

FEATURES

- * For surface mount application
- * Built-in strain relief
- * Excellent clamping capability
- * Low profile package
- * Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- * Typical I_R less than $1\mu A$ above 10V
- * High temperature soldering guaranteed: $260^{\circ}C$ / 10 seconds at terminals

MECHANICAL DATA

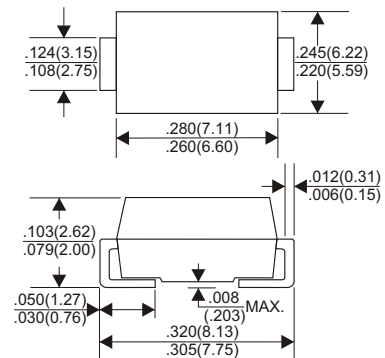
- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Lead: Solderable per MIL-STD-202, method 208 guaranteed
- * Polarity: Color band denotes cathode end except Bidirectional
- * Mounting position: Any
- * Weight: 0.21 grams

VOLTAGE RANGE

5.0 to 440 Volts

1500 Watts Peak Power

DO-214AB(SMC)



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating $25^{\circ}C$ ambient temperature unless otherwise specified.
 Single phase half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

| RATINGS | SYMBOL | VALUE | UNITS |
|--|------------------|--------------|---------------|
| Peak Power Dissipation at $T_A=25^{\circ}C$, $T_P=1ms$ (NOTE 1) | P_{PK} | Minimum 1500 | Watts |
| Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3) | I_{FSM} | 200 | Amps |
| Maximum Instantaneous Forward Voltage at 35.0A for Unidirectional only | V_F | 3.5 | Volts |
| Typical Thermal Resistance Between junction and case | $R_{\theta J-C}$ | 15 | $^{\circ}C/W$ |
| Typical Thermal Resistance Between junction and Air | $R_{\theta J-A}$ | 75 | $^{\circ}C/W$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^{\circ}C$ |

NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above $T_A=25^{\circ}C$ per Fig. 2.
2. Mounted on Copper Pad area of $8.0mm^2$ (.013mm Thick) to each terminal.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types SMCJ5.0 thru SMCJ440.
2. Electrical characteristics apply in both directions.

RATING AND CHARACTERISTIC CURVES (SMCJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

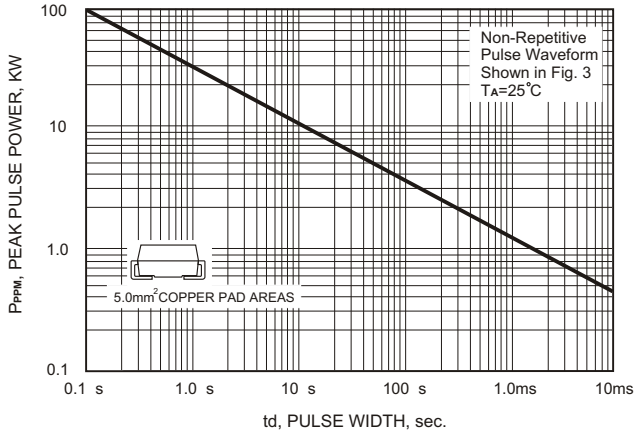


FIG.2-PULSE DERATING CURVE

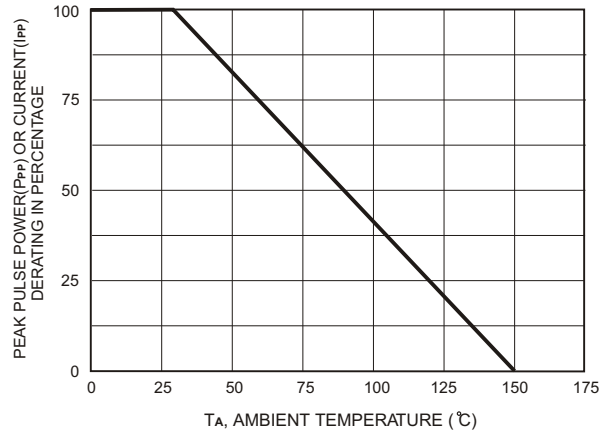


FIG.3-PULSE WAVE FORM

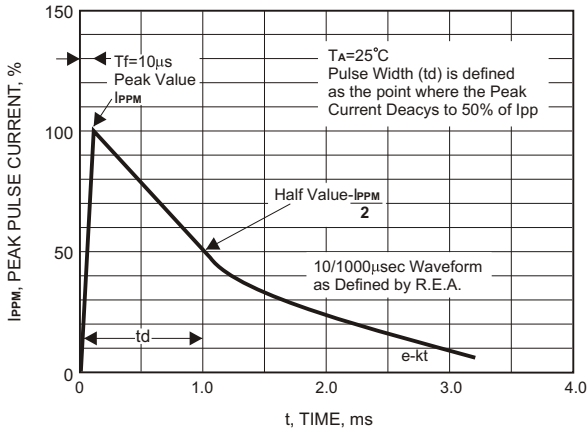


FIG.4-TYPICAL JUNCTION CAPACITANCE

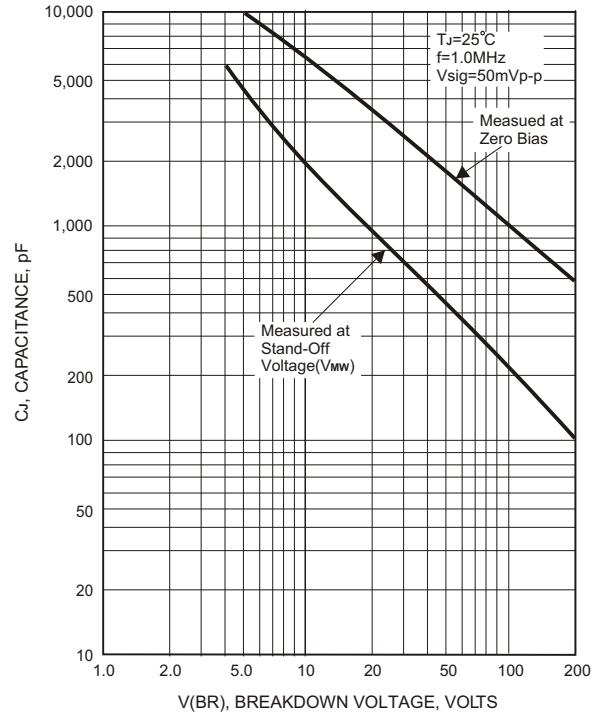
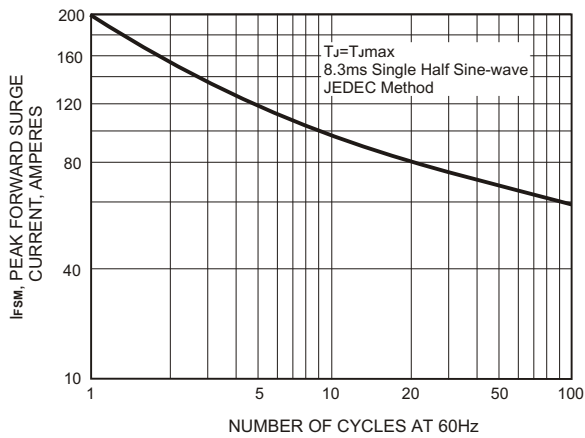


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



1500 Watt Surface Mount TVS

| PART NUMBER ADD C FOR BI- DIRECTIONAL See Note 1 | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @ VRWM IR(μA) | MARKING CODE | |
|---|---|---|---|-------------------------------|---|-------------------------------------|--|-----------------|-----|
| | | | | | | | | UNI | BI |
| SMCJ5.0(C)A | 5.0 | 6.40 | 7.25 | 10 | 9.2 | 163.0 | 1000 | GDE | GDE |
| SMCJ6.0(C)A | 6.0 | 6.67 | 7.67 | 10 | 10.3 | 145.6 | 1000 | GDG | GDG |
| SMCJ6.5(C)A | 6.5 | 7.22 | 8.30 | 10 | 11.2 | 133.9 | 500 | GDK | BDK |
| SMCJ7.0(C)A | 7.0 | 7.78 | 8.95 | 10 | 12.0 | 125.0 | 200 | GDM | GDM |
| SMCJ7.5(C)A | 7.5 | 8.33 | 9.58 | 1 | 12.9 | 116.3 | 100 | GDP | BDP |
| SMCJ8.0(C)A | 8.0 | 8.89 | 10.23 | 1 | 13.6 | 110.3 | 50 | GDR | BDR |
| SMCJ8.5(C)A | 8.5 | 9.44 | 10.82 | 1 | 14.4 | 104.2 | 20 | GDT | BDT |
| SMCJ9.0(C)A | 9.0 | 10.0 | 11.50 | 1 | 15.4 | 97.4 | 10 | GDV | BDV |
| SMCJ10(C)A | 10 | 11.1 | 12.80 | 1 | 17.0 | 88.2 | 5 | GDX | BDX |
| SMCJ11(C)A | 11 | 12.2 | 14.00 | 1 | 18.2 | 82.4 | 5 | GDZ | GDZ |
| SMCJ12(C)A | 12 | 13.3 | 15.30 | 1 | 19.9 | 75.3 | 5 | GEE | BEE |
| SMCJ13(C)A | 13 | 14.4 | 16.50 | 1 | 21.5 | 69.7 | 5 | GEG | GEG |
| SMCJ14(C)A | 14 | 15.6 | 17.90 | 1 | 23.2 | 64.7 | 5 | GEK | BEK |
| SMCJ15(C)A | 15 | 16.7 | 19.20 | 1 | 24.4 | 61.5 | 5 | GEM | BEM |
| SMCJ16(C)A | 16 | 17.8 | 20.50 | 1 | 26.0 | 57.7 | 5 | GEP | GEP |
| SMCJ17(C)A | 17 | 18.9 | 21.70 | 1 | 27.6 | 53.3 | 5 | GER | GER |
| SMCJ18(C)A | 18 | 20.0 | 23.30 | 1 | 29.2 | 51.4 | 5 | GET | BET |
| SMCJ20(C)A | 20 | 22.2 | 25.50 | 1 | 32.4 | 46.3 | 5 | GEV | BEV |
| SMCJ22(C)A | 22 | 24.4 | 28.00 | 1 | 35.5 | 42.2 | 5 | GEX | BEX |
| SMCJ24(C)A | 24 | 26.7 | 30.70 | 1 | 38.9 | 38.6 | 5 | GEZ | BEZ |
| SMCJ26(C)A | 26 | 28.9 | 33.20 | 1 | 42.1 | 35.6 | 5 | GFE | BFE |
| SMCJ28(C)A | 28 | 31.1 | 35.80 | 1 | 45.4 | 33.0 | 5 | GFG | BFG |
| SMCJ30(C)A | 30 | 33.3 | 38.30 | 1 | 48.4 | 31.0 | 5 | GFK | BFK |
| SMBJ33(C)A | 33 | 36.7 | 42.20 | 1 | 53.3 | 28.1 | 5 | GFM | BFM |
| SMCJ36(C)A | 36 | 40.0 | 46.00 | 1 | 58.1 | 25.8 | 5 | GFP | BFP |
| SMCJ40(C)A | 40 | 44.4 | 51.10 | 1 | 64.5 | 23.2 | 5 | GFR | BFR |
| SMCJ43(C)A | 43 | 47.8 | 54.90 | 1 | 69.4 | 21.6 | 5 | GFT | BFT |
| SMCJ45(C)A | 45 | 50.0 | 57.50 | 1 | 72.7 | 20.6 | 5 | GFV | GFV |
| SMCJ48(C)A | 48 | 53.3 | 61.30 | 1 | 77.4 | 19.4 | 5 | GFX | GFX |
| SMCJ51(C)A | 51 | 56.7 | 65.20 | 1 | 82.4 | 18.2 | 5 | GFZ | GFZ |
| SMCJ54(C)A | 54 | 60.0 | 69.00 | 1 | 87.1 | 17.2 | 5 | GGE | GGE |
| SMCJ58(C)A | 58 | 64.4 | 74.10 | 1 | 93.6 | 16.0 | 5 | GGG | GGG |

1500 Watt Surface Mount TVS

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|---|---|---|---|-------------------------------|---|-------------------------------------|--|-----------------|-----|
| | | | | | | | | UNI | BI |
| SMCJ60(C)A | 60 | 66.7 | 76.7 | 1 | 96.8 | 15.5 | 5 | GGK | GGK |
| SMCJ64(C)A | 64 | 71.1 | 81.8 | 1 | 103 | 14.6 | 5 | GGM | GGM |
| SMCJ70(C)A | 70 | 77.8 | 89.5 | 1 | 113 | 13.3 | 5 | GGP | GGP |
| SMCJ75(C)A | 75 | 83.3 | 95.8 | 1 | 121 | 12.4 | 5 | GGR | GGR |
| SMCJ78(C)A | 78 | 86.7 | 99.7 | 1 | 126 | 11.4 | 5 | GGT | GGT |
| SMCJ85(C)A | 85 | 94.4 | 108.2 | 1 | 137 | 10.4 | 5 | GGV | GGV |
| SMCJ90(C)A | 90 | 100 | 115.5 | 1 | 146 | 10.3 | 5 | GGX | GGX |
| SMCJ100(C)A | 100 | 111 | 128.0 | 1 | 162 | 9.3 | 5 | GGZ | GGZ |
| SMCJ110(C)A | 110 | 122 | 140.5 | 1 | 177 | 8.4 | 5 | GHE | GHE |
| SMCJ120(C)A | 120 | 133 | 153.0 | 1 | 193 | 7.9 | 5 | GHG | GHG |
| SMCJ130(C)A | 130 | 144 | 165.5 | 1 | 209 | 7.2 | 5 | GHK | GHK |
| SMCJ150(C)A | 150 | 167 | 192.5 | 1 | 243 | 6.2 | 5 | GHM | GHM |
| SMCJ160(C)A | 160 | 178 | 205.0 | 1 | 259 | 5.8 | 5 | GHP | GHP |
| SMCJ170(C)A | 170 | 189 | 217.5 | 1 | 275 | 5.5 | 5 | GHR | GHR |
| SMCJ188(C)A | 188 | 209 | 231.0 | 1 | 308 | 4.6 | 5 | GHS | GHS |
| SMCJ200(C)A | 200 | 224 | 247 | 1 | 324 | 4.6 | 5 | GHV | BHV |
| SMCJ220(C)A | 220 | 246 | 272 | 1 | 356 | 4.2 | 5 | GHX | BHX |
| SMCJ250(C)A | 250 | 279 | 309 | 1 | 405 | 3.7 | 5 | GHZ | BHZ |
| SMCJ300(C)A | 300 | 335 | 371 | 1 | 486 | 3.1 | 5 | GJE | BJE |
| SMCJ350(C)A | 350 | 391 | 432 | 1 | 567 | 2.6 | 5 | GJG | BJG |
| SMCJ400(C)A | 400 | 447 | 494 | 1 | 648 | 2.3 | 5 | GJK | BJK |
| SMCJ440(C)A | 440 | 492 | 543 | 1 | 713 | 2.1 | 5 | GJM | BJM |

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