

## Features

- AEC-Q101 Qualified
- Protects One Data or Power Line
- Low Leakage
- Ultra Low Clamping Voltage
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

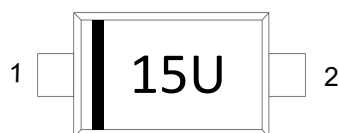
IEC61000-4-2(ESD)	Air	±30KV
	Contact	±30KV
Peak Pulse Power (8/20μs)	P <sub>PK</sub>	250W
Peak Pulse Current (8/20μs)(Note 2)	I <sub>PP</sub>	8A
Operating Junction Temperature Range	T <sub>J</sub>	-55°C to +150°C
Storage Temperature Range	T <sub>STG</sub>	-55°C to +150°C

Note:

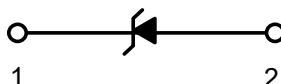
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

## Marking Information

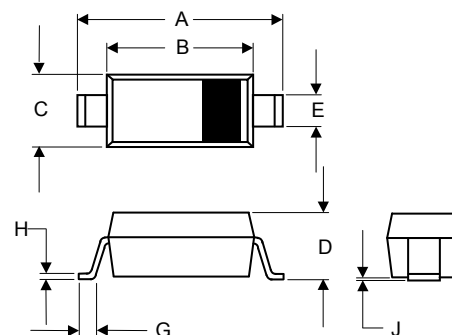


## Internal Structure



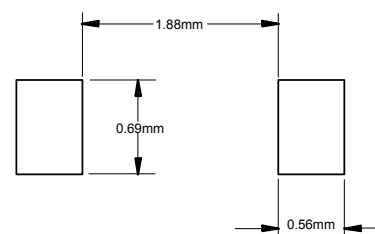
# ESD Protection Device

## SOD-323

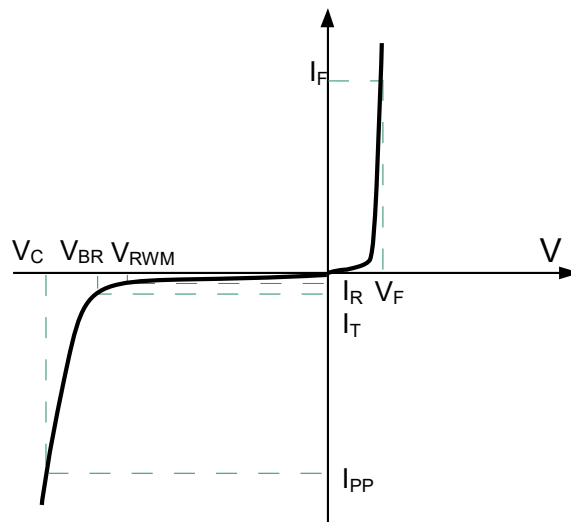


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.090	0.107	2.30	2.70	
B	0.063	0.071	1.60	1.80	
C	0.045	0.053	1.15	1.35	
D	0.031	0.045	0.80	1.15	
E	0.010	0.016	0.25	0.40	
G	0.004	0.018	0.10	0.45	
H	0.004	0.010	0.10	0.25	
J	-----	0.006	-----	0.15	

## Suggested Solder Pad Layout



Symbol	Parameter
VRWM	Peak Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IPP	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ IPP
PPP	Peak Pulse Power
CJ	Junction Capacitance
IF	Forward Current
VF	Forward Voltage @ IF



#### Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	$V_{RWM}$				15	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	16.5		19	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 15\text{V}$			1.0	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F = 10\text{mA}$			1.1	V
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$			24	V
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP} = 5\text{A}$ , $t_p = 8/20\mu\text{s}$			30	V
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP} = 8\text{A}$ , $t_p = 8/20\mu\text{s}$			35	V
Dynamic Resistance <sup>Note2</sup>	$R_{DYN}$	TLP, $t_p = 100\text{ns}$		0.19		$\Omega$
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		45	55	pF

Note:

1. Non-repetitive current pulse, according to IEC61000-4-5.

2. I/O to Ground, TLP parameter:  $Z_0 = 50\Omega$ ,  $t_p = 100\text{ns}$ ,  $t_r = 2\text{ns}$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

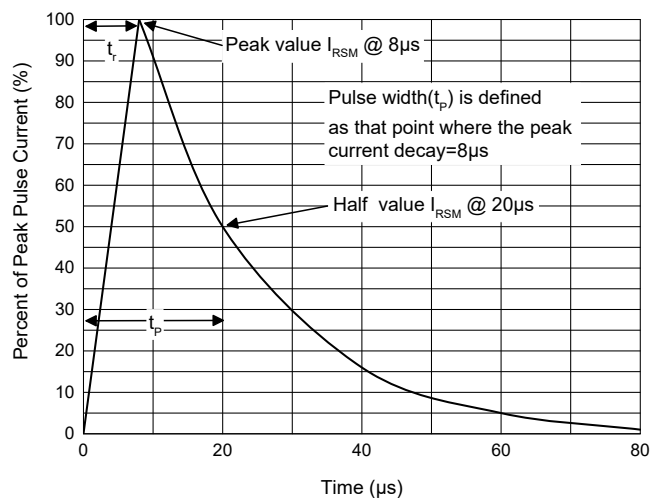


Fig. 2 - Non-Repetitive Peak Pulse Power

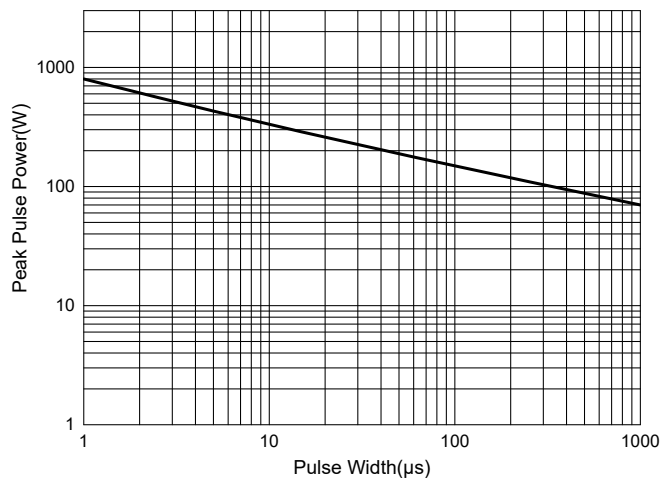


Fig. 3 - Capacitance Characteristics

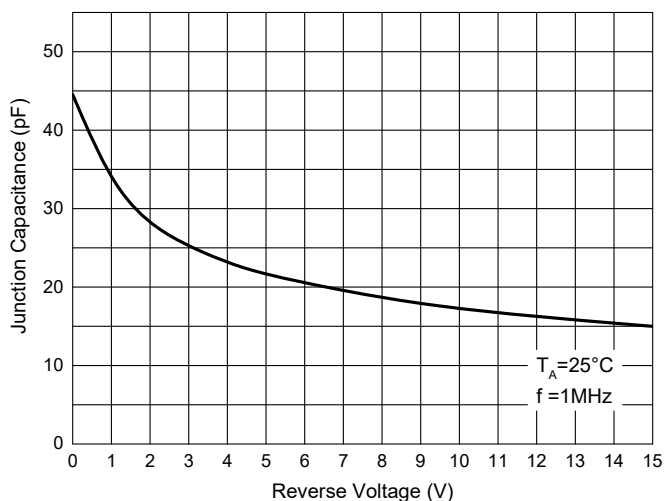


Fig. 4 - Clamping Voltage Characteristics

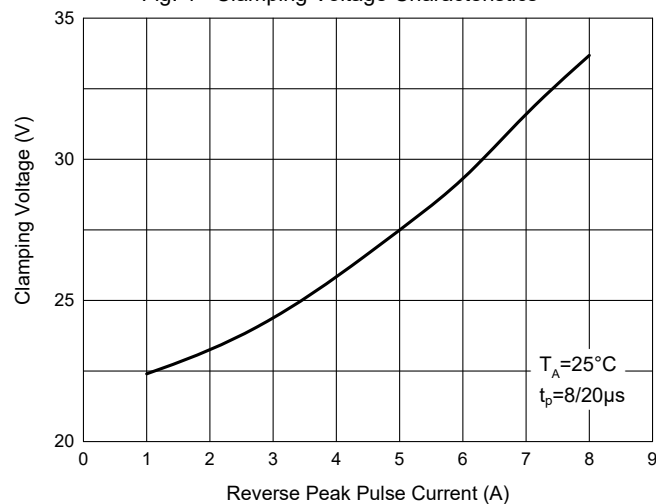


Fig. 5 - Pulse Derating Curve

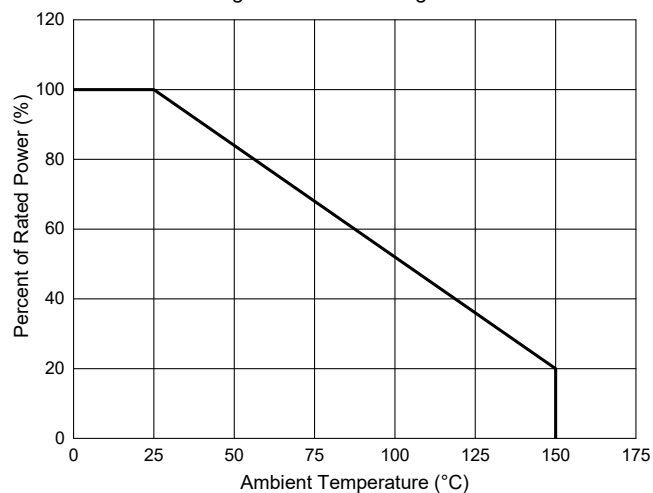
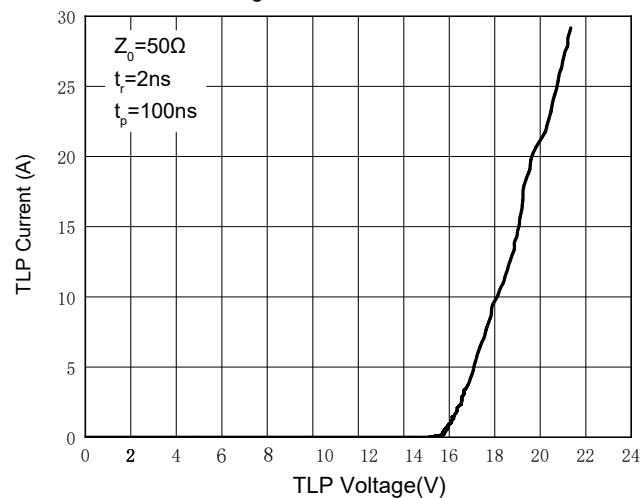


Fig. 6 - TLP Measurement



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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