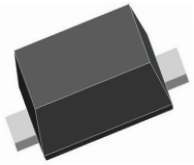
Description

The ESD5Z3.3T1G-CN 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. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.

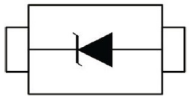
Package outline



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
- 240 Watts Peak Pulse Power per (tp=8/20us)
- Low clamping voltage
- Stand-off voltages: 2.5V to 12V
- Low leakage current
- Response Time is Typically <1ns

Pin Configuration



Mechanical Data

- SOD-523 Package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranteed: 260℃/10s
- Device Meets MSL 1 Requirements

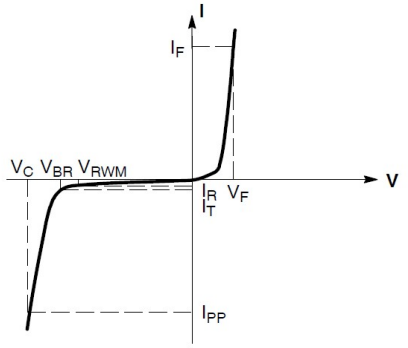
ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air) ESD per IEC61000-4-2(Contact)	V_{ESD}	±30	kV
IEC 61000-4-4(EFT)		40	A
ESD Voltage Per Human Body Model Per Machine Model		16 400	kV v
Total Power Dissipation on FR-5 Board (note 1)@Ta=25℃	P_{PP}	200	W
Operating temperature	T_{OPT}	-55-+150	℃
Storage temperature range	T_{STG}	-55-+150	℃
Lead Soldering temperature-Maximum (10 second Duration)	T_L	260(10 sec.)	℃

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℃ ambient temperature unless otherwise specified).

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ Ipp
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage@ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{PK}	Peak Power Dissipation
C	Max. Capacitance @ VR=0 and f=1MHZ



Uni-Directional TVS

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

DEVICE	DEVICE MARKING	VRWM (V) (max.)	IR(uA) @VRWM (max.)	VBR(V) @IT(note2) (min.)	IT (mA)	Vc@5A (V) (Typ.)	Vc (V) (max.) (@A)	Ppk (W) (max.)	C (pF) (Typ.)
ESD5Z3.3T1G-CN	ZE	3.3	0.05	5.0	1.0	8.4	14.1 11.2	158	105

Surge current waveform per Figure 1.

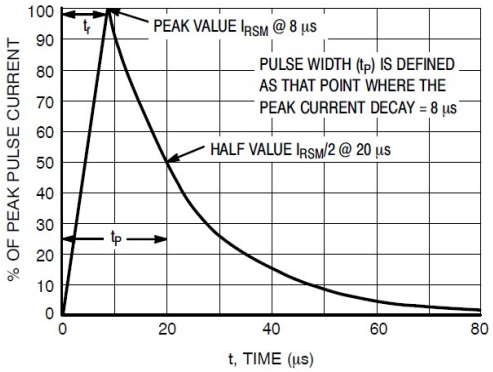
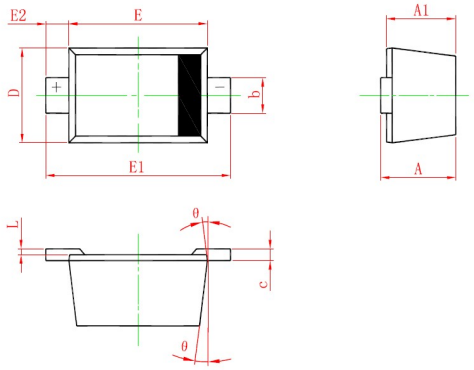


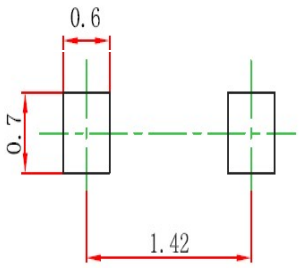
Figure 1. 8 x 20 µs Pulse Waveform

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:±0.05mm.
3.The pad layout is for reference purposes only.

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