

## TRANSIENT VOLTAGE SUPPRESSOR

### FEATURE

- ✧ Plastic package.
- ✧ Glass passivated chip junction in SMB Package
- ✧ Excellent clamping capability.
- ✧ Low zener impedance.
- ✧ 600W peak pulse power capability on 10/1000µs waveform.
- ✧ Typical IR less than 1µA above 13V.
- ✧ Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- ✧ High temperature soldering guaranteed: 265°C/10 seconds

### MECHANICAL DATE

- ✧ Case: JEDEC SMB Molded Plastic.
- ✧ Terminals: Axial leads, solderable per MIL-STD-750, Method 2026.
- ✧ Polarity: Color band denoted cathode except bidirectional.
- ✧ Mounting Position: Any.

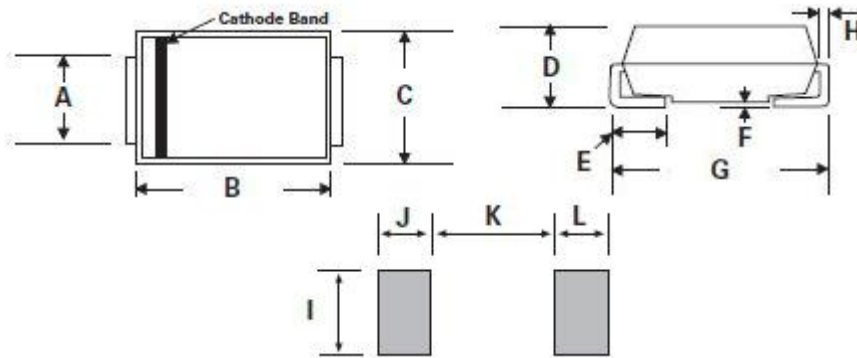
### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| RATING   | SYMBOL                            | VALUE       | UNITS |
|--|-----------------------------------|-------------|-------|
| Peak Pulse Power Dissipation on 10/1000us waveform (Notel, Fig. 1).  | P <sub>PPM</sub>                  | Minimum 600 | Watts |
| Peak Pulse Current of on 10/1000us waveform. (Notel, Fig. 3)   | I <sub>PPM</sub>                  | See Table   | Amps  |
| Steady State Power Dissipation at TL =75°C, Lead lengths. 375", (9.5mm) (Fig. 5).                                    | P <sub>M(AV)</sub>                | 5.0         | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 2, Fig. 6). | I <sub>FSM</sub>                  | 100         | Amps  |
| Operating junction and Storage Temperature Range.  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C    |

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above TA = 25°C per Fig. 2.
2. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.



| Item | Millimeters |       | Inches |       |
|------|-------------|-------|--------|-------|
|      | Min.        | Max.  | Min.   | Max.  |
| A    | 1.95        | 2.2   | 0.077  | 0.086 |
| B    | 4.06        | 4.57  | 0.16   | 0.18  |
| C    | 3.3         | 3.94  | 0.13   | 0.155 |
| D    | 2.13        | 2.44  | 0.084  | 0.096 |
| E    | 0.76        | 1.52  | 0.03   | 0.06  |
| F    | -           | 0.203 | -      | 0.008 |
| G    | 5.21        | 5.59  | 0.205  | 0.22  |
| H    | 0.152       | 0.305 | 0.006  | 0.012 |
| I    | 2.26        | -     | 0.089  | -     |
| J    | 2.16        | -     | 0.085  | -     |
| K    | -           | 2.74  | -      | 0.107 |
| L    | 2.16        | -     | 0.085  | -     |

## ELECTRICAL CHARACTERISTICS

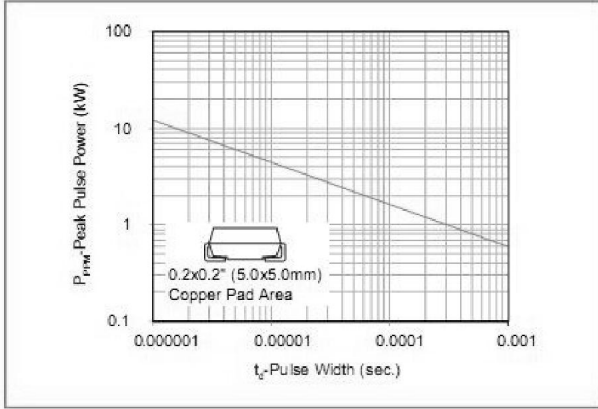
| Part Number |            | Marking |    | Reverse Stand-Off Voltage | Breakdown Voltage NIN.@IT | Breakdown Voltage MAX.@IT | Reverse Leakage @VRWM | Test Current | Peak Pulse Current | Maximum Clamping Voltage |
|-------------|------------|---------|----|---------------------------|---------------------------|---------------------------|-----------------------|--------------|--------------------|--------------------------|
| UNT         | BI         | UNT     | BI | VR(V)                     | VBL(V)                    | VBH(V)                    | IR(uA)                | IT(mA)       | IPP(A)             | VCH(V)                   |
| KSMBJ5.0A   | KSMBJ5.0CA | KE      | AE | 5.0                       | 6.40                      | 7.00                      | 800                   | 10           | 65.3               | 9.2                      |
| KSMBJ6.0A   | KSMBJ6.0CA | KG      | AG | 6.0                       | 6.67                      | 7.37                      | 800                   | 10           | 58.3               | 10.3                     |
| KSMBJ6.5A   | KSMBJ6.5CA | KK      | AK | 6.5                       | 7.22                      | 7.98                      | 500                   | 10           | 53.6               | 11.2                     |
| KSMBJ7.0A   | KSMBJ7.0CA | KM      | AM | 7.0                       | 7.78                      | 8.60                      | 200                   | 10           | 50.0               | 12.0                     |
| KSMBJ7.5A   | KSMBJ7.5CA | KP      | AP | 7.5                       | 8.33                      | 9.21                      | 100                   | 1            | 46.6               | 12.9                     |
| KSMBJ8.0A   | KSMBJ8.0CA | KR      | AR | 8.0                       | 8.89                      | 9.83                      | 50                    | 1            | 44.2               | 13.6                     |
| KSMBJ8.5A   | KSMBJ8.5CA | KT      | AT | 8.5                       | 9.44                      | 10.40                     | 20                    | 1            | 41.7               | 14.4                     |
| KSMBJ9.0A   | KSMBJ9.0CA | KV      | AV | 9.0                       | 10.00                     | 11.10                     | 10                    | 1            | 39.0               | 15.4                     |
| KSMBJ10A    | KSMBJ10CA  | KX      | AX | 10                        | 11.10                     | 12.30                     | 5                     | 1            | 35.3               | 17.0                     |
| KSMBJ11A    | KSMBJ11CA  | KZ      | AZ | 11                        | 12.20                     | 13.50                     | 1                     | 1            | 33.0               | 18.2                     |
| KSMBJ12A    | KSMBJ12CA  | LE      | BE | 12                        | 13.30                     | 14.70                     | 1                     | 1            | 30.2               | 19.9                     |
| KSMBJ13A    | KSMBJ13CA  | LG      | BG | 13                        | 14.40                     | 15.90                     | 1                     | 1            | 28.0               | 21.5                     |

| Part Number |            | Marking |    | Reverse Stand-Off Voltage | Breakdown Voltage NIN.@IT | Breakdown Voltage MAX.@IT | Reverse Leakage @VRWM | Test Current | Peak Pulse Current | Maximum Clamping Voltage @IPP |
|-------------|------------|---------|----|---------------------------|---------------------------|---------------------------|-----------------------|--------------|--------------------|-------------------------------|
| UNT         | BI         | UNT     | BI | VR(V)                     | VBL(V)                    | VBH(V)                    | IR(uA)                | IT(mA)       | IPP(A)             | VCH(V)                        |
| KSMBJ14A    | KSMBJ14CA  | LK      | BK | 14                        | 15.60                     | 17.20                     |                       | 1            | 25.9               | 23.2                          |
| KSMBJ15A    | KSMBJ15CA  | LM      | BM | 15                        | 16.70                     | 18.50                     | 1                     | 1            | 24.6               | 24.4                          |
| KSMBJ16A    | KSMBJ16CA  | LP      | BP | 16                        | 17.80                     | 19.70                     | 1                     | 1            | 23.1               | 26.0                          |
| KSMBJ17A    | KSMBJ17CA  | LR      | BR | 17                        | 18.90                     | 20.90                     | 1                     | 1            | 21.8               | 27.6                          |
| KSMBJ18A    | KSMBJ18CA  | LT      | BT | 18                        | 20.00                     | 22.10                     | 1                     | 1            | 20.6               | 29.2                          |
| KSMBJ20A    | KSMBJ20CA  | LV      | BV | 20                        | 22.20                     | 24.50                     | 1                     | 1            | 18.6               | 32.4                          |
| KSMBJ22A    | KSMBJ22CA  | LX      | BX | 22                        | 24.40                     | 26.90                     | 1                     | 1            | 16.9               | 35.5                          |
| KSMBJ24A    | KSMBJ24CA  | LZ      | BZ | 24                        | 26.70                     | 29.50                     | 1                     | 1            | 15.5               | 38.9                          |
| KSMBJ26A    | KSMBJ26CA  | ME      | CE | 26                        | 28.90                     | 31.90                     | 1                     | 1            | 14.3               | 42.1                          |
| KSMBJ28A    | KSMBJ28CA  | MG      | CG | 28                        | 31.10                     | 34.40                     | 1                     | 1            | 13.3               | 45.4                          |
| KSMBJ30A    | KSMBJ30CA  | MK      | CK | 30                        | 33.30                     | 36.80                     | 1                     | 1            | 12.4               | 48.4                          |
| KSMBJ33A    | KSMBJ33CA  | MM      | CM | 33                        | 36.70                     | 40.60                     | 1                     | 1            | 11.3               | 53.3                          |
| KSMBJ36A    | KSMBJ36CA  | MP      | CP | 36                        | 40.00                     | 44.20                     | 1                     | 1            | 10.4               | 58.1                          |
| KSMBJ40A    | KSMBJ40CA  | MR      | CR | 40                        | 44.40                     | 49.10                     | 1                     | 1            | 9.3                | 64.5                          |
| KSMBJ43A    | KSMBJ43CA  | MT      | CT | 43                        | 47.80                     | 52.80                     | 1                     | 1            | 8.7                | 69.4                          |
| KSMBJ45A    | KSMBJ45CA  | MV      | CV | 45                        | 50.00                     | 55.30                     | 1                     | 1            | 8.3                | 72.7                          |
| KSMBJ48A    | KSMBJ48CA  | MX      | CX | 48                        | 53.30                     | 58.90                     | 1                     | 1            | 7.8                | 77.4                          |
| KSMBJ51A    | KSMBJ51CA  | MZ      | CZ | 51                        | 56.70                     | 62.70                     | 1                     | 1            | 7.3                | 82.4                          |
| KSMBJ54A    | KSMBJ54CA  | NE      | DE | 54                        | 60.00                     | 66.30                     | 1                     | 1            | 6.9                | 87.1                          |
| KSMBJ58A    | KSMBJ58CA  | NG      | DG | 58                        | 64.40                     | 71.20                     | 1                     | 1            | 6.5                | 93.6                          |
| KSMBJ60A    | KSMBJ60CA  | NK      | DK | 60                        | 66.70                     | 73.70                     | 1                     | 1            | 6.2                | 96.8                          |
| KSMBJ64A    | KSMBJ64CA  | NM      | DM | 64                        | 71.10                     | 78.60                     | 1                     | 1            | 5.9                | 103                           |
| KSMBJ70A    | KSMBJ70CA  | NP      | DP | 70                        | 77.80                     | 86.00                     | 1                     | 1            | 5.3                | 113                           |
| KSMBJ75A    | KSMBJ75CA  | NR      | DR | 75                        | 83.30                     | 92.10                     | 1                     | 1            | 5.0                | 121                           |
| KSMBJ78A    | KSMBJ78CA  | NT      | DT | 78                        | 86.70                     | 95.80                     | 1                     | 1            | 4.8                | 126                           |
| KSMBJ85A    | KSMBJ85CA  | NV      | DV | 85                        | 94.4                      | 104.0                     | 1                     | 1            | 4.4                | 137                           |
| KSMBJ90A    | KSMBJ90CA  | NX      | DX | 90                        | 100.0                     | 111.0                     | 1                     | 1            | 4.1                | 146                           |
| KSMBJ100A   | KSMBJ100CA | NZ      | DZ | 100                       | 111.0                     | 123.0                     | 1                     | 1            | 3.7                | 162                           |
| KSMBJ110A   | KSMBJ110CA | PE      | EE | 110                       | 122.0                     | 135.0                     | 1                     | 1            | 3.4                | 177                           |
| KSMBJ120A   | KSMBJ120CA | PG      | EG | 120                       | 133.0                     | 147.0                     | 1                     | 1            | 3.1                | 193                           |
| KSMBJ130A   | KSMBJ130CA | PK      | EK | 130                       | 144.0                     | 159.0                     | 1                     | 1            | 2.9                | 209                           |
| KSMBJ150A   | KSMBJ150CA | PM      | EM | 150                       | 167.0                     | 185.0                     | 1                     | 1            | 2.5                | 243                           |
| KSMBJ160A   | KSMBJ160CA | PP      | EP | 160                       | 178.0                     | 197.0                     | 1                     | 1            | 2.3                | 259                           |
| KSMBJ170A   | KSMBJ170CA | PR      | ER | 170                       | 189.0                     | 209.0                     | 1                     | 1            | 2.2                | 275                           |
| KSMBJ180A   | KSMBJ180CA | PT      | ET | 180                       | 201.0                     | 222.0                     | 1                     | 1            | 2.1                | 292                           |
| KSMBJ190A   | KSMBJ190CA | PA      | EC | 190                       | 209.0                     | 243.0                     | 1                     | 1            | 2.0                | 308                           |
| KSMBJ200A   | KSMBJ200CA | PV      | EV | 200                       | 224.0                     | 247.0                     | 1                     | 1            | 1.9                | 324                           |
| KSMBJ220A   | KSMBJ220CA | PX      | EX | 220                       | 246.0                     | 272.0                     | 1                     | 1            | 1.7                | 356                           |
| KSMBJ250A   | KSMBJ250CA | PZ      | EZ | 250                       | 279.0                     | 309.0                     | 1                     | 1            | 1.5                | 405                           |
| KSMBJ300A   | KSMBJ300CA | QE      | FE | 300                       | 335.0                     | 371.0                     | 1                     | 1            | 1.3                | 486                           |
| KSMBJ350A   | KSMBJ350CA | QG      | FG | 350                       | 391.0                     | 432.0                     | 1                     | 1            | 1.1                | 567                           |
| KSMBJ400A   | KSMBJ400CA | QK      | FK | 400                       | 447.0                     | 494.0                     | 1                     | 1            | 0.9                | 648                           |
| KSMBJ440A   | KSMBJ440CA | QM      | FM | 440                       | 492.0                     | 543.0                     | 1                     | 1            | 0.9                | 713                           |

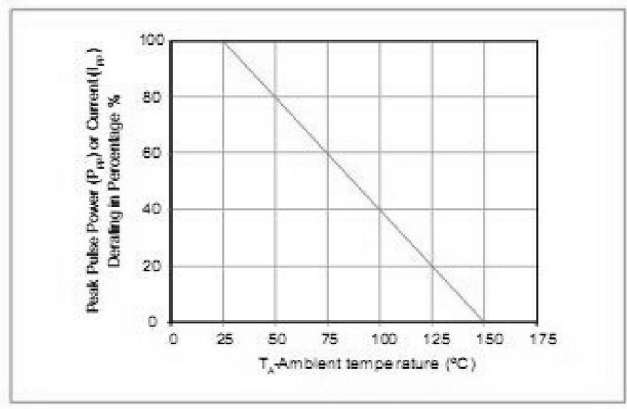
Notes: For bidirectional type having VRWM of 10 volts and less, the IR limit is double

**RATINGS AND CHARACTERISTIC CURVES** (TA=25°C unless otherwise noted)

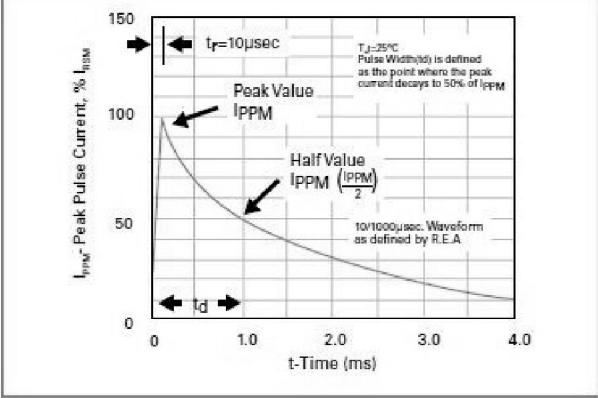
**Figure 1 - Peak Pulse Power Rating Curve**



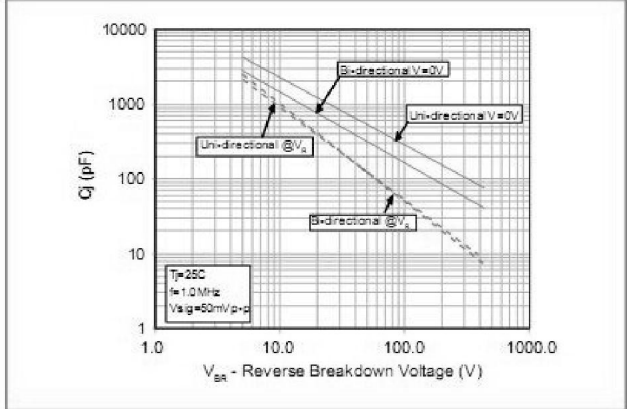
**Figure 2 - Pulse Derating Curve**



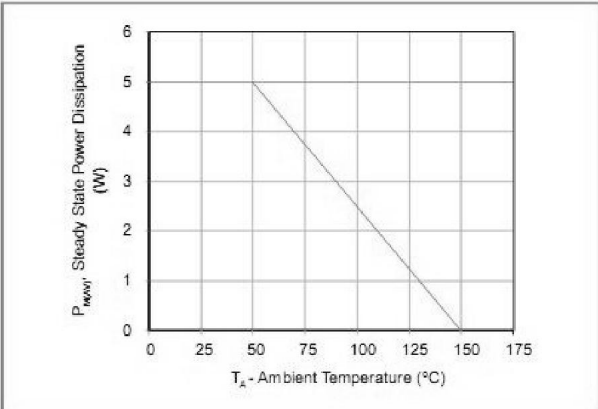
**Figure 3 - Pulse Waveform**



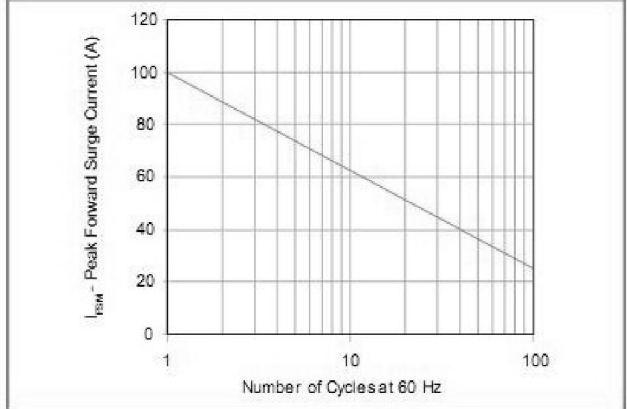
**Figure 4 - Typical Junction Capacitance Uni-Directional**



**Figure 5 - Steady State Power Dissipation Derating Curve**



**Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only**



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