MSQA6V1W5T2

Quad Array for ESD Protection

This quad 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 quad 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

- SC88A Package Allows Four Separate Unidirectional Configurations
- Low Leakage < 1 μA @ 3 Volt
- Breakdown Voltage: 6.1 Volt − 7.2 Volt @ 1 mA
- Low Capacitance (90 pF typical)
- ESD Protection Meeting IEC1000−4−2

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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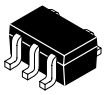
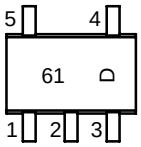
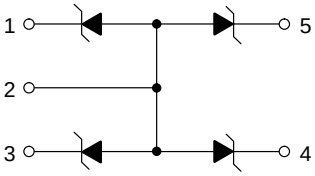


SC−88A/SOT−323
CASE 419A

MARKING DIAGRAM



61 = Device Marking
D = One Digit Date Code



ORDERING INFORMATION

Device	Package	Shipping†
MSQA6V1W5T2	SC−88A	3000/Tape & Reel

NOTE: T2 Suffix Devices are Packaged with Pin 1 Opposing Sprocket Hole.

†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.

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

Characteristic		Symbol	Value	Unit
Peak Power Dissipation @ 20 μs @$T_A \le$ 25°C (Note 1)		P_{pk}	150	W
Steady State Power − 1 Diode (Note 2)		P_D	385	mW
Thermal Resistance Junction to Ambient Above 25°C, Derate		$R_{\theta JA}$	325 3.1	°C/W mW/°C
Maximum Junction Temperature		T_{Jmax}	150	°C
Operating Junction and Storage Temperature Range		T_J T_{stg}	−55 to +150	°C
ESD Discharge	MIL STD 883C − Method 3015−6 IEC1000−4−2, Air Discharge IEC1000−4−2, Contact Discharge	V_{PP}	16 16 9	kV
Lead Solder Temperature (10 seconds duration)		T_L	260	°C

ELECTRICAL CHARACTERISTICS

Device	Breakdown Voltage V_{BR} @ 1 mA (Volts)			Leakage Current I_{RM} @ V_{RWM} = 3 V (μA)	Capacitance @ 0 V Bias (pF)	Max V_F @ I_F = 200 mA (V)
	Min	Nom	Max			
MSQA6V1W5	6.1	6.6	7.2	1.0	90	1.25

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

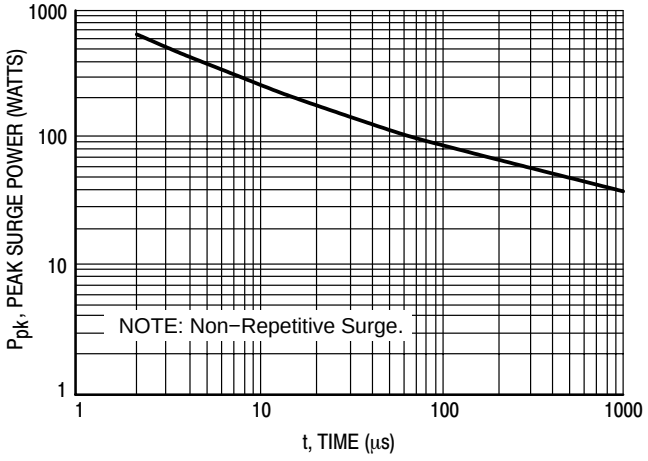


Figure 1. Pulse Width

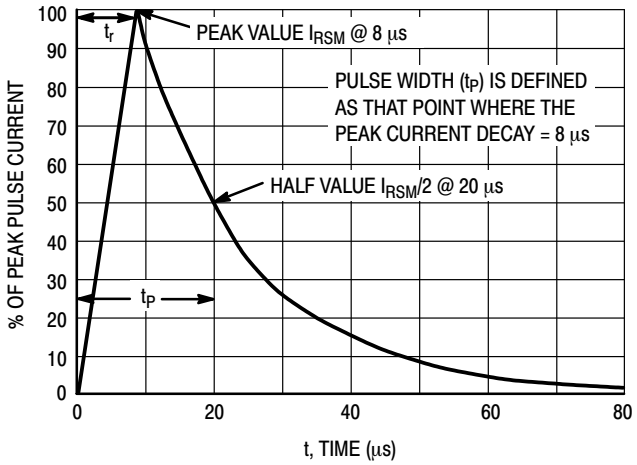


Figure 2. 8 × 20 μs Pulse Waveform

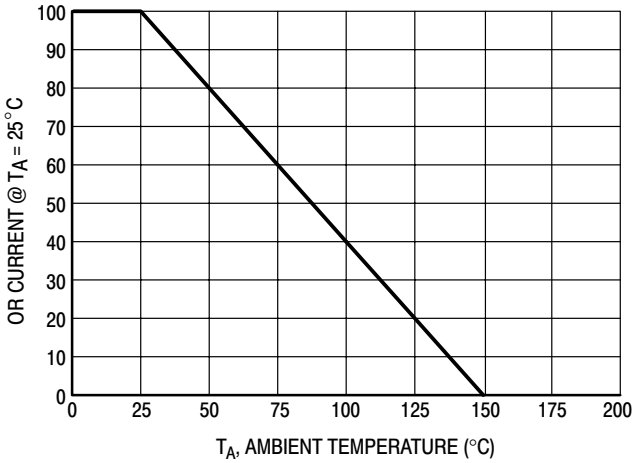


Figure 3. Pulse Derating Curve

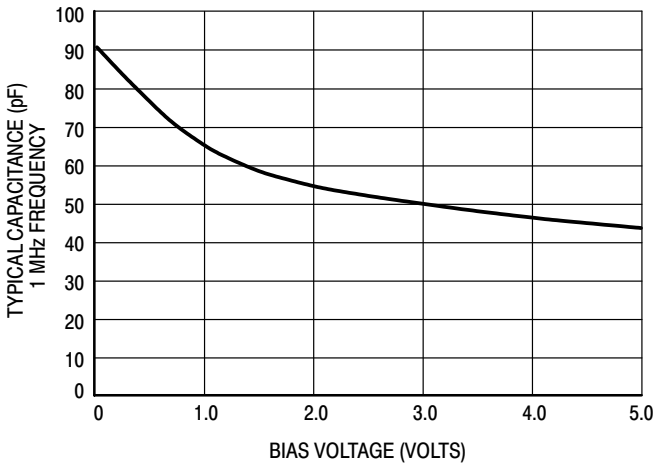


Figure 4. Capacitance

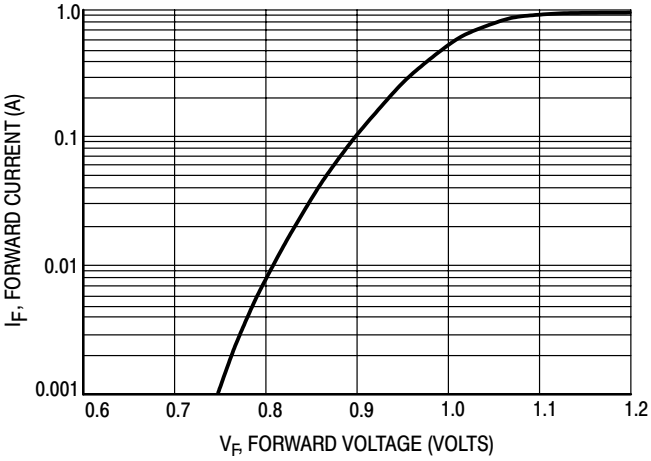


Figure 5. Forward Voltage

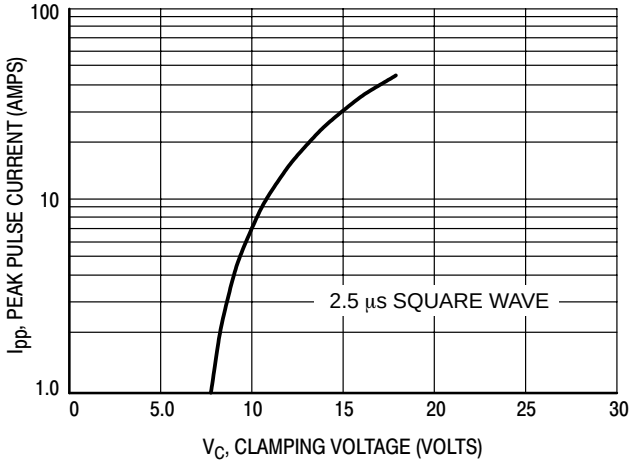


Figure 6. Clamping Voltage versus Peak Pulse Current (Reverse Direction)

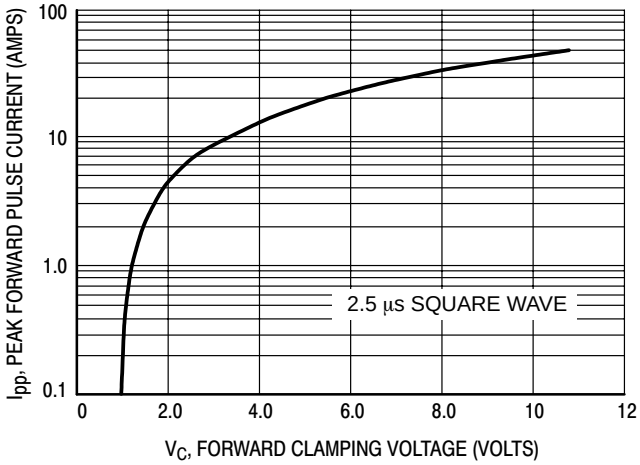
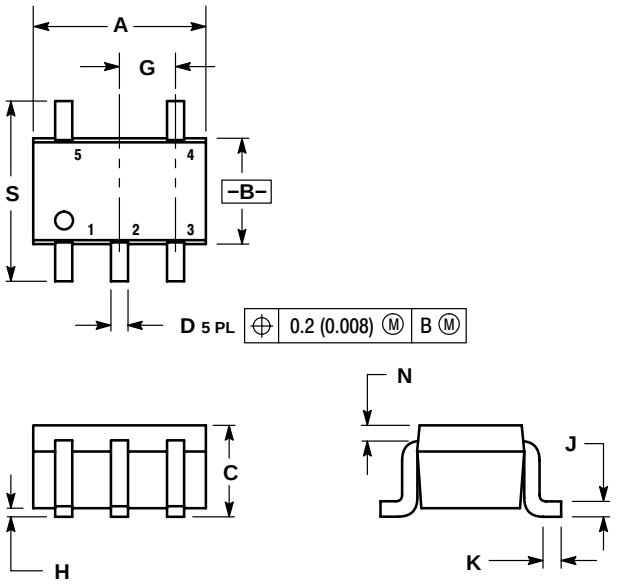


Figure 7. Clamping Voltage versus Peak Pulse Current (Forward Direction)

MSQA6V1W5T2

PACKAGE DIMENSIONS

SC−88A/SOT−323
5−LEAD PACKAGE
CASE 419A−02
ISSUE G



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419A−01 OBSOLETE. NEW STANDARD 419A−02.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

	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:
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