

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 μ A @ 3 Volt
- Breakdown Voltage: 6.1 Volt – 7.2 Volt @ 1 mA
- Low Capacitance (90 pF typical)
- ESD Protection Meeting IEC1000–4–2

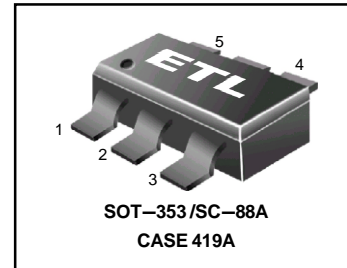
Mechanical Characteristics

- 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

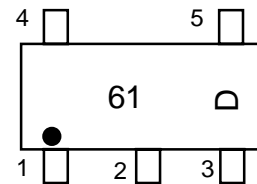
ORDERING INFORMATION

Device	Package	Shipping
MSQA6V1W5	SC-88A	3000/Tape & Reel

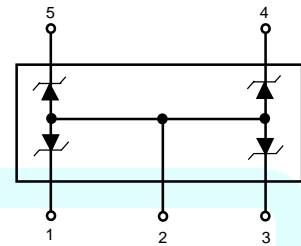
MSQA6V1W5



MARKING DIAGRAM



61 = Device Marking
D = One Digit Date Code



MSQA6V1W5

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

Characteristic	Symbol	Value	Unit
Peak Power Dissipation @ 20 μs @ T _A ≤ 25°C (Note 1.)	P _{pk}	150	Watts
Steady State Power – 1 Diode (Note 2.)	P _D	385	mW
Thermal Resistance Junction to Ambient	R _{θJA}	325	°C/W
Above 25°C, Derate		3.1	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	V _{pp}	16	kV
		IEC1000–4–2, Air Discharge	16
		IEC1000–4–2, Contact Discharge	9
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 _{RM} = 3 V	Capacitance @ 0 V Bias	Max V _F @ I _F = 200 mA
	Min	Nom	Max	(μA)	(pF)	(V)
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.

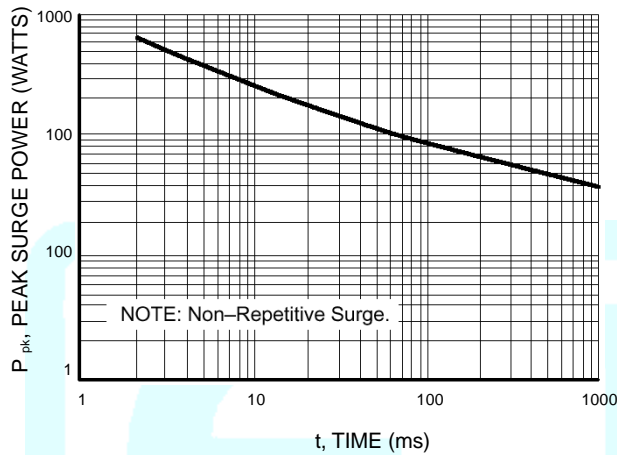


Figure 1. Pulse Width

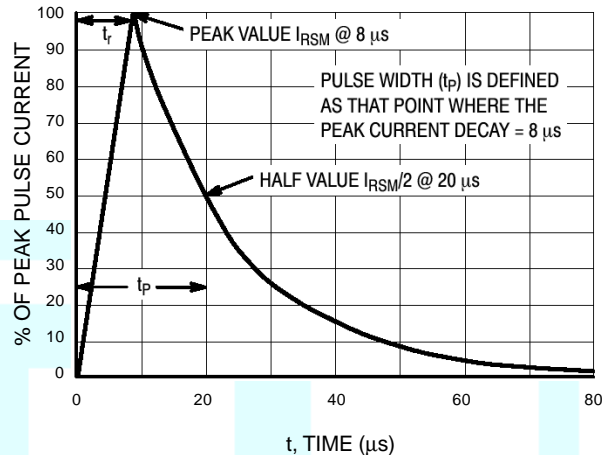


Figure 2. 8 × 20 μs Pulse Waveform

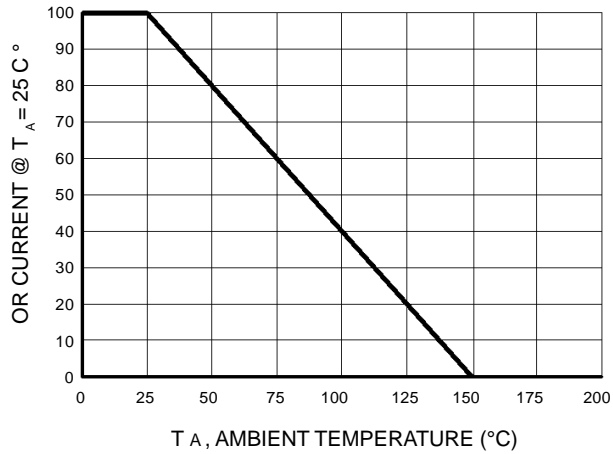


Figure 3. Pulse Derating Curve

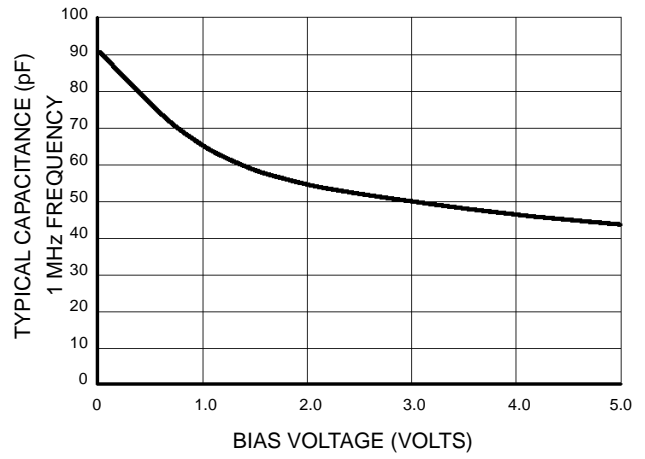


Figure 4. Capacitance

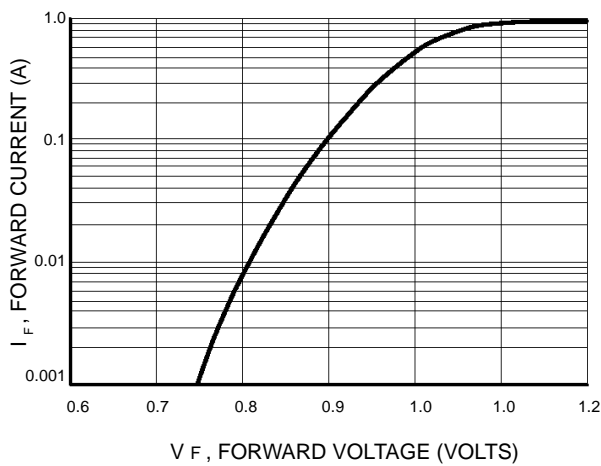


Figure 5. Forward Voltage

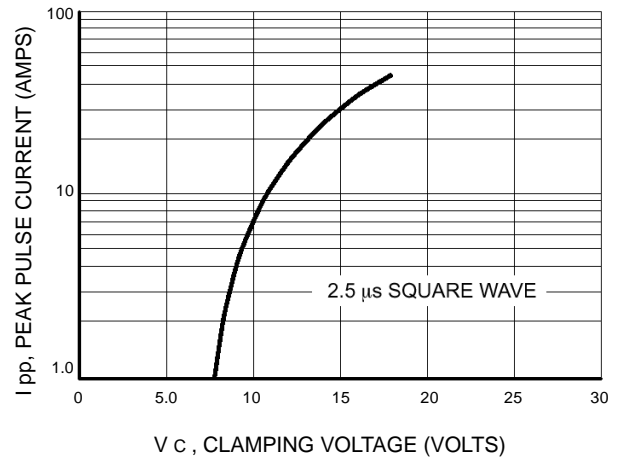


Figure 6. Clamping Voltage versus Peak Pulse Current (Reverse Direction)

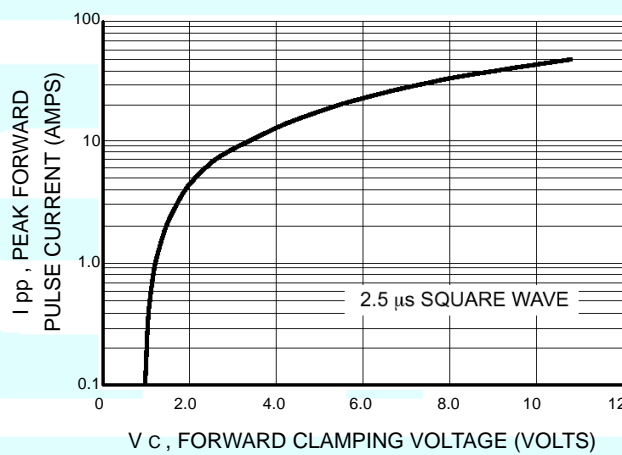


Figure 7. Clamping Voltage versus Peak Pulse Current (Forward Direction)