

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 A above 10V
- * High temperature soldering guaranteed: 260°C / 10 seconds at terminals

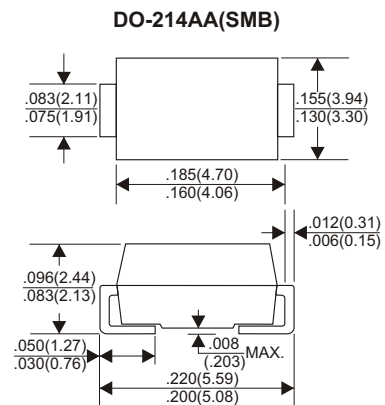
MECHANICAL DATA

- * 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: 0.093 grams

VOLTAGE RANGE

5.0 to 440 Volts

600 Watts Peak Power



- "GK" represents the brand name
- "XXX" represents the periodic code
- "YY" represents the product type marking

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°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°C, T _P =1ms(NOTE 1) | P _{PK} | Minimum 600 | Watts |
| Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3) | I _{FSM} | 100 | Amps |
| Typical Thermal Resistance Between junction and case | R _{θJ-C} | 20 | °C/W |
| Typical Thermal Resistance Between junction and Air | R _{θJ-A} | 95 | °C/W |
| 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°C per Fig. 2.
 2. Mounted on Copper Pad area of 5.0mm²(.013mm Thick) to each terminal.
 3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

RATING AND CHARACTERISTIC CURVES (SMBJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

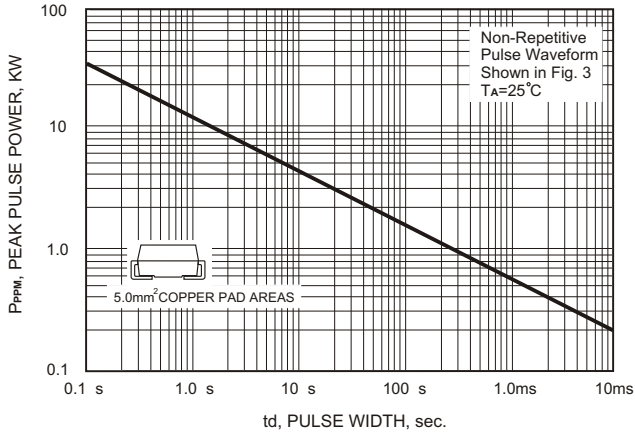


FIG.2-PULSE DERATING CURVE

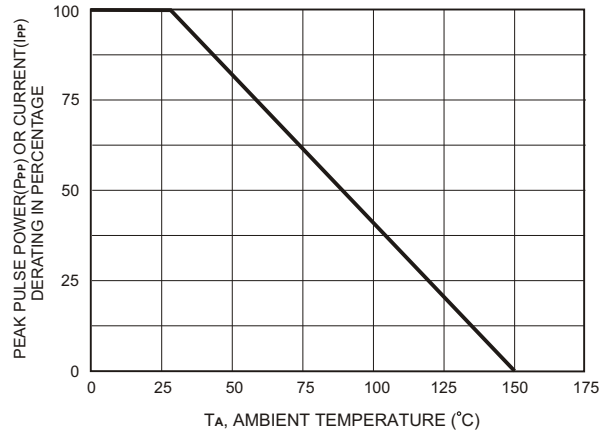


FIG.3-PULSE WAVE FORM



FIG.4-TYPICAL JUNCTION CAPACITANCE



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



600 Watt Surface Mount TVS

| PART NUMBER ADD C FOR BI- DIRECTIONAL | 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(uA) | MARKING CODE | |
|---|---|---|---|-------------------------------|---|-------------------------------------|--|-----------------|----|
| | | | | | | | | UNI | BI |
| SMBJ5.0(C)A | 5.0 | 6.40 | 7.25 | 10 | 9.2 | 65.2 | 800 | KE | KE |
| SMBJ6.0(C)A | 6.0 | 6.67 | 7.67 | 10 | 10.3 | 58.3 | 800 | KG | KG |
| SMBJ6.5(C)A | 6.5 | 7.22 | 8.30 | 10 | 11.2 | 53.6 | 500 | KK | AK |
| SMBJ7.0(C)A | 7.0 | 7.78 | 8.95 | 10 | 12.0 | 50.0 | 200 | KM | KM |
| SMBJ7.5(C)A | 7.5 | 8.33 | 9.58 | 1 | 12.9 | 46.5 | 100 | KP | AP |
| SMBJ8.0(C)A | 8.0 | 8.89 | 10.23 | 1 | 13.6 | 44.1 | 50 | KR | AR |
| SMBJ8.5(C)A | 8.5 | 9.44 | 10.82 | 1 | 14.4 | 41.7 | 10 | KT | AT |
| SMBJ9.0(C)A | 9.0 | 10.0 | 11.50 | 1 | 15.4 | 39.0 | 5 | KV | AV |
| SMBJ10(C)A | 10 | 11.1 | 12.80 | 1 | 17.0 | 35.3 | 5 | KX | AX |
| SMBJ11(C)A | 11 | 12.2 | 14.00 | 1 | 18.2 | 33.0 | 5 | KZ | KZ |
| SMBJ12(C)A | 12 | 13.3 | 15.30 | 1 | 19.9 | 30.2 | 5 | LE | BE |
| SMBJ13(C)A | 13 | 14.4 | 16.50 | 1 | 21.5 | 27.9 | 5 | LG | LG |
| SMBJ14(C)A | 14 | 15.6 | 17.90 | 1 | 23.2 | 25.8 | 5 | LK | BK |
| SMBJ15(C)A | 15 | 16.7 | 19.20 | 1 | 24.4 | 24.0 | 5 | LM | BM |
| SMBJ16(C)A | 16 | 17.8 | 20.50 | 1 | 26.0 | 23.1 | 5 | LP | LM |
| SMBJ17(C)A | 17 | 18.9 | 21.70 | 1 | 27.6 | 21.7 | 5 | LR | LR |
| SMBJ18(C)A | 18 | 20.0 | 23.30 | 1 | 29.2 | 20.5 | 5 | LT | BT |
| SMBJ20(C)A | 20 | 22.2 | 25.50 | 1 | 32.4 | 18.5 | 5 | LV | LV |
| SMBJ22(C)A | 22 | 24.4 | 28.00 | 1 | 35.5 | 16.9 | 5 | LX | BX |
| SMBJ24(C)A | 24 | 26.7 | 30.70 | 1 | 38.9 | 15.4 | 5 | LZ | BZ |
| SMBJ26(C)A | 26 | 28.9 | 33.20 | 1 | 42.1 | 14.2 | 5 | ME | CE |
| SMBJ28(C)A | 28 | 31.1 | 35.80 | 1 | 45.4 | 13.2 | 5 | MG | MG |
| SMBJ30(C)A | 30 | 33.3 | 38.30 | 1 | 48.4 | 12.4 | 5 | MK | CK |
| SMBJ33(C)A | 33 | 36.7 | 42.20 | 1 | 53.3 | 11.3 | 5 | MM | CM |
| SMBJ36(C)A | 36 | 40.0 | 46.00 | 1 | 58.1 | 10.3 | 5 | MP | CP |
| SMBJ40(C)A | 40 | 44.4 | 51.10 | 1 | 64.5 | 9.3 | 5 | MR | CR |
| SMBJ43(C)A | 43 | 47.8 | 54.90 | 1 | 69.4 | 8.6 | 5 | MT | CT |
| SMBJ45(C)A | 45 | 50.0 | 57.50 | 1 | 72.7 | 8.3 | 5 | MV | MV |
| SMBJ48(C)A | 48 | 53.3 | 61.30 | 1 | 77.4 | 7.7 | 5 | MX | MX |
| SMBJ51(C)A | 51 | 56.7 | 65.20 | 1 | 82.4 | 7.3 | 5 | MZ | MZ |
| SMBJ54(C)A | 54 | 60.0 | 69.00 | 1 | 87.1 | 6.9 | 5 | NE | NE |
| SMBJ58(C)A | 58 | 64.4 | 74.10 | 1 | 93.6 | 6.4 | 5 | NG | NG |

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|---|---|---|---|-------------------------------|---|-------------------------------------|---|-----------------|----|
| | | | | | | | | UNI | BI |
| See Note 1 | | | | | | | | | |
| SMBJ60(C)A | 60 | 66.7 | 76.7 | 1 | 96.8 | 6.2 | 5 | NK | NK |
| SMBJ64(C)A | 64 | 71.1 | 81.8 | 1 | 103 | 5.8 | 5 | NM | NM |
| SMBJ70(C)A | 70 | 77.8 | 89.5 | 1 | 113 | 5.3 | 5 | NP | NP |
| SMBJ75(C)A | 75 | 83.3 | 95.8 | 1 | 121 | 4.9 | 5 | NR | NR |
| SMBJ78(C)A | 78 | 86.7 | 99.7 | 1 | 126 | 4.7 | 5 | NT | NT |
| SMBJ85(C)A | 85 | 94.4 | 108.2 | 1 | 137 | 4.4 | 5 | NV | NV |
| SMBJ90(C)A | 90 | 100 | 115.5 | 1 | 146 | 4.1 | 5 | NX | NX |
| SMBJ100(C)A | 100 | 111 | 128.0 | 1 | 162 | 3.7 | 5 | NZ | NZ |
| SMBJ110(C)A | 110 | 122 | 140.5 | 1 | 177 | 3.4 | 5 | PE | PE |
| SMBJ120(C)A | 120 | 133 | 153.0 | 1 | 193 | 3.1 | 5 | PG | PG |
| SMBJ130(C)A | 130 | 144 | 165.5 | 1 | 209 | 2.9 | 5 | PK | PK |
| SMBJ150(C)A | 150 | 167 | 192.5 | 1 | 243 | 2.5 | 5 | PM | PM |
| SMBJ160(C)A | 160 | 178 | 205.0 | 1 | 259 | 2.3 | 5 | PP | PP |
| SMBJ170(C)A | 170 | 189 | 217.5 | 1 | 275 | 2.2 | 5 | PR | PR |
| SMBJ188(C)A | 188 | 209 | 231.0 | 1 | 308 | 2.0 | 5 | PS | PS |
| SMBJ200(C)A | 200 | 224 | 247 | 1 | 324 | 1.9 | 5 | PV | EV |
| SMBJ220(C)A | 220 | 246 | 272 | 1 | 356 | 1.7 | 5 | PX | EX |
| SMBJ250(C)A | 250 | 279 | 309 | 1 | 405 | 1.5 | 5 | PZ | EZ |
| SMBJ300(C)A | 300 | 335 | 371 | 1 | 486 | 1.3 | 5 | PE | FE |
| SMBJ350(C)A | 350 | 391 | 432 | 1 | 567 | 1.1 | 5 | PG | FG |
| SMBJ400(C)A | 400 | 447 | 494 | 1 | 648 | 0.9 | 5 | PK | FK |
| SMBJ440(C)A | 440 | 492 | 543 | 1 | 713 | 0.9 | 5 | PM | FM |