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NZL5V6ATT1

SC75 Dual Common Anode Zener for ESD Protection

This dual monolithic silicon voltage suppressor is designed for applications requiring transient overvoltage protection capability. It is intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment, and other applications. Its dual junction common anode design protects four separate lines using only one package.

These devices are ideal for situations where board space is at a premium.

Specification Features

- SC−75 Package Allows Two Separate Unidirectional Configurations
- Low Leakage < 1 μA @ 3 V
- Breakdown Voltage: 5.3 – 5.9 V @ 1 mA
- Low Capacitance (40 pF typical between terminals)
- ESD Protection Meeting IEC61000−4−2
- Pb−Free Package is Available

Mechanical Characteristics

- Void Free, Transfer−Molded, Thermosetting Plastic Case
- Corrosion Resistant Finish, Easily Solderable
- Package Designed for Optimal Automated Board Assembly
- Small Package Size for High Density Applications

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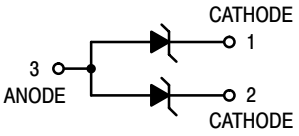
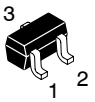
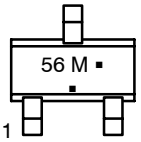




SC−75
CASE 463
STYLE 4

MARKING DIAGRAM



56	= Device Code
M	= Date Code*
▪	= Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
NZL5V6ATT1	SC−75	3000/Tape & Reel
NZL5V6ATT1G	SC−75 (Pb−Free)	3000/Tape & Reel

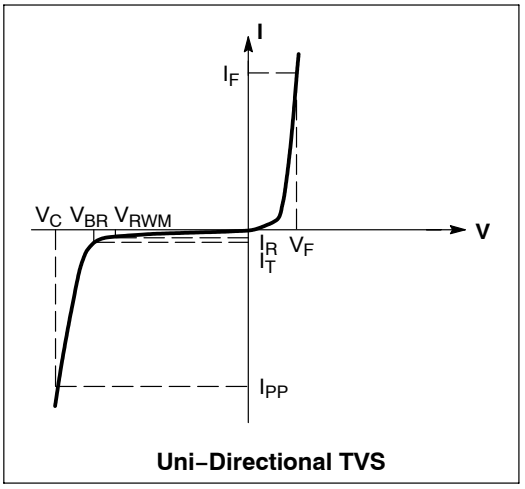
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted)

UNIDIRECTIONAL (Circuit tied to Pins 1 and 3, or 2 and 3)

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
ΘV_{BR}	Maximum Temperature Coefficient of V_{BR}
I_F	Forward Current
V_F	Forward Voltage @ I_F
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}



Uni−Directional TVS

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Value	Unit
Steady State Power − 1 Diode (Note 1)	P_D	150	mW
Maximum Junction Temperature	T_{Jmax}	150	°C
Operating Junction and Storage Temperature Range	T_J T_{stg}	−55 to +150	°C
ESD Discharge IEC61000−4−2, Air Discharge IEC61000−4−2, Contact Discharge	V_{PP}	±15 ±8	kV
Lead Solder Temperature (10 seconds duration)	T_L	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Only 1 diode under power. For all 4 diodes under power, P_D will be 25%. Mounted on FR−4 board with min pad.

ELECTRICAL CHARACTERISTICS

	Breakdown Voltage V_{BR} @ 1 mA (V)			Leakage Current I_{RM} @ V_{RM} = 3.0 V	V_C @ I_{PP} (Note 2)		Typical Capacitance @ 0 V Bias @ 1 MHz	Max V_F @ I_F = 10 mA
Device	**Min**	**Nom**	**Max**	**(μA)**	**V_C (V)**	**I_{PP} (A)**	**(pF)**	**(V)**
NZL5V6	5.3	5.6	5.9	1.0	9.97	6.11	40	1.25

2. Surge current waveform per Figure 2 and clamping voltage (V_C) per Figure 6.

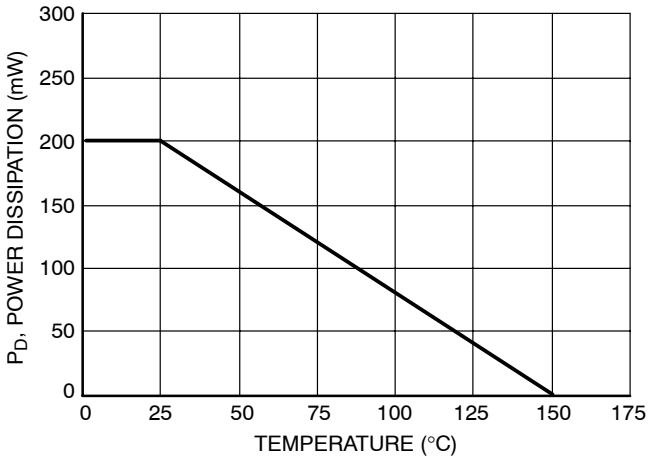


Figure 1. Steady State Power Derating Curve

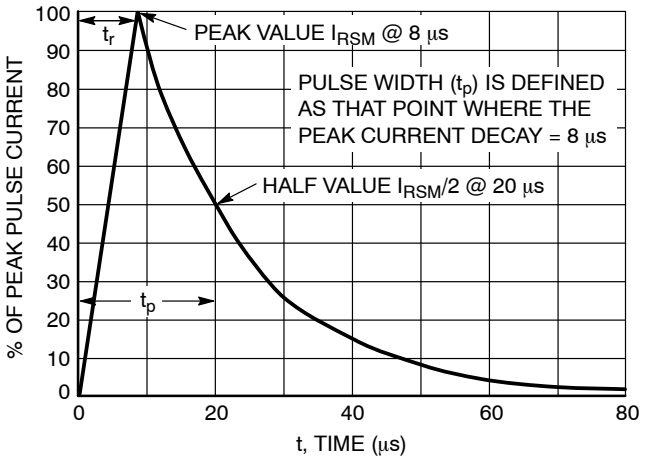


Figure 2. 8 X 20 μs Pulse Waveform

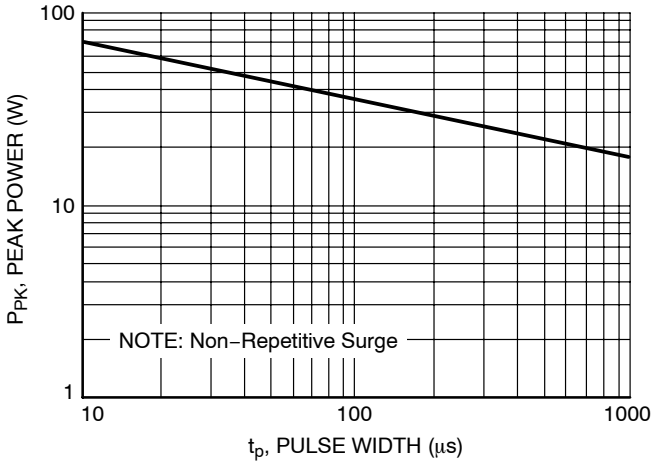


Figure 3. Pulse Rating Curve

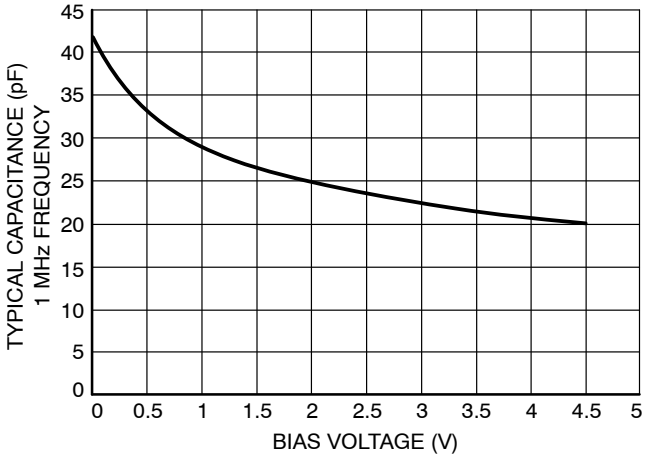


Figure 4. Capacitance

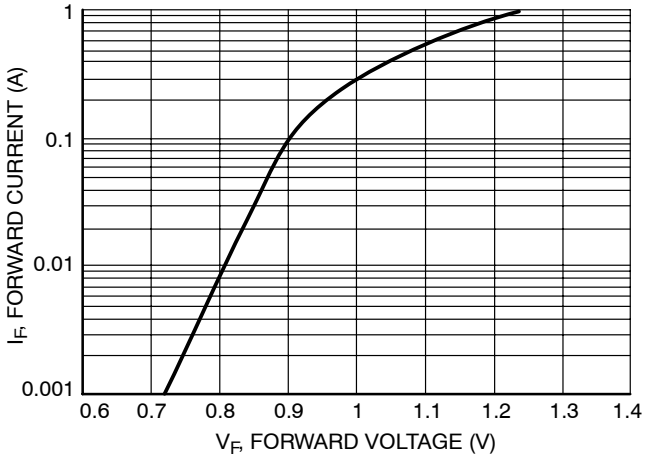


Figure 5. Forward Current versus Forward Voltage

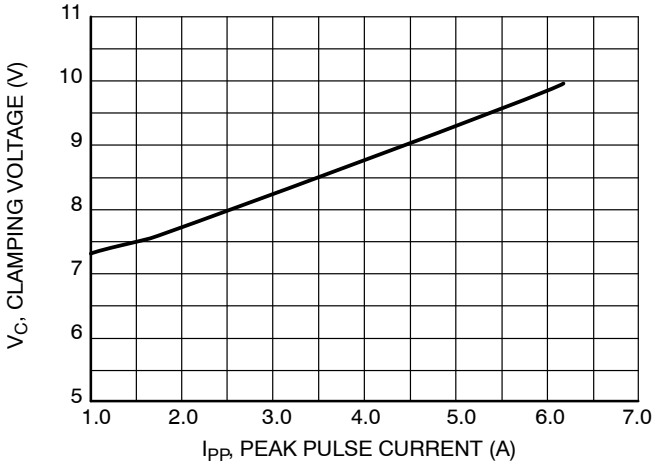
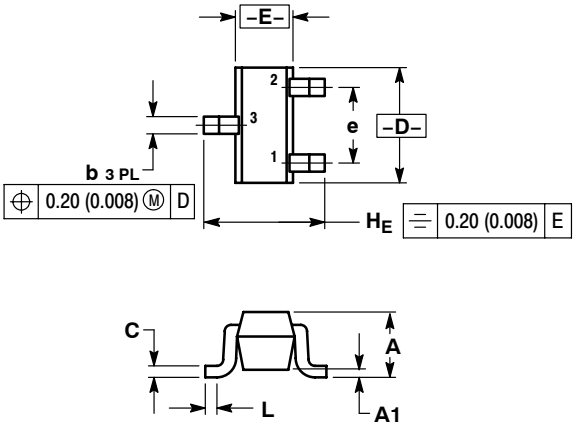


Figure 6. Clamping Voltage versus Peak Pulse Current (8 x 20 μs Pulse)

NZL5V6ATT1

PACKAGE DIMENSIONS

SC−75/SOT−416
CASE 463−01
ISSUE F

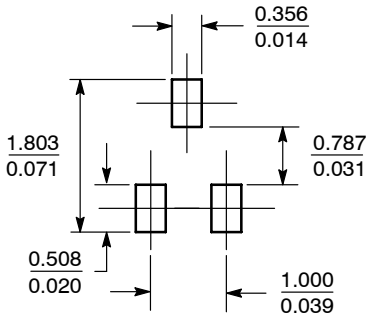


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.70	0.80	0.90	0.027	0.031	0.035
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.15	0.20	0.30	0.006	0.008	0.012
C	0.10	0.15	0.25	0.004	0.006	0.010
D	1.55	1.60	1.65	0.059	0.063	0.067
E	0.70	0.80	0.90	0.027	0.031	0.035
e	1.00 BSC			0.04 BSC		
L	0.10	0.15	0.20	0.004	0.006	0.008
H_E	1.50	1.60	1.70	0.061	0.063	0.065

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
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ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

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