NSQA6V8AW5T2

Low Capacitance Quad Array for ESD Protection

This integrated transient voltage suppressor device (TVS) is designed for applications requiring transient overvoltage protection. It is intended for use in sensitive equipment such as computers, printers, business machines, communication systems, medical equipment, and other applications. Its integrated design provides very effective and reliable protection for four separate lines using only one package. These devices are ideal for situations where board space is at a premium.

Features

- ESD Protection: IEC61000-4-2: Level 4
  MILSTD 883C - Method 3015-6: Class 3
- Four Separate Unidirectional Configurations for Protection
- Low Leakage Current < 1 μA @ 5 Volts
- Power Dissipation: 380 mW
- Small SC-88A SMT Package
- Low Capacitance (7 pF Typical @ 3 V)

Benefits

- Provides Protection for ESD Industry Standards: IEC 61000, HBM
- Protects the Line Against Transient Voltage Conditions in Either Direction
- Minimize Power Consumption of the System
- Minimize PCB Board Space

Typical Applications

- Instrumentation Equipment
- Serial and Parallel Ports
- Microprocessor Based Equipment
- Notebooks, Desktops, Servers
- Cellular and Portable Equipment

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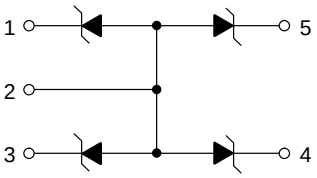
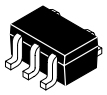
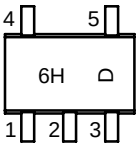




SC-88A/SOT-323
CASE 419A

MARKING DIAGRAM



6H = Device Marking
D = One Digit Date Code

ORDERING INFORMATION

Device	Package	Shipping
NSQA6V8AW5T2	SCC-88A	3000/Tape & Reel

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

Rating	Symbol	Value	Unit
Peak Power Dissipation 8 X 20 μsec Double Exponential Waveform (Note 1)	P_{PK}	20	W
Steady State Power - 1 Diode (Note 2)	P_D	380	mW
Thermal Resistance - Junction to Ambient Above 25°C, Derate	$R_{\theta JA}$	 327 3.05	 °C/W mW/°C
Operating Junction Temperature Range	T_J	-40 to +125	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Lead Solder Temperature - Maximum 10 Seconds Duration	T_L	260	°C

1. Non-repetitive current pulse per Figure 1.
2. Only 1 diode under power. For all 4 diodes under power, P_D will be 25%. Mounted on FR4 board with min. pad.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Breakdown Voltage (I_T = 1 mA) (Note 3)	V_{BR}	6.4	6.8	7.1	V
Leakage Current (V_{RWM} = 5.0 V)	I_R	-	-	1.0	μA
Clamping Voltage 1 (I_{PP} = 1.6 A, 8 X 20 μsec Waveform)	V_C	-	-	13	V
Maximum Peak Pulse Current (8 X 20 μsec Waveform)	I_{PP}	-	-	1.6	A
Junction Capacitance - (V_R = 0 V, f = 1 MHz) - (V_R = 3 V, f = 1 MHz)	C_J	- -	12 6.7	15 9.5	pF

3. V_{BR} is measured at pulse test current I_T.

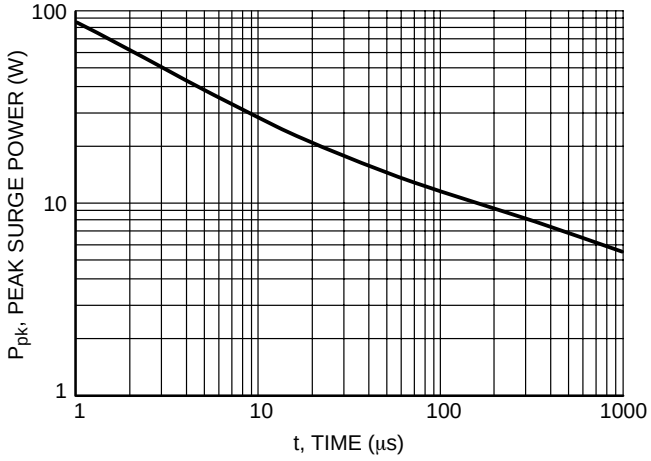


Figure 1. Pulse Width

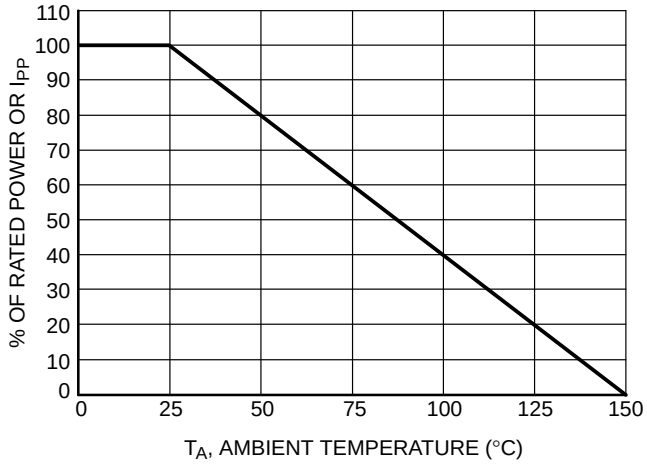


Figure 2. Power Derating Curve

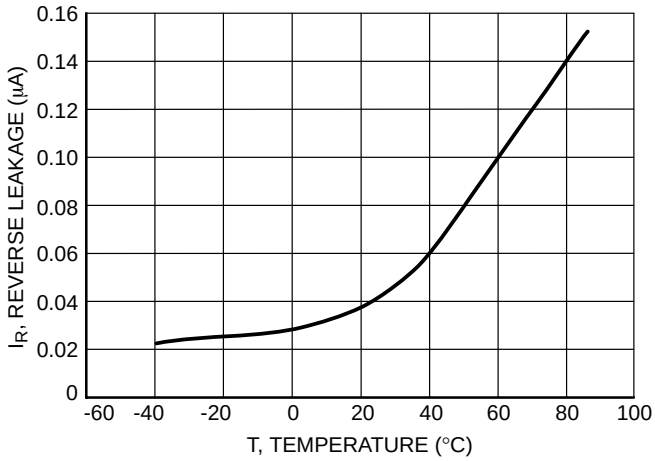


Figure 3. Reverse Leakage versus Temperature

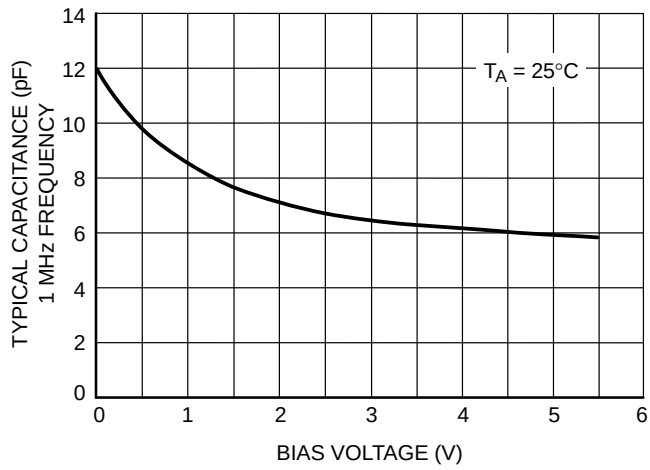


Figure 4. Capacitance

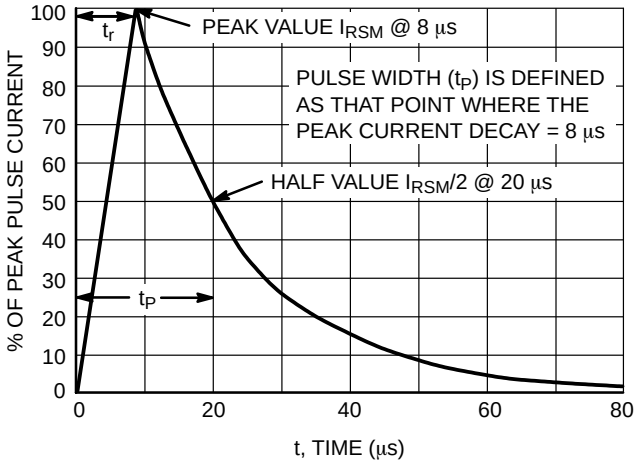


Figure 5. 8 × 20 μs Pulse Waveform

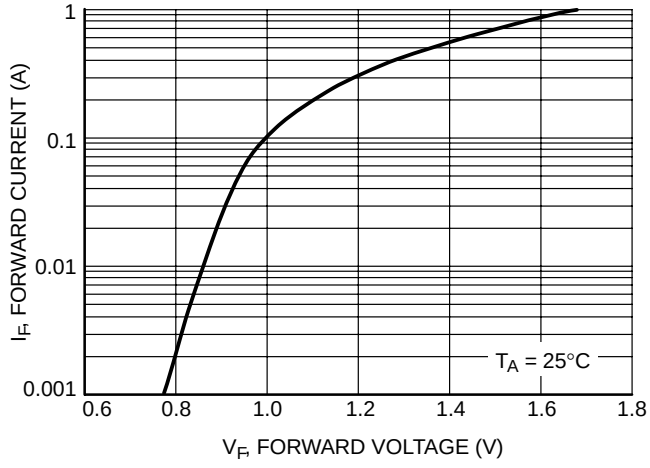
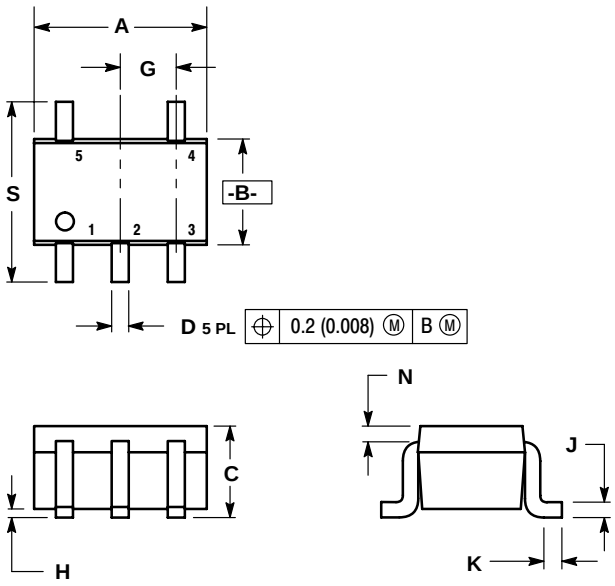


Figure 6. Forward Voltage

NSQA6V8AW5T2

PACKAGE DIMENSIONS

SC-88A/SOT-323
5-LEAD PACKAGE
CASE 419A-02
ISSUE F



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419A–01 OBSOLETE. NEW STANDARD 419A–02.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

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
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
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2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051
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