



ESD5Z3.3C

Protection Diodes Transient Voltage Suppressors

General Description

The ESD5Z3.3C 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.

Features

- IEC61000-4-2 Level 4 ESD protection
- IEC61000-4-4 Level 4 EFT Protection
- ESD Rating of Class 3(>16kV) per Human Body Model
- 200 Watts Peak Pulse Power per (tp=8/20us)
- Low clamping voltage
- Low leakage current
- Response Time is Typically <1ns

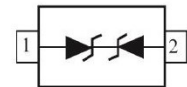
Mechanical Data

- SOD-523 Package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranteed: 260°C/10s

Package outline



Pin Configuration



ABSOLUTE MAXIMUM RATING

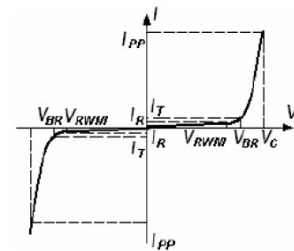
Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air)	V _{ESD}	± 15	kV
ESD per IEC61000-4-2(Contact)		± 8	
Electrostatic Discharge IEC 61000-4-4(EFT)		5	A
ESD Voltage	Per Human Body Model	16	kV
	Per Machine Model	400	V
Total Power Dissipation on FR-5 Board (note 1)@Ta=25°C	P _{PP}	200	W
Maximum Junction temperature	T _J	150	°C
Operating Temperature	T _{OPT}	-55-+150	°C
Storage Temperature Range	T _{STG}	-55-+150	°C
Lead Soldering Temperature-Maximum (10 second Duration)	T _L	260(10 sec.)	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. FR-5=1.0 x 0.75 x 0.62 in.

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

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}
V _{BR}	Breakdown Voltage@ I _T
I _T	Test Current



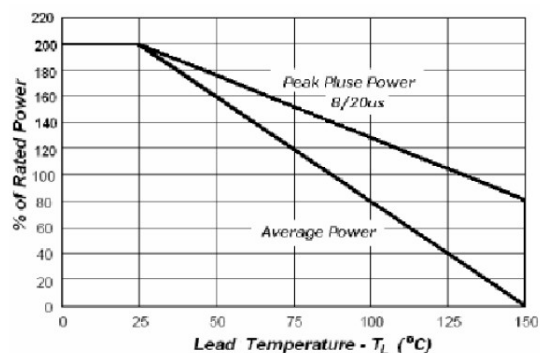
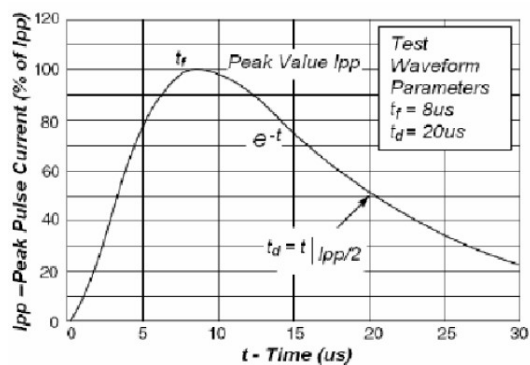
Electrical Characteristics (Ta= 25°C unless otherwise noted, VF=0.9V Max.@ IF=10mA for all types).

DEVICE	MARKING	V _{RWM} (V)	I _R (uA) @V _{RWM}	V _{BR} (V) @I _T (note2)		I _T (mA)	V _C @I _{PP} =1A (V)	V _C (V)(Note1) @Max I _{PP}	I _{PP} (A) (Note1)	P _{pk} (W)	C (pF)
		Max	Max	Min	Max		Typ.	Max	Max	Max	Typ
ESD5Z3.3C	CT	3.3	10.0	4.0	7.0	1.0	8	15	5	120	50

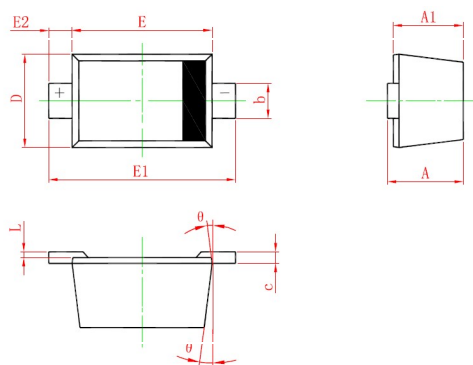
Note: 1. Surge current waveform per Figure 1.

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

ELECTRICAL CHARACTERISTICS CURVES

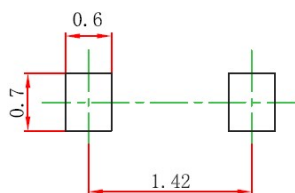


SOD-523 PACKAGE OUTLINE Plastic surface mounted package



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

SOD-523 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.