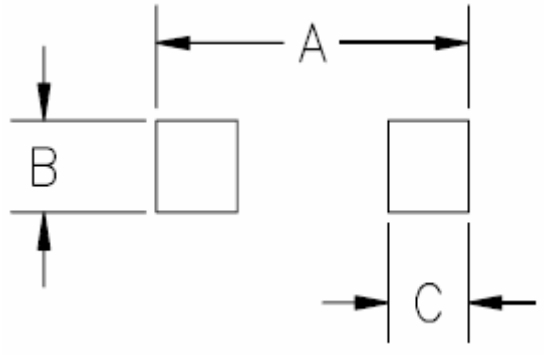
Land Pattern



RS

Dimensions				
Dim	Inches		MM	
	Min	Max	Min	Max
A	-	0.120	-	3.05
B	-	0.031	-	0.8
C	-	0.031	-	0.8

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