





Features

- ♦ For surface mounted application
- ♦ Low profile package
- ♦ Built-in strain relief
- ♦ Glass passivated junction
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \diamond Typical I_R less than 1 μ A above 10V
- High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- 1500 watts peak pulse power capability with a 10 X 1000 us waveform by 0.01% duty cycle

Mechanical Data

- ♦ Case: Molded plastic
- ♦ Terminals: Pure tin plated lead free.
- ♦ Polarity: Indicated by cathode band
- Standard packaging: 16mm tape (EIA STD RS-481)
- ♦ Weight: 0.21gram

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at T _A =25°C, Tp=1ms (Note 1)	P _{PK}	Minimum 1500	Watts
Steady State Power Dissipation	Pd	5	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3) - Unidirectional Only	I _{FSM}	200	Amps
Maximum Instantaneous Forward Voltage at 100.0A for Unidirectional Only (Note 4)	V _F	3.5 / 5.0	Volts
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to + 150	°C

Notes: 1. Non-repetitive Current Pulse Per Fig. 3 and Derated above $T_A=25^{\circ}C$ Per Fig. 2.

2. Mounted on 8.0mm² (.013mm Thick) Copper Pads to Each Terminal.

3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.

4. V_F =3.5V on SMCJ5.0 thru SMCJ90 Devices and V_F =5.0V on SMCJ100 thru SMCJ170 Devices.

Devices for Bipolar Applications

1. For Bidrectional Use C or CA Suffix for Types SMCJ5.0 through Types SMCJ170.

2. Electrical Characteristics Apply in Both Directions.

SMCJ SERIES

1500 Watts Surface Mount Transient Voltage Suppressor

SMC/DO-214AB



Dimensions in inches and (millimeters)



RATINGS AND CHARACTERISTIC CURVES (SMCJ SERIES)



FIG.3- CLAMPING POWER PULSE WAVEFORM





FIG.2- DERATING CURVE



FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



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

Device Type Madfind Device (Note 1) Voltage (Wole 1) Test (Wole 1) Stand-off (Wole 1) Reverse (Wole 1) Reverse at Voltage (Wole 1) Reverse (Wole 2) (Amp) Desk Puilse (Wole 2) (Amp) Madimut Voltage at 1 (Wole 2) (Amp) SMG.JS.0 GDD 6.407.7.3 10.0 5.0 1000 174.0 9.6 SMG.JS.0 GDF 6.677.8.15 10.0 6.0 1000 132.0 11.4 SMG.JS.0 GDF 6.677.8.15 10.0 6.5 500 123.0 11.3 SMG.JS.0 GDH 7.227.88.1 10.0 6.5 500 124.0 12.3 SMG.JS.6 GDH 7.227.88.0 10.0 7.0 200 131.0 12.3 SMG.JS.6 GDN 8.337.0.3 1.0 7.5 100 110.0 14.3 SMG.JS.6 GDD 8.897.0.9 1.0 8.5 20 99.0 15.9 SMG.JS.6 GDD 9.44/10.4 10.8 5.0 110.0 15.9 SMG.JS.6	· · · · · · · · · · · · · · · · · · ·			174-20 0			/	
Modified 'J' Bend Lead WeiRy (Voits) (Notes) Current (Notes) voitage (WeiVoits) Leakage at Voitage at IV (Notes) Surge (Voites) Current Voitage at IV (Notes) Current (Voites) Voitage at IV (Notes) Current (Notes) Voitage at IV (Notes) Current (Notes) Voitage at IV (Notes) Current (Notes) Voitage at IV (Notes) Current (Notes) Voitage At IV (Notes) Current (Notes) Notes) Notes <t< td=""><td></td><td></td><td>Breakdown</td><td></td><td>0</td><td>Maximum</td><td>Maximum</td><td></td></t<>			Breakdown		0	Maximum	Maximum	
"J" Bend Lead Code" (Note 1) (NN / NA) at IrmA) Vww (Vorts) (Note 3) (Amp) at Vww (Note 3) (Amp) Vortuge at I (Note 3) (Amp) SMCJS.0 GOD 6.40/7.3 10.0 5.0 1000 174.0 9.6 SMCJS.0 GOF 6.67/7.15 10.0 6.0 1000 174.0 9.2 SMCJS.0 GOF 6.67/7.15 10.0 6.0 1000 152.0 10.3 SMCJS.5 GDH 7.22/7.82 10.0 6.5 500 128.0 11.2 SMCJF.0 GDL 7.78/9.51 10.0 7.0 200 118.0 11.2 SMCJF.A GDM 7.78/9.50 10.0 7.0 200 118.0 13.3 SMCJF.A GDP 8.33/9.21 1.0 7.5 100 12.0 12.3 SMCJ8.0 GDP 8.89/9.83 1.0 8.5 20 99.0 15.9 SMCJ8.5A GDT 9.44/11.5 1.0 8.5 20 99.0 <td< td=""><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></td<>			-					
(min/ max) (mode 2) (mode 2) (ampe)					•	•	•	
SMC150 GDD 6.40/7.3 10.0 5.0 1000 171.0 9.2 SMC15.0 GDF 6.67/8.15 10.0 6.0 1000 171.0 9.2 SMC16.0 GDF 6.67/8.15 10.0 6.0 1000 152.0 10.3 SMC16.5 GDH 7.22/8.82 10.0 6.5 500 148.0 11.2 SMC16.5A GDK 7.22/7.98 10.0 6.5 500 148.0 11.3 SMC17.0 GDL 7.78/8.60 10.0 7.0 200 118.0 13.3 SMC17.5A GDP 8.33/9.21 1.0 7.5 100 110.0 14.3 SMC18.5A GDT 9.44/10.4 1.0 8.5 20 99.0 15.9 SMC38.0A GDT 9.44/10.4 1.0 8.5 20 199.0 14.4 SMC49.0A GDV 10.0/11.1 1.0 9.0 10 9.3.0 16.9 SMC40.0	"J" Bend Lead	Code		at I⊤(mA)	Vwm(Volts)			Voltage at IPPM
SMC150A GDE 6.40/7.0 10.0 5.0 1000 171.0 9.2 SMC16.0 GDF 6.67/7.37 10.0 6.0 1000 133.0 11.4 SMC16.5 GDH 7.22/8.82 10.0 6.5 500 140.0 11.2 SMC16.5 GDK 7.72/9.82 10.0 6.5 500 140.0 11.2 SMC17.0 GDL 7.78/9.51 10.0 7.0 200 131.0 12.0 SMC37.5 GDN 8.33/10.3 1.0 7.5 100 122.0 12.9 SMC38.0 GDQ 8.89/10.9 1.0 8.0 50 115.0 13.6 SMC38.5 GDS 9.44/11.5 1.0 8.5 20 190.0 14.4 SMC49.0 GDU 10.0/12.2 1.0 9.0 10 102.0 15.9 SMC49.0 GDU 10.0/12.2 1.0 11.0 5.0 66.0 23.8 SMC49.0								. ,
SMCLE0 GDF 6.67 / 8.15 10.0 6.0 1000 138.0 11.4 SMCL6.5 GDH 7.22 / 8.2 10.0 6.5 500 123.0 123.3 SMCL6.5.5 GDH 7.22 / 7.86 10.0 6.5 500 140.0 11.2 SMCJ7.0 GDL 7.78 / 8.60 10.0 7.0 200 118.0 13.3 SMCJ7.5A GDP 8.33 / 9.21 1.0 7.5 100 110.0 14.3 SMCJ8.0 GDD 8.89 / 9.83 1.0 8.0 50 115.0 15.0 SMCJ8.5 GDS 9.44 / 10.4 1.0 8.5 20 199.0 15.9 SMCJ8.5A GDT 9.44 / 10.4 1.0 8.5 20 199.0 16 SMCJ9.0A GDV 10.0 / 11.1 1.0 9.0 10 102.0 15.4 SMCJ10 GDW 11.1 / 12.3 1.0 10.0 5.0 92.0 17.0 S								
SMCL8.0A GDG 6.67/7.37 10.0 6.0 1000 152.0 10.3 SMCL6.5A GDK 7.22/7.88 10.0 6.5 50.0 140.0 11.2.3 SMCJA5.A GDK 7.22/7.88 10.0 6.5 50.0 140.0 11.2.3 SMCJ7.0 GDL 7.78/9.51 10.0 7.0 200 131.0 12.0 SMCJ7.5 GDN 8.33/10.3 1.0 7.5 100 110.0 14.3 SMCJ8.6 GDQ 8.89/10.9 1.0 8.0 50 115.0 13.8 SMCJ8.5 GDS 9.44/11.5 1.0 8.5 20 190.0 14.4 SMCJ9.0 GDU 10.0/12.2 1.0 9.0 10 102.0 15.9 SMCJ10 GDW 11.1/13.8 1.0 10.0 5.0 83.0 18.8 SMCJ10 GDW 11.1/13.8 1.0 11.0 5.0 71.0 22.0 SMCJ11	SMCJ5.0A		6.40 / 7.0				171.0	9.2
SMC:ES GDH 7.22/8.82 10.0 6.5 500 128.0 12.3 SMCJF.3A GDL 7.78/9.51 10.0 6.5 500 140.0 11.2 SMCJF.3A GDM 7.78/9.51 10.0 7.0 200 118.0 13.3 SMCJF.5A GDN 8.33/10.3 1.0 7.5 100 110.0 13.3 SMCJF.5A GDP 8.33/9.21 1.0 7.5 100 110.0 1.3.3 SMCJR.5 GDS 9.44/11.5 1.0 8.0 50 1105.0 15.5 SMCJR.5A GDT 9.44/10.4 1.0 8.5 20 109.0 14.4 SMCJR.0A GDV 10.0/11.2 1.0 9.0 10 10.2 15.9 SMCJR.0A GDV 10.0/11.2 1.0 10.0 5.0 83.0 18.8 SMCJR.0A GDV 11.1/12.3 1.0 11.0 5.0 78.0 20.1 SMCJ1A	SMCJ6.0	GDF	6.67 / 8.15	10.0	6.0	1000	138.0	11.4
SMC.15A GDK 7.22/7.98 10.0 6.5 500 140.0 11.2 SMC.J7.0A GDM 7.78/8.60 10.0 7.0 200 118.0 13.3 SMC.J7.5 GDN 8.33/10.3 1.0 7.5 100 110.0 14.0 SMC.J7.5 GDN 8.33/10.3 1.0 7.5 100 112.0 12.9 SMC.B.0A GDQ 8.89/10.9 1.0 8.0 50 105.0 15.9 SMC.B.5 GDS 9.44/11.5 1.0 8.5 2.0 199.0 14.4 SMC.J8.5 GDS 9.44/11.4 1.0 8.5 2.0 199.0 142.0 SMC.J8.0 GDV 10.0/11.2 1.0 9.0 10 12.0 15.4 SMC.J10A GDV 10.0/11.2 1.0 10.0 5.0 78.0 20.1 SMC.J30.0 GDU 10.0/11.2 1.0 10.0 5.0 71.0 22.0 500 71.0	SMCJ6.0A	GDG	6.67 / 7.37	10.0	6.0	1000	152.0	10.3
SMCJ7.0 GDL 7.78/9.51 10.0 7.0 200 118.0 13.3 SMCJ7.5 GDN 8.33/10.3 1.0 7.5 100 110.0 14.3 SMCJ7.5A GDP 8.33/9.21 1.0 7.5 100 112.0 12.0 SMCJ7.5A GDP 8.33/9.21 1.0 7.5 100 122.0 12.9 SMCJ8.0A GDR 8.89/9.83 1.0 8.0 50 115.0 15.9 SMCJ8.5A GDT 9.44/10.4 1.0 8.5 2.0 199.0 14.4 SMCJ8.0A GDV 10.0/11.2 1.0 9.0 10 102.0 15.8 SMCJ9.0A GDV 10.0/11.1 1.0 9.0 10 102.0 15.4 SMCJ10A GDX 11.1/12.3 1.0 10.0 5.0 92.0 17.0 SMCJ10A GDX 11.1/17.3 1.0 11.0 5.0 66.0 18.2 SMCJ13	SMCJ6.5	GDH	7.22 / 8.82	10.0	6.5	500	128.0	12.3
SMCJ70A GDM 7.76 / 8.00 10.0 7.0 200 131.0 12.0 SMCJ7.5 GDN 8.33 / 9.21 1.0 7.5 100 110.0 14.3 SMCJ8.0 GDP 8.33 / 9.21 1.0 7.5 100 112.0 12.3 SMCJ8.0 GDR 8.89 / 10.9 1.0 8.0 50 105.0 15.0 SMCJ8.5 GDS 9.44 / 11.5 1.0 8.5 20 99.0 15.9 SMCJ8.5A GDU 10.0 / 12.2 1.0 9.0 10 93.0 16.9 SMCJ9.0 GDU 10.0 / 12.2 1.0 9.0 10 10.2.0 15.4 SMCJ0.0 GDU 10.0 / 12.1 1.0 9.0 10 10.2.0 15.0 SMCJ10 GDW 11.1 / 12.3 1.0 11.0 5.0 88.0 18.8 SMCJ112 GED 13.3 / 14.7 1.0 11.0 5.0 78.0 22.0 SMCJ114	SMCJ6.5A	GDK	7.22 / 7.98	10.0	6.5	500	140.0	11.2
SMCJ7.5 GDN 8.33/10.3 1.0 7.5 100 110.0 14.3 SMCJ7.5A GDP 8.33/9.21 1.0 7.5 100 122.0 12.9 SMCJ8.0A GDQ 8.89/10.9 1.0 8.0 50 115.0 13.6 SMCJ8.5 GDS 9.44/11.5 1.0 8.5 20 199.0 14.4 SMCJ8.5A GDT 9.44/10.4 1.0 8.5 20 199.0 14.4 SMCJ8.0A GDV 10.0/11.1 1.0 9.0 10 192.0 15.4 SMCJ10 GDW 11.1/12.3 1.0 10.0 5.0 83.0 18.8 SMCJ11 GDY 12.2/14.9 1.0 11.0 5.0 76.0 22.0 SMCJ12 GED 13.3/16.3 1.0 12.0 5.0 71.0 22.0 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13 GEF	SMCJ7.0	GDL	7.78 / 9.51	10.0	7.0	200	118.0	13.3
SMCJ7.5 GDN 8.33/10.3 1.0 7.5 100 110.0 14.3 SMCJ7.5A GDP 8.33/9.21 1.0 7.5 100 122.0 12.9 SMCJ8.0A GDQ 8.89/10.9 1.0 8.0 50 115.0 13.6 SMCJ8.5 GDS 9.44/11.5 1.0 8.5 20 199.0 14.4 SMCJ8.5A GDT 9.44/10.4 1.0 8.5 20 199.0 14.4 SMCJ8.0A GDV 10.0/11.1 1.0 9.0 10 192.0 15.4 SMCJ10 GDW 11.1/12.3 1.0 10.0 5.0 83.0 18.8 SMCJ11 GDY 12.2/14.9 1.0 11.0 5.0 76.0 22.0 SMCJ12 GED 13.3/16.3 1.0 12.0 5.0 71.0 22.0 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13 GEF	SMCJ7.0A	GDM	7.78 / 8.60	10.0	7.0	200	131.0	12.0
SMCJ75A GDP 8.33/9.21 1.0 7.5 100 122.0 123.0 SMCJ8.0 GDQ 8.89/9.83 1.0 8.0 50 105.0 15.0 SMCJ8.5 GDS 9.44/11.5 1.0 8.5 20 99.0 15.9 SMCJ8.5 GDT 9.44/10.4 1.0 8.5 20 99.0 15.9 SMCJ8.0 GDU 100.1/12.2 1.0 9.0 10 93.0 16.9 SMCJ9.0 GDU 10.0/11.1 1.0 9.0 10 102.0 15.4 SMCJ10 GDW 11.1/13.6 1.0 10.0 5.0 92.0 17.0 SMCJ11 GDZ 12.2/13.5 1.0 11.0 5.0 76.0 22.0 SMCJ12 GEE 13.3/14.3 1.0 12.0 5.0 71.0 22.0 SMCJ13 GEE 13.3/14.7 1.0 13.0 5.0 66.0 23.8 SMCJ14 GEE								
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SMC.B0.A GDR 8.89 / 9.83 1.0 8.0 50 115.0 13.6 SMC.B5.A GDT 9.44 / 10.4 1.0 8.5 20 199.0 15.9 SMC.B5.A GDT 9.44 / 10.4 1.0 8.5 20 199.0 14.4 SMC.J9.0 GDU 10.0 / 12.2 1.0 9.0 10 193.0 15.9 SMCJ9.0.A GDV 10.0 / 11.1 1.0 9.0 10 193.0 15.9 SMCJ10 GDW 11.1 / 12.3 1.0 10.0 5.0 83.0 18.8 SMCJ11 GDY 12.2 / 13.5 1.0 11.0 5.0 76.0 20.1 SMCJ12 GEE 13.3 / 16.3 1.0 12.0 5.0 71.0 22.0 SMCJ13 GEF 14.4 / 17.6 1.0 13.0 5.0 66.0 23.8 SMCJ14 GEK 15.6 / 19.1 1.0 14.0 5.0 67.0 23.2 SMCJ14<								
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SMCJ10 GDW 11.1/13.6 1.0 10.0 5.0 83.0 18.8 SMCJ10A GDX 11.1/12.3 1.0 10.0 5.0 92.0 17.0 SMCJ11 GDY 12.2/13.5 1.0 11.0 5.0 86.0 18.2 SMCJ12 GED 13.3/14.7 1.0 12.0 5.0 77.0 22.0 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ14 GEH 15.6/19.1 1.0 13.0 5.0 67.0 23.2 SMCJ15 GEL 16.7/20.4 1.0 15.0 5.0 66.0 23.2 SMCJ16 GEN 16.7/20.4 1.0 15.0 5.0 64.0 24.4 SMCJ16 GEN 17.8/21.8 1.0 16.0 5.0 64.0 24.8 SMCJ16 GEN 17.8/19.7 1.0 16.0 5.0 64.0 22.2 SMCJ16 GEN								
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SMCJ11 GDY 12.2/14.9 1.0 11.0 5.0 78.0 20.1 SMCJ11A GDZ 12.2/13.5 1.0 11.0 5.0 86.0 18.2 SMCJ12 GED 13.3/16.3 1.0 12.0 5.0 71.0 22.0 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 61.0 25.8 SMCJ14 GEH 15.6/19.1 1.0 14.0 5.0 61.0 25.8 SMCJ15 GEL 16.7/2.4 1.0 15.0 5.0 64.0 24.4 SMCJ16 GEP 17.8/18.5 1.0 15.0 5.0 64.0 24.4 SMCJ17 GEQ 18.9/21.8 1.0 16.0 5.0 61.0 25.0 SMCJ18 GEE 18.9/20.9 1.0 17.0 5.0 51.0 33.0 22.2 SMCJ17	SMCJ10	-	11.1 / 13.6	-				
SMCJ11A GDZ 12.2/13.5 1.0 11.0 5.0 86.0 18.2 SMCJ12 GED 13.3/14.3 1.0 12.0 5.0 71.0 22.0 SMCJ13A GEF 13.3/14.7 1.0 12.0 5.0 79.0 19.9 SMCJ13A GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13A GEG 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ14A GEH 15.6/17.2 1.0 14.0 5.0 67.0 23.2 SMCJ15A GEL 16.7/20.4 1.0 15.0 5.0 68.0 26.9 SMCJ16A GEP 17.8/18.5 1.0 15.0 5.0 64.0 24.4 SMCJ17 GEQ 18.9/23.1 1.0 17.0 5.0 51.0 30.5 SMCJ17A GER 18.9/20.9 1.0 17.0 5.0 53.0 22.2 SMCJ18A	SMCJ10A	GDX	11.1 / 12.3	1.0	10.0	5.0	92.0	17.0
SMCJ12 GED 13.3/16.3 1.0 12.0 5.0 71.0 22.0 SMCJ13A GEE 13.3/14.7 1.0 12.0 5.0 79.0 19.9 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 73.0 21.5 SMCJ13A GEG 14.4/15.9 1.0 13.0 5.0 66.0 23.8 SMCJ14 GEH 15.6/19.1 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7/20.4 1.0 15.0 5.0 64.0 24.4 SMCJ16A GEN 17.8/19.7 1.0 16.0 5.0 64.0 24.8 SMCJ17A GER 18.9/23.1 1.0 17.0 5.0 51.0 30.5 SMCJ18 GES 20.0/24.4 1.0 18.0 5.0 57.0 27.6 SMCJ18 GEY 22.2/27.1 1.0 20.0 5.0 43.0 35.8 SMCJ20A GEV<	SMCJ11	GDY	12.2 / 14.9	1.0	11.0	5.0	78.0	20.1
SMCJ12A GEE 13.3/14.7 1.0 12.0 5.0 79.0 19.9 SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13A GEG 14.4/15.9 1.0 13.0 5.0 73.0 21.5 SMCJ14A GEH 15.6/17.2 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7/20.4 1.0 15.0 5.0 68.0 26.9 SMCJ16A GEM 17.8/19.7 1.0 16.0 5.0 64.0 24.4 SMCJ16A GEP 17.8/19.7 1.0 16.0 5.0 64.0 24.4 SMCJ17A GER 18.9/23.1 1.0 17.0 5.0 51.0 30.5 SMCJ18A GET 20.0/22.1 1.0 18.0 5.0 48.0 32.2 SMCJ18A GET 20.0/22.1 1.0 18.0 5.0 43.0 35.8 SMCJ20A	SMCJ11A	GDZ	12.2 / 13.5	1.0	11.0	5.0	86.0	18.2
SMCJ13 GEF 14.4/17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13A GEG 14.4/15.9 1.0 13.0 5.0 73.0 21.5 SMCJ14 GEH 15.6/19.1 1.0 14.0 5.0 61.0 25.8 SMCJ14A GEK 15.6/17.2 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7/20.4 1.0 15.0 5.0 64.0 24.4 SMCJ16A GEN 17.8/21.8 1.0 16.0 5.0 60.0 26.0 SMCJ16A GEP 18.9/23.1 1.0 17.0 5.0 51.0 30.5 SMCJ18 GES 20.0/22.1 1.0 17.0 5.0 57.0 27.6 SMCJ18A GET 20.0/22.1 1.0 18.0 5.0 48.0 32.2 SMCJ20A GEV 22.2/27.1 1.0 20.0 5.0 43.0 35.8 SMCJ21A GE	SMCJ12	GED	13.3 / 16.3	1.0	12.0	5.0	71.0	22.0
SMCJ13 GEF 14.4 / 17.6 1.0 13.0 5.0 66.0 23.8 SMCJ13A GEG 14.4 / 15.9 1.0 13.0 5.0 73.0 21.5 SMCJ14 GEH 15.6 / 19.1 1.0 14.0 5.0 61.0 25.8 SMCJ14A GEK 15.6 / 17.2 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7 / 20.4 1.0 15.0 5.0 64.0 24.4 SMCJ16A GEP 17.8 / 13.7 1.0 16.0 5.0 64.0 24.4 SMCJ16A GEP 17.8 / 19.7 1.0 16.0 5.0 60.0 26.0 SMCJ17 GEQ 18.9 / 20.9 1.0 17.0 5.0 57.0 27.6 SMCJ18A GET 20.0 / 22.1 1.0 18.0 5.0 48.0 32.2 SMCJ20A GEV 22.2 / 27.1 1.0 20.0 5.0 48.0 32.4 SMCJ20A	SMCJ12A	GEE	13.3 / 14.7	1.0	12.0	5.0	79.0	19.9
SMCJ13A GEG 14.4 / 15.9 1.0 13.0 5.0 73.0 21.5 SMCJ14 GEH 15.6 / 19.1 1.0 14.0 5.0 61.0 25.8 SMCJ15 GEL 16.7 / 20.4 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7 / 70.4 1.0 15.0 5.0 64.0 24.4 SMCJ16 GEN 17.8 / 19.7 1.0 16.0 5.0 64.0 24.4 SMCJ16A GEP 17.8 / 19.7 1.0 16.0 5.0 60.0 26.0 SMCJ17 GEQ 18.9 / 23.1 1.0 17.0 5.0 51.0 30.5 SMCJ17A GER 18.9 / 20.9 1.0 17.0 5.0 48.0 32.2 SMCJ18A GET 20.0 / 22.1 1.0 18.0 5.0 53.0 29.2 SMCJ20A GEV 22.2 / 27.1 1.0 20.0 5.0 48.0 32.4 SMCJ22A<				1.0	13.0	5.0	66.0	23.8
SMCJ14 GEH 15.6 / 19.1 1.0 14.0 5.0 61.0 25.8 SMCJ14A GEK 15.6 / 17.2 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7 / 20.4 1.0 15.0 5.0 68.0 26.9 SMCJ15A GEM 17.8 / 21.8 1.0 16.0 5.0 64.0 24.4 SMCJ16A GEP 17.8 / 18.5 1.0 16.0 5.0 60.0 26.0 SMCJ17A GEQ 18.9 / 23.1 1.0 17.0 5.0 57.0 27.6 SMCJ18A GES 20.0 / 24.4 1.0 18.0 5.0 48.0 32.2 SMCJ18A GET 20.0 / 22.1 1.0 18.0 5.0 48.0 32.2 SMCJ20A GEV 22.2 / 27.1 1.0 20.0 5.0 48.0 32.4 SMCJ22A GEW 24.4 / 29.8 1.0 22.0 5.0 44.0 35.8 SMCJ2								
SMCJ14A GEK 15.6/17.2 1.0 14.0 5.0 67.0 23.2 SMCJ15 GEL 16.7/20.4 1.0 15.0 5.0 58.0 26.9 SMCJ15A GEM 16.7/18.5 1.0 15.0 5.0 64.0 24.4 SMCJ16A GEP 17.8/21.8 1.0 16.0 5.0 60.0 26.0 SMCJ17A GEQ 18.9/20.9 1.0 17.0 5.0 51.0 30.5 SMCJ18A GET 20.0/24.4 1.0 18.0 5.0 48.0 32.2 SMCJ20 GEU 22.2/27.1 1.0 18.0 5.0 48.0 32.4 SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 44.0 35.8 SMCJ22A GEZ 26.7/32.6 1.0 20.0 5.0 44.0 35.5 SMCJ24 GEZ 26.7/32.6 1.0 24.0 5.0 30.0 39.4 SMCJ24 GEZ								
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SMCJ15A GEM 16.7/18.5 1.0 15.0 5.0 64.0 24.4 SMCJ16 GEN 17.8/21.8 1.0 16.0 5.0 54.0 28.8 SMCJ16A GEP 17.8/19.7 1.0 16.0 5.0 60.0 26.0 SMCJ17A GEQ 18.9/23.1 1.0 17.0 5.0 57.0 27.6 SMCJ18A GES 20.0/24.4 1.0 18.0 5.0 48.0 32.2 SMCJ20 GEU 22.2/27.1 1.0 18.0 5.0 48.0 32.2 SMCJ20 GEU 22.2/27.1 1.0 20.0 5.0 48.0 32.4 SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 48.0 32.4 SMCJ24 GEZ 26.7/32.6 1.0 24.0 5.0 38.0 39.4 SMCJ24 GEZ 26.7/32.6 1.0 24.0 5.0 33.0 46.6 SMCJ26 GFD </td <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>				-				
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SMCJ18A GET 20.0/22.1 1.0 18.0 5.0 53.0 29.2 SMCJ20 GEU 22.2/27.1 1.0 20.0 5.0 43.0 35.8 SMCJ20A GEV 22.2/24.5 1.0 20.0 5.0 48.0 32.4 SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 39.0 39.4 SMCJ22A GEX 24.4/29.8 1.0 22.0 5.0 44.0 35.5 SMCJ24 GEY 26.7/32.6 1.0 24.0 5.0 36.0 43.0 SMCJ26 GFD 28.9/35.3 1.0 24.0 5.0 33.0 46.6 SMCJ28A GFE 28.9/31.9 1.0 26.0 5.0 37.0 42.1 SMCJ28A GFF 31.1/38.0 1.0 28.0 5.0 34.0 45.4 SMCJ28A GFFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GF	SMCJ17A	GER	18.9 / 20.9	1.0	17.0	5.0	57.0	27.6
SMCJ20 GEU 22.2/27.1 1.0 20.0 5.0 43.0 35.8 SMCJ20A GEV 22.2/24.5 1.0 20.0 5.0 48.0 32.4 SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 39.0 39.4 SMCJ22A GEX 24.4/26.9 1.0 22.0 5.0 44.0 35.5 SMCJ24 GEZ 26.7/32.6 1.0 22.0 5.0 40.0 38.9 SMCJ26 GFD 28.9/35.3 1.0 24.0 5.0 40.0 38.9 SMCJ28A GFE 28.9/31.9 1.0 26.0 5.0 37.0 42.1 SMCJ28A GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ33 GFL<	SMCJ18	GES	20.0 / 24.4	1.0	18.0	5.0	48.0	32.2
SMCJ20A GEV 22.2/24.5 1.0 20.0 5.0 48.0 32.4 SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 39.0 39.4 SMCJ22A GEX 24.4/29.8 1.0 22.0 5.0 44.0 35.5 SMCJ24 GEY 26.7/32.6 1.0 24.0 5.0 44.0 35.5 SMCJ24A GEZ 26.7/29.5 1.0 24.0 5.0 40.0 38.9 SMCJ26A GFE 28.9/35.3 1.0 24.0 5.0 40.0 38.9 SMCJ26A GFF 28.9/31.9 1.0 26.0 5.0 37.0 42.1 SMCJ28A GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ30A GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ30A GFK 33.3/36.8 1.0 30.0 5.0 29.0 53.3 SMCJ30A	SMCJ18A	GET	20.0 / 22.1	1.0	18.0	5.0	53.0	29.2
SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 39.0 39.4 SMCJ22A GEX 24.4/26.9 1.0 22.0 5.0 44.0 35.5 SMCJ24 GEY 26.7/32.6 1.0 24.0 5.0 44.0 35.5 SMCJ24A GEZ 26.7/29.5 1.0 24.0 5.0 40.0 38.9 SMCJ26A GFD 28.9/35.3 1.0 26.0 5.0 33.0 46.6 SMCJ28 GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ30A GFK 33.3/36.8 1.0 30.0 5.0 29.0 53.3 SMCJ30A GF	SMCJ20	GEU	22.2 / 27.1	1.0	20.0	5.0	43.0	35.8
SMCJ22 GEW 24.4/29.8 1.0 22.0 5.0 39.0 39.4 SMCJ22A GEX 24.4/26.9 1.0 22.0 5.0 44.0 35.5 SMCJ24 GEY 26.7/32.6 1.0 24.0 5.0 44.0 35.5 SMCJ24A GEZ 26.7/29.5 1.0 24.0 5.0 40.0 38.9 SMCJ26A GFD 28.9/35.3 1.0 26.0 5.0 33.0 46.6 SMCJ28 GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ30A GFK 33.3/36.8 1.0 30.0 5.0 29.0 53.3 SMCJ30A GF	SMCJ20A	GEV	22.2 /24.5	1.0	20.0	5.0	48.0	32.4
SMCJ22A GEX 24.4/26.9 1.0 22.0 5.0 44.0 35.5 SMCJ24 GEY 26.7/32.6 1.0 24.0 5.0 36.0 43.0 SMCJ24A GEZ 26.7/29.5 1.0 24.0 5.0 36.0 43.0 SMCJ26A GFD 28.9/35.3 1.0 26.0 5.0 33.0 46.6 SMCJ26A GFE 28.9/31.9 1.0 26.0 5.0 37.0 42.1 SMCJ28 GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ30 GFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ30A GFK 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ33A GFH 36.7/40.6 1.0 33.0 5.0 29.0 53.3 SMCJ33A GF				1.0		5.0		
SMCJ24 GEY 26.7/32.6 1.0 24.0 5.0 36.0 43.0 SMCJ24A GEZ 26.7/29.5 1.0 24.0 5.0 40.0 38.9 SMCJ26 GFD 28.9/35.3 1.0 26.0 5.0 33.0 46.6 SMCJ26A GFE 28.9/35.3 1.0 26.0 5.0 37.0 42.1 SMCJ26A GFE 28.9/31.9 1.0 26.0 5.0 37.0 42.1 SMCJ28A GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ33A GFK 33.3/36.8 1.0 30.0 5.0 29.0 53.3 SMCJ33A GFL 36.7/44.9 1.0 33.0 5.0 29.0 53.3 SMCJ36A G								
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SMCJ26 GFD 28.9/35.3 1.0 26.0 5.0 33.0 46.6 SMCJ26A GFE 28.9/31.9 1.0 26.0 5.0 37.0 42.1 SMCJ28A GFF 31.1/38.0 1.0 28.0 5.0 31.0 50.0 SMCJ28A GFG 31.1/34.4 1.0 28.0 5.0 34.0 45.4 SMCJ30 GFH 33.3/40.7 1.0 30.0 5.0 29.0 53.5 SMCJ30A GFK 33.3/36.8 1.0 30.0 5.0 29.0 53.5 SMCJ33A GFL 36.7/44.9 1.0 33.0 5.0 29.0 53.3 SMCJ33A GFM 36.7/40.6 1.0 33.0 5.0 29.0 53.3 SMCJ33A GFM 36.7/40.6 1.0 33.0 5.0 29.0 53.3 SMCJ33A GFP 40.0/48.9 1.0 36.0 5.0 24.0 64.3 SMCJ36A								
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SMCJ30 GFH 33.3 / 40.7 1.0 30.0 5.0 29.0 53.5 SMCJ30A GFK 33.3 / 36.8 1.0 30.0 5.0 32.0 48.4 SMCJ33 GFL 36.7 / 44.9 1.0 33.0 5.0 26.0 59.0 SMCJ33A GFM 36.7 / 40.6 1.0 33.0 5.0 26.0 59.0 SMCJ33A GFM 36.7 / 40.6 1.0 33.0 5.0 29.0 53.3 SMCJ33A GFM 36.7 / 40.6 1.0 33.0 5.0 29.0 53.3 SMCJ36A GFN 40.0 / 48.9 1.0 36.0 5.0 24.0 64.3 SMCJ36A GFP 40.0 / 44.2 1.0 36.0 5.0 27.0 58.1 SMCJ40 GFQ 44.4 / 54.3 1.0 40.0 5.0 22.0 71.4		-						
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SMCJ36 GFN 40.0 / 48.9 1.0 36.0 5.0 24.0 64.3 SMCJ36A GFP 40.0 / 44.2 1.0 36.0 5.0 27.0 58.1 SMCJ40 GFQ 44.4 / 54.3 1.0 40.0 5.0 22.0 71.4	SMCJ33	GFL	36.7 / 44.9	1.0	33.0	5.0	26.0	59.0
SMCJ36A GFP 40.0 / 44.2 1.0 36.0 5.0 27.0 58.1 SMCJ40 GFQ 44.4 / 54.3 1.0 40.0 5.0 22.0 71.4	SMCJ33A	GFM	36.7 / 40.6	1.0	33.0	5.0	29.0	53.3
SMCJ40 GFQ 44.4/54.3 1.0 40.0 5.0 22.0 71.4	SMCJ36	GFN	40.0 / 48.9	1.0	36.0	5.0	24.0	64.3
	SMCJ36A	GFP	40.0 / 44.2	1.0	36.0	5.0	27.0	58.1
	SMCJ40A	GFR	44.4 / 49.1	1.0	40.0	5.0	24.0	64.5
SMCJ43 GFS 47.8/58.4 1.0 43.0 5.0 20.0 76.7								
SMCJ43A GFT 47.8/52.8 1.0 43.0 5.0 22.0 69.4				-				

ELECTRICAL CHARACTERISTICS (TA=25^oC unless otherwise noted)

			1			/	
		Breakdown			Maximum	Maximum	
Device Type	Device	Voltage	Test	Stand-off	Reverse	Peak Pulse	Maximum
Modified	Marking	V(BR) (Volts)	Current	voltage	Leakage	Surge	Clamping
"J" Bend Lead	Code	(Note 1)	at I⊤(mA)	Vwm(Volts)	at Vwм	Current IPPM	Voltage at IPPM
		(MIN / MAX)			(Note 3) Ib(uA)	(Note 2) (Amps)	Vc(Volts)
SMCJ45	GFU	50.0 / 61.1	1.0	45.0	5.0	19.0	80.3
SMCJ45A	GFV	50.0 / 55.3	1.0	45.0	5.0	21.0	72.7
SMCJ48	GFW	53.3 / 65.1	1.0	48.0	5.0	18.0	85.5
SMCJ48A	GFX	53.3 / 58.9	1.0	48.0	5.0	20.0	77.4
SMCJ51	GFY	56.7 / 69.3	1.0	51.0	5.0	17.0	91.1
SMCJ51A	GFZ	56.7 / 62.7	1.0	51.0	5.0	19.0	82.4
SMCJ54	GGD	60.0 / 73.3	1.0	54.0	5.0	16.0	96.3
SMCJ54A	GGE	60.0 / 66.3	1.0	54.0	5.0	18.0	87.1
SMCJ58	GGF	64.4 / 78.7	1.0	58.0	5.0	15.0	103.0
SMCJ58A	GGG	64.4 / 71.2	1.0	58.0	5.0	16.0	93.6
SMCJ60	GGH	66.7 / 81.5	1.0	60.0	5.0	14.0	107.0
SMCJ60A	GGK	66.7 / 73.7	1.0	60.0	5.0	16.0	96.8
SMCJ64	GGL	71.1 / 86.9	1.0	64.0	5.0	13.8	114.0
SMCJ64A	GGM	71.1 / 78.6	1.0	64.0	5.0	15.0	103.0
SMCJ70	GGN	77.8 / 95.1	1.0	70.0	5.0	12.6	125.0
SMCJ70A	GGP	77.8 / 86.0	1.0	70.0	5.0	13.9	113.0
SMCJ75	GGQ	83.3 / 102	1.0	75.0	5.0	11.7	134.0
SMCJ75A	GGR	83.3 / 92.1	1.0	75.0	5.0	13.0	121.0
MSJC78	GGS	86.7 / 106	1.0	78.0	5.0	11.3	139.0
SMCJ78A	GGT	86.7 / 95.8	1.0	78.0	5.0	12.5	126.0
SMCJ85	GGU	94.4 / 115	1.0	85.0	5.0	10.4	151.0
SMCJ85A	GGV	94.4 / 104	1.0	85.0	5.0	11.5	137.0
SMCJ90	GGW	100 / 122	1.0	90.0	5.0	9.8	160.0
SMCJ90A	GGX	100 / 111	1.0	90.0	5.0	10.7	146.0
SMCJ100	GGY	111 / 136	1.0	100.0	5.0	8.8	179.0
SMCJ100A	GGZ	111 / 123	1.0	100.0	5.0	9.7	162.0
SMCJ110	GHD	122 / 149	1.0	110.0	5.0	8.0	196.0
SMCJ110A	GHE	122 / 135	1.0	110.0	5.0	8.9	177.0
SMCJ120	GHF	133 / 163	1.0	120.0	5.0	7.3	214.0
SMCJ120A	GHG	133 / 147	1.0	120.0	5.0	8.1	193.0
SMCJ130	GHH	144 / 176	1.0	130.0	5.0	6.8	231.0
SMCJ130A	GHK	144 / 159	1.0	130.0	5.0	7.5	209.0
SMCJ150	GHL	167 / 204	1.0	150.0	5.0	5.8	268.0
SMCJ150A	GHM	167 / 185	1.0	150.0	5.0	6.4	243.0
SMCJ160	GHN	178 / 218	1.0	160.0	5.0	5.4	287.0
SMCJ160A	GHP	178 / 197	1.0	160.0	5.0	6.0	259.0
SMCJ170	GHQ	189 / 231	1.0	170.0	5.0	5.1	304.0
SMCJ170A	GHR	189 / 209	1.0	170.0	5.0	5.7	275.0
Notes:					•		

Notes:

1. V(BR) measured after IT applied for 300us, IT=Square wave pulse or equivalent.

2. Surge current waveform per Fig. 3 and derate per Figure 2.

3. For bidirectional types having Vwm of 10 Volts and less, the lo limit is doubled

4. all terms and symbols are consistent with ANSI/IEEE C62.35

TVS APPLICATION NOTES:

Transient Voltage Suppressors may be used at various points in a circuit to provide various degrees of protection. The following is a typical linear power supply with transient voltage suppressor units placed at different points. All provide protection of the load.





Transient Voltage Suppressors 1 provides maximum protection. However, the system will probably require replacement of the line fuse(F) since it provides a dominant portion of the series impedance when a surge is encountered.

However, we do not recommend to use the TVS diode here, unless we can know the electric circuit impedance and the magnitude of surge rushed into the circuit. Otherwise the TVS diode is easy to be destroyed by voltage surge.

Transient Voltage Suppressor 2 provides execllent protection of circuitry excluding the transformer(T). However, since the transformer is a large part of the series impedance, the chance of the line fuse opening during the surge condition is reduced.

Transient Voltage Suppressor 3 provides the load with complete protection. It uses a unidirectional Transient Voltage Suppressor, which is a cost advantage. The series impedance now includes the line fuse, transformer, and bridge rectifier(B) so failure of the line fuse is further reduced. If only Transient Voltage Suppressor 3 is in use, then the bridge rectifier is unprotected and would require a higher voltage and current rating to prevent failure by transients.

Any combination of these three, or any one of these applications, will prevent damage to the load. This would require varying trade-offs in power supply protection versus maintenance(changing the time fuse).

An additional method is to utilize the Transient Voltage Suppressor units as a controlled avalanche bridge. This reduces the parts count and incorporates the protection within the bridge rectifier.





RECOMMENDED PAD SIZES

The pad dimensions should be 0.010"(0.25mm) longer than the contact size, in the lead axis. This allows a solder fillet to form, see figure below. Contact factory for soldering methods.

