NUP4104X6

4-Line Transient Voltage Suppressor Array

This 4−line voltage transient suppressor array is designed for application requiring transient voltage protection capability. It is intended for use in over−transient voltage and ESD sensitive equipment such as wireless phones, printers, automotive electronics, networking communication and other applications. This device features a monolithic common anode design which protects five independent lines in a single SOT−563 package.

Features

- Protects Up to 4−Line in a Single SOT−563 Package
- Peak Power Dissipation − 150 Watts (8x20 μsec Waveform)
- ESD Rating of Class 3B (Exceeding 8.0 KV) per Human Body Model and Class C (Exceeding 400 V) per Machine Model
- Compliance with IEC 61000−4−2 (ESD) 15 KV (Air), 8.0 KV (Contact)
- UL Flammability Rating of 94 V−0
- 100% Lead−Free, MSL1 @ 260°C Reflow Temperature

Applications

- Hand−Held Portable Applications
- Networking and Telecom
- Automotive Electronics
- Serial and Parallel Ports
- Notebooks, Desktops, Servers

MAXIMUM RATINGS (T_J = 25°C, unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Power Dissipation 8x20 μs Double Exponential Waveform, (Note 1)	P_{PK}	150	W
Operating Temperature Range	T_J	−40 to 125	°C
Storage Temperature Range	T_{STG}	−55 to 150	°C
Lead Solder Temperature (10 s)	T_L	260	°C
Electro−Static Discharge Human Body Model (HBM) Machine Model (MM) IEC 61000−4−2 (Air) IEC 61000−4−2 (Contact)	ESD	 8000 400 30000 15000	V

1. Non−repetitive current pulse per Figure 1.

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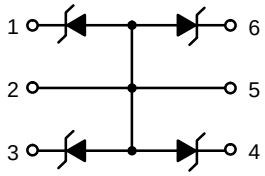
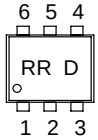
http://onsemi.com



SOT−563
CASE 463A
PLASTIC

MARKING DIAGRAM



RR = Specific Device Code
D = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
NUP4104X6T1	SOT−563	4000/Tape & Reel

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

ELECTRICAL CHARACTERISTICS (T_J = 25°C, unless otherwise noted)

Characteristic	Test Condition	Symbol	Min	Typ	Max	Unit
Reverse Working Voltage	(Note 2)	V_{RWM}	–	–	3.0	V
Breakdown Voltage	I_R = 1.0 mA	V_{BR}	6.1	–	7.2	V
Reverse Leakage Current	V_{RWM} = 3.0 V	I_R	–	–	0.5	μA
Clamping Voltage	I_{PP} = 1.0 A (8x20 μs Waveform)	V_C	–	–	8.0	V
	I_{PP} = 12 A (8x20 μs Waveform)		–	–	13	
Peak Pulse Current	8x20 μs Waveform	I_{PP}	–	–	13	A
Capacitance	V_R = 0 V, f = 1.0 MHz (Line to GND)	C_J	–	70	–	pF

2. TVS devices are normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal or greater than the DC or continuous peak operating voltage.
3. V_{BR} is measured at pulse test current I_T.

TYPICAL PERFORMANCE CURVES

(T_A = 25°C unless otherwise noted)

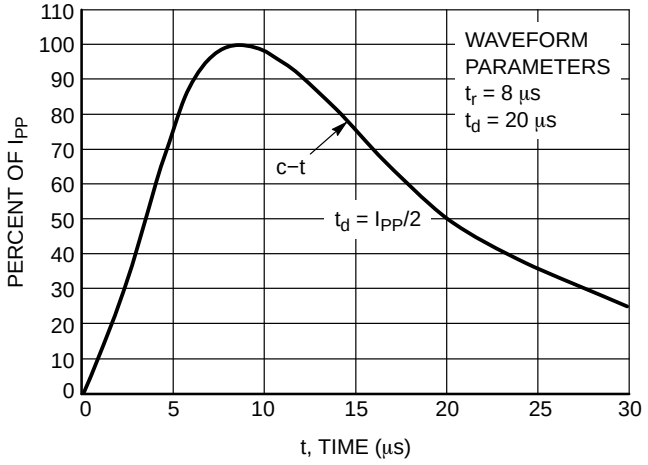


Figure 1. Pulse Waveform

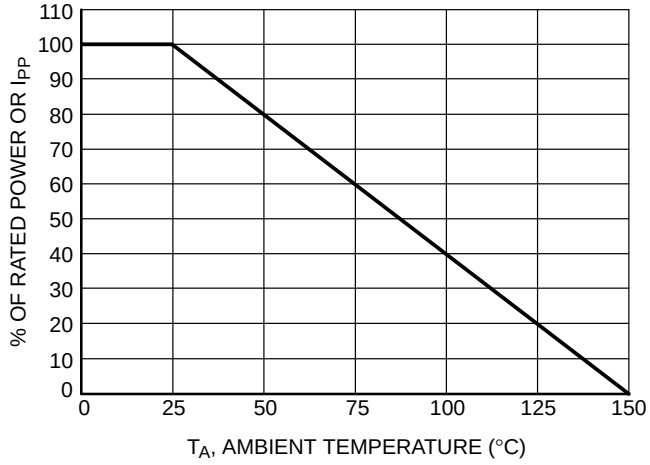


Figure 2. Power Derating Curve

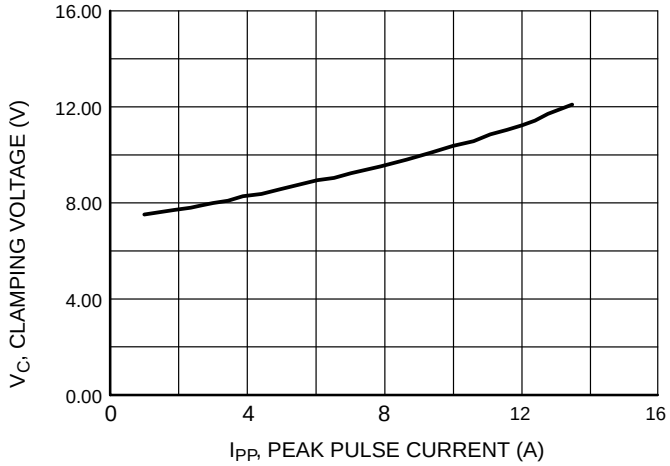
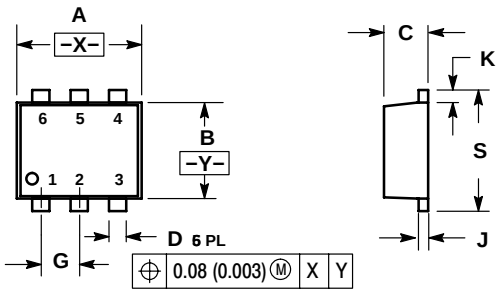


Figure 3. Clamping Voltage versus Peak Pulse Current

PACKAGE DIMENSIONS

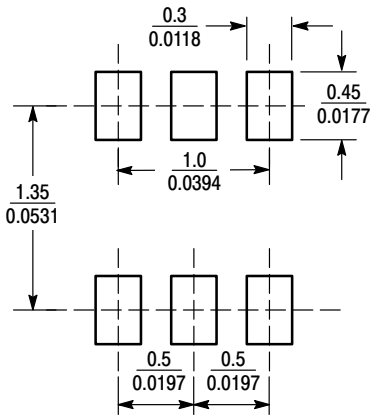
SOT−563, 6−LEAD
CASE 463A−01
ISSUE O



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC		0.020 BSC	
J	0.08	0.18	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

SOLDERING FOOTPRINT*



SCALE 20:1 (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
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