

ESD3Z15CA

Bi-Directional Transient Voltage Suppressors for ESD Protection



V_{RWM} : 15 V

I_{pp} : 3 A

Package: SOD-323

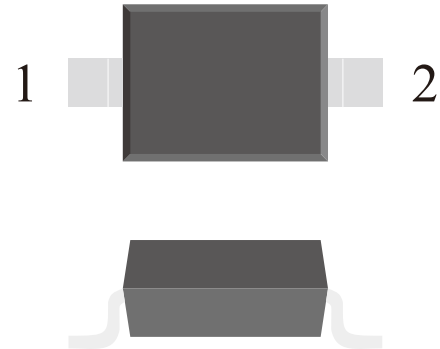
Features

- NH'S Glass Passivated Chip Technology
- Wave And Reflow Solderable
- Low Reverse Leakage
- Very Fast Response Time
- Excellent Clamping Capability
- 10/1000 μ s Waveform, Repetition Rate(Duty Cycle):0.01 %
- ESD Immunity Acc. IEC 61000-4-2

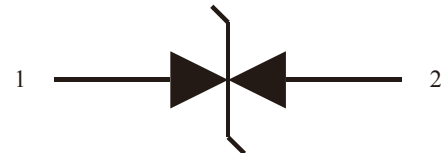
Typical Applications

- Power Port
- Communication And Data Port
- ESD Protection And Automotive Electronics
- Industrial Control and Automation

Diagram:



Polarity:



Single Phase, Half Wave, 60Hz, Resistive Or Inductive Load. For Capacitive Load, Derate Current By 20%

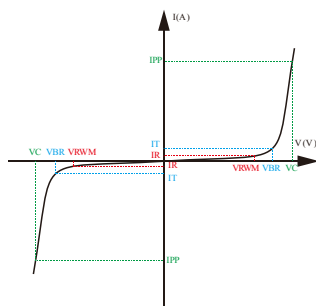
Maximum Ratings (Ta=25 °C Unless Otherwise Specified)

Parameter	Symbol	Limits	Unit
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Peak Pulse Power (tp = 8/20 μ s)	P_{PP}	400.0	W
Lead Solder Temperature – Maximum(10 Second Duration)	T_L	260.0	°C
Maximum Junction Temperature	T_J	-55 ~ 125	°C
Storage temperature range	T_{STG}	-55 ~ 150	°C

Electrical Characteristics (Ta = 25 °C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit
Reverse Working Peak Voltage	V_{RWM}	-	-	15	V
Reverse Breakdown Voltage $I_T = 1.0$ mA	V_{BR}	16.7	-	-	V
Reverse Current $V_{RWM} = 15$ V	I_R	-	-	1.0	μ A
Clamping Voltage(tp = 8/20 μ s)	V_C	$I_{PP} = 1$ A		23.0	V
		$I_{PP} = 10$ A		33.0	
Capacitance $V_R = 0$ V, f = 1 MHz	C_J	-	35.0	40.0	Pf

C-V Curve Chart



Symbol Instruction

Symbol	Instruction
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Power Dissipation
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Reverse Voltage
I_T	Test Current @ V_{RWM}
I_F	Maximum Average Forward Rectified Current
V_F	Maximum Instantaneous Forward Voltage
C_J	Junction Capacitance @ $V_R = 0$ and $f = 1.0$ MHz

ESD3Z15CA

Bi-Directional Transient Voltage Suppressors for ESD Protection



Typical Characteristics Curves

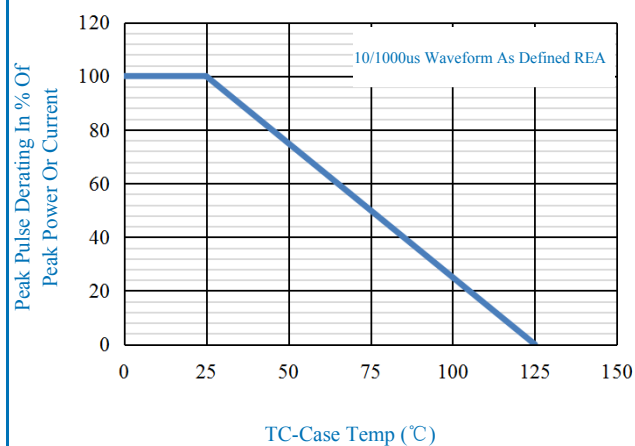


Fig.1-Peak Power Or Current vs.Tc

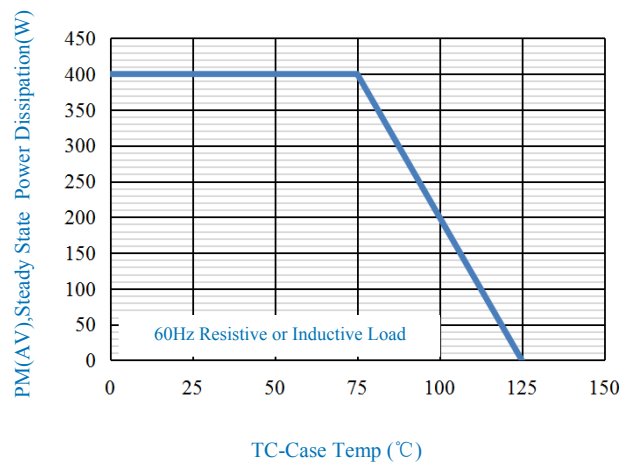


Fig.2-Steady State Power Derating Curve

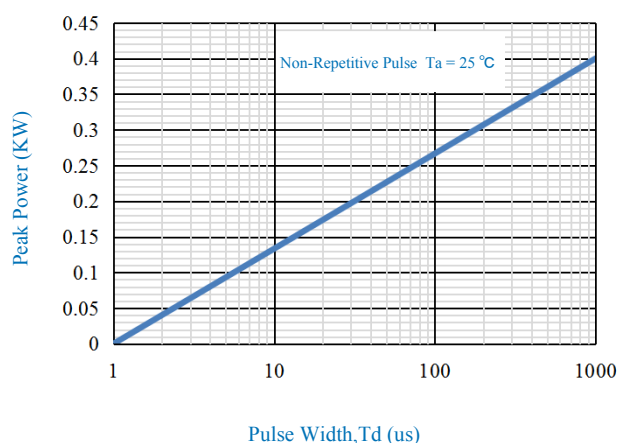


Fig.3-Peak Pulse Power Rating Curve

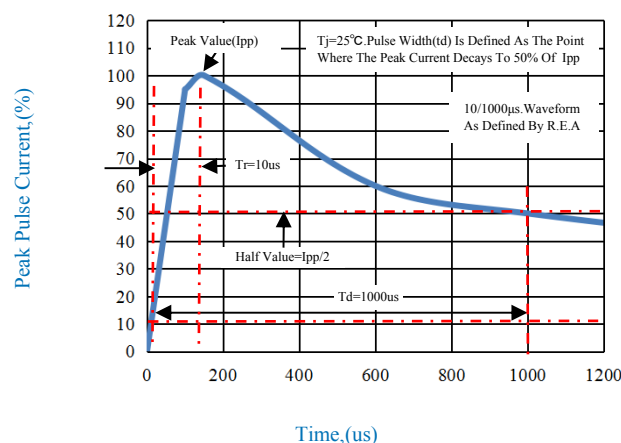


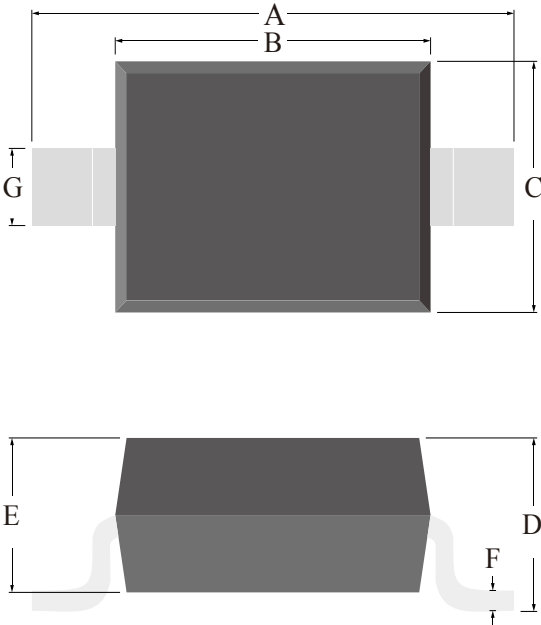
Fig.4-Pulse Waveform

ESD3Z15CA

Bi-Directional Transient Voltage Suppressors for ESD Protection



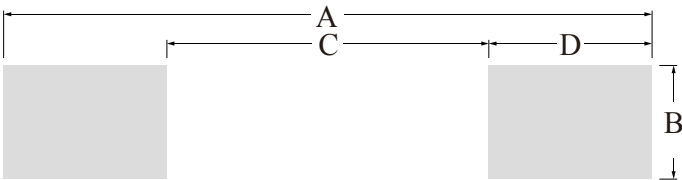
OUTLINE DRAWINGS



SOD-323

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.40	-	2.70	0.0945	-	0.1063
B	1.55	-	1.85	0.0610	-	0.0728
C	1.15	-	1.45	0.0453	-	0.0571
D	0.75	-	1.10	-	-	0.0433
E	0.70	-	1.00	0.0276	-	0.0394
F	-	0.10	-	-	0.0039	-
G	0.25	-	0.55	0.0098	-	0.0217

RECOMMEDND LAYOUT DRAWINGS



SOD-323

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	2.90	-	-	0.1142	-
B	-	0.50	-	-	0.0197	-
C	-	1.44	-	-	0.0567	-
D	-	0.73	-	-	0.0287	-

ESD3Z15CA

Bi-Directional Transient Voltage Suppressors for ESD Protection



MARKING

MARKING INSTRUCTION



15B=mark

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SOD-323	P1	0.0041	7" Reel	3000	45000	180000

ESD3Z15CA



Bi-Directional Transient Voltage Suppressors for ESD Protection

Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow

	Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
	Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
	Preheat-Temperature Min (T _S min) -Temperature Max (T _S max) -Time(t _s min to t _s max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
	Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
	Peak Temperature(T _P)	240 +0/-5 °C	260 +0/-5 °C
	Time within 5°C of actual peak temperature (t _p)	10-30 seconds	20-40 seconds
	Ramp down rate	6°C/second max.	6°C/second max.
	Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Niuhan Electronics Technology Co., LTD
- Niuhan Electronics Technology Co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhan Electronics Technology Co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhan Electronics Technology Co., LTD. does not assume any and all implied warranties,including warranties of fitness for particular purpose,non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation.Customers are responsible in comprehending the suitable use in particular applications.Niuhan Electronics Technology Co., LTD.makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining,such as medical instruments,transportation equipment,aerospace machinery et cetera.Customers use or selling these products for use in such applications do so at their own risk and agree to fully indemnify Niuhan Electronics Technology Co., LTD.for any damages resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product the customer. quality, change the internal structure and the production process Niuhan can not notify

ESD3Z15CA

Bi-Directional Transient Voltage Suppressors for ESD Protection



Specification Revision History

Rev.	Date	Changed Items	Pre-Changed Content	Changed Content
A/1	2014-10-20	First Issue		
Blank Below				