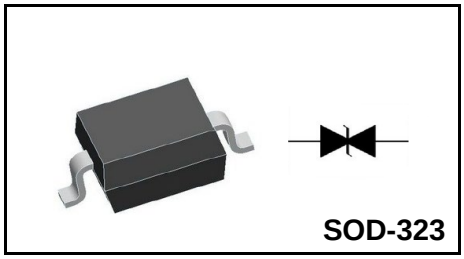
Transient Voltage Suppressors



Marking Code	
ESD3Z5.0C	3M

General Description

The ESD3Z5.0C 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-323 Package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranteed: 260℃/10s

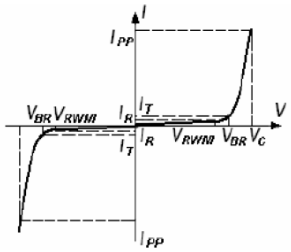
ABSOLUTE MACIMUM RATING

Parameter	Symbol	Rating	Unit
ESD per IEC61000-4-2(Air) ESD per IEC61000-4-2(Contact)	V_{ESD}	±15 ±8	KV
Electrostatic Discharge IEC 61000-4-4(EFT)		5	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
Maximum Junction temperature	T_j	150	℃
Operating Temperature	T_{OPT}	-40 ~ +15 0	℃
Storage temperature range	T_{stg}	-55 ~ +15 0	℃
Lead Soldering temperature-Maximum (10 second Duration)	I_L	260	℃

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.

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



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

DEVICE	MARKING	V_{RWM} (V)	I_R(uA) @VRWM	V_{BR}(V) @IT(note2)		IT (mA)	Vc@I_{PP}=5A (V)	Vc(V)(Note1) @Max I_{PP}	I_{PP}(A) (Note1)	Ppk (W)	C (pF)
		Max	Max	Min	Max		Typ.	Max	Max	Max	Typ
ESD3Z5.0C	3M	5.0	1.0	5.6	7.8	1.0	11.6	18.6	9.4	174	25

Note: 1. Surge current waveform per Figure 1.
2. VBR is measured with a pulse test current IT at an ambient temperature of 25℃

ELECTRICAL CHARACTERISTICS CURVES

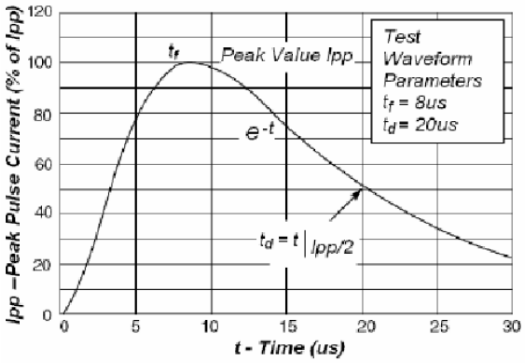


Fig1. Pulse Waveform

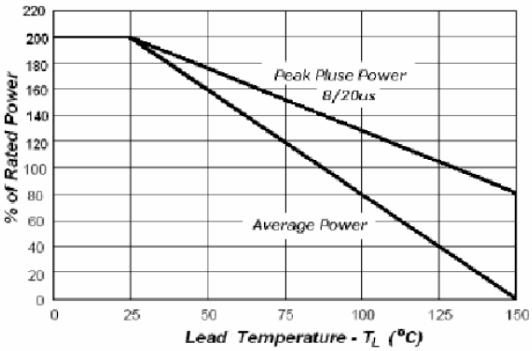


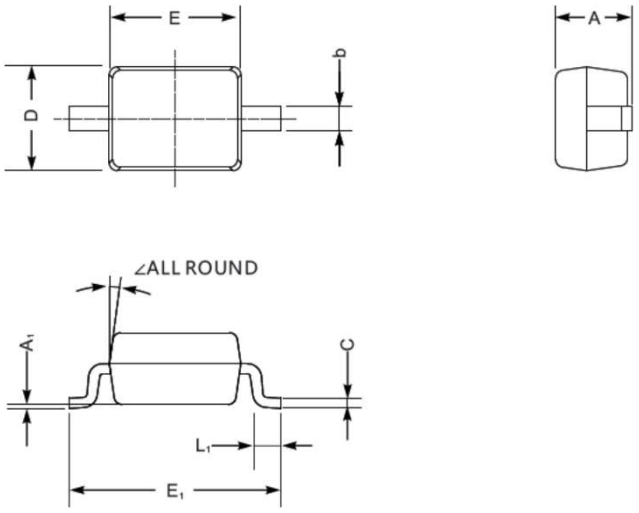
Fig2. Power Derating

Ordering information

Package	Packing Description	Packing Quantity
SOD-323	Tape/Reel,7”reel	3000PCS/Reel 120000PCS/Carton

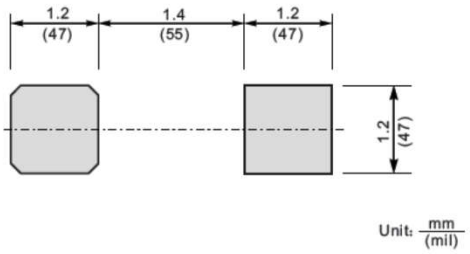
Package Dimensions

SOD-323



Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
C	0.08	0.15	3.1	5.9
D	1.2	1.4	47	55
E	1.4	1.8	63	70
E1	2.55	2.75	100	108
b	0.25	0.4	9.8	16
L1	0.2	0.45	7.9	16
A1	-	0.2	-	8
∠	9°			

The recommended mounting pad size



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