

**SURFACE MOUNT  
UNIDIRECTIONAL AND BIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS**

STAND-OFF VOLTAGE - **5.0** to **170** Volts  
POWER DISSIPATION - **600** WATTS

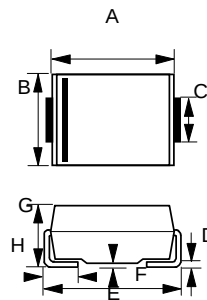
**FEATURES**

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction,less than 5.0ns for Bi-direction,form 0 Volts to BV min
- RoHS compliant
- Qualified to AEC-Q101 Rev\_C

**MECHANICAL DATA**

- Case : Molded plastic
- Polarity : by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- Weight : 0.003 ounces, 0.093 gram

**SMB**



| SMB                          |      |      |
|------------------------------|------|------|
| DIM.                         | MIN. | MAX. |
| A                            | 4.06 | 4.57 |
| B                            | 3.30 | 3.94 |
| C                            | 1.96 | 2.21 |
| D                            | 0.15 | 0.31 |
| E                            | 5.21 | 5.59 |
| F                            | 0.05 | 0.20 |
| G                            | 2.01 | 2.50 |
| H                            | 0.76 | 1.52 |
| All Dimensions in millimeter |      |      |

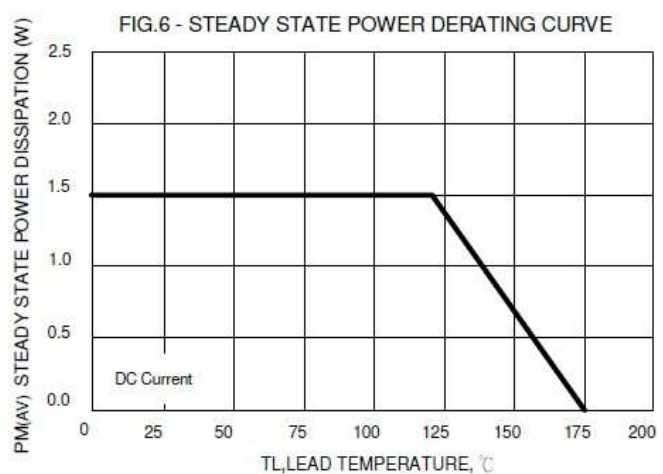
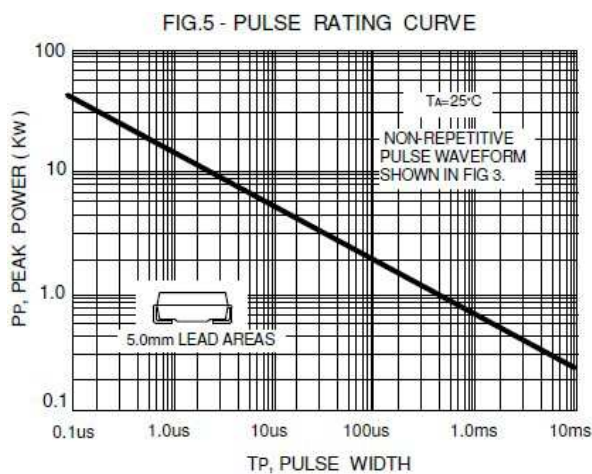
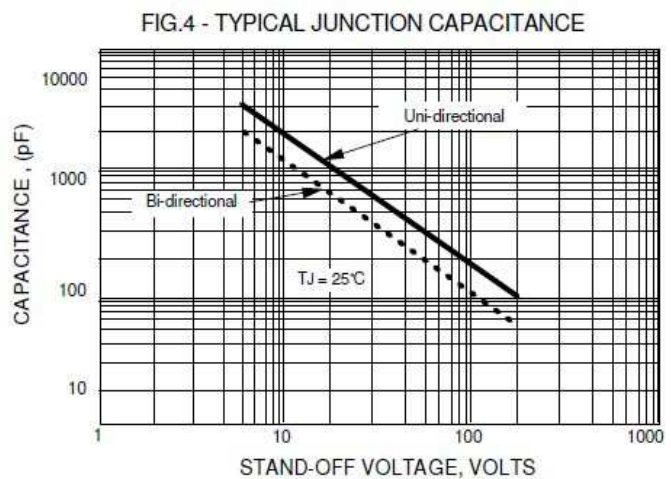
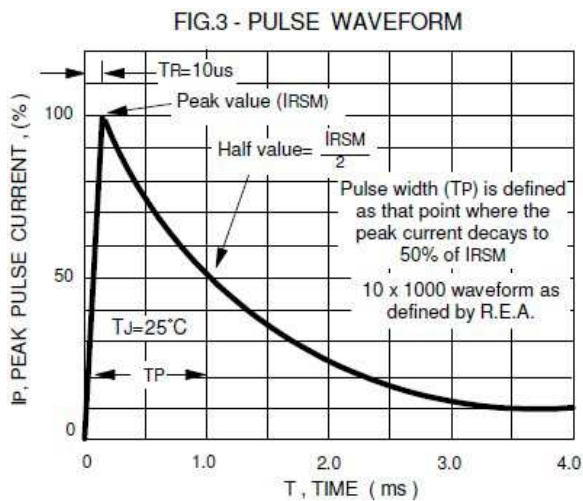
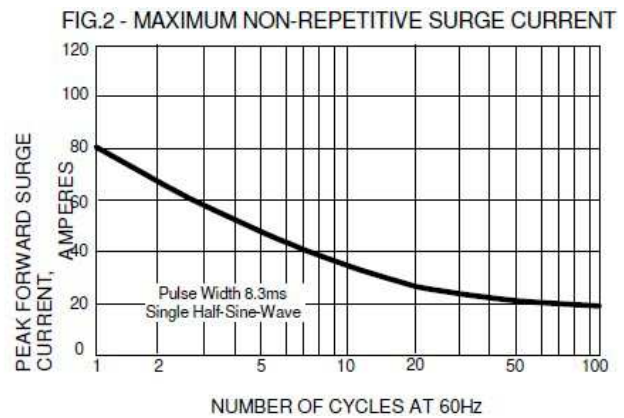
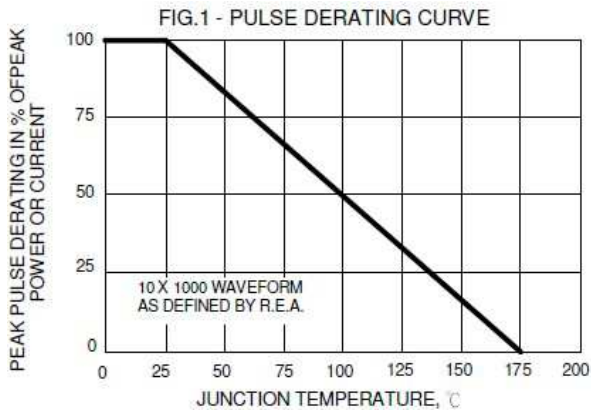
**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

| CHARACTERISTICS                                                                                                   | SYMBOLS            | VALUE       | UNIT  |
|-------------------------------------------------------------------------------------------------------------------|--------------------|-------------|-------|
| PEAK POWER DISSIPATION AT T <sub>J</sub> = 25°C , TP = 1ms (Note 1)                                               | P <sub>PK</sub>    | 600         | WATTS |
| Peak Forward Surge Current 8.3ms single half sine-wave@T <sub>J</sub> =25°C (Note 2)                              | I <sub>FSM</sub>   | 80          | AMPS. |
| Steady State Power Dissipation at T <sub>L</sub> =120°C lead lengths 0.375" (9.5mm) , see fig.4 Without Heatshink | P <sub>M(AV)</sub> | 1.5         | WATTS |
| Maximum Instantaneous forward voltage at 16A for unidirectional devices only (Note 3)                             | V <sub>F</sub>     | SEE NOTE 3  | Volts |
| Operating Temperature Range                                                                                       | T <sub>J</sub>     | -55 to +175 | °C    |
| Storage Temperature Range                                                                                         | T <sub>STG</sub>   | -55 to +175 | °C    |

NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above T<sub>J</sub>= 25 °C per fig.1.  
2. Only for unidirectional units.  
3. V<sub>F</sub> max=2.5V at I<sub>F</sub>=16 A 300us square wave pulse.

REV. 0, Sep-2016, KSIB08



| Device<br>Uni-<br>directional | Device<br>Bi-<br>directional | Device<br>Marking<br>code |      | Working<br>Peak Reverse<br>Voltage | Breakdown voltage<br>VBR Volts |      |                      | Maximum<br>Reverse Voltage<br>at I <sub>RSM</sub><br>(Clamping<br>Voltage) | Maximum<br>Reverse Surge<br>Current | Maximum<br>Reverse<br>Leakage at<br>V <sub>RWM</sub> |
|-------------------------------|------------------------------|---------------------------|------|------------------------------------|--------------------------------|------|----------------------|----------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------|
|                               |                              | (UNI)                     | (BI) |                                    | Min.                           | Max. | @I <sub>T</sub> (mA) |                                                                            |                                     |                                                      |
| SMB6J5.0AT                    | SMB6J5.0CAT                  | 6KET                      | 6AET | 5.0                                | 6.40                           | 7.07 | 10                   | 9.2                                                                        | 65.2                                | 800                                                  |
| SMB6J6.0AT                    | SMB6J6.0CAT                  | 6KGT                      | 6AGT | 6.0                                | 6.67                           | 7.37 | 10                   | 10.3                                                                       | 58.3                                | 800                                                  |
| SMB6J6.5AT                    | SMB6J6.5CAT                  | 6KKT                      | 6AKT | 6.5                                | 7.22                           | 7.98 | 10                   | 11.2                                                                       | 53.6                                | 500                                                  |
| SMB6J7.0AT                    | SMB6J7.0CAT                  | 6KMT                      | 6AMT | 7.0                                | 7.78                           | 8.60 | 10                   | 12.0                                                                       | 50.0                                | 200                                                  |
| SMB6J7.5AT                    | SMB6J7.5CAT                  | 6KPT                      | 6APT | 7.5                                | 8.33                           | 9.21 | 1.0                  | 12.9                                                                       | 46.5                                | 100                                                  |
| SMB6J8.0AT                    | SMB6J8.0CAT                  | 6KRT                      | 6ART | 8.0                                | 8.89                           | 9.83 | 1.0                  | 13.6                                                                       | 44.1                                | 50.0                                                 |
| SMB6J8.5AT                    | SMB6J8.5CAT                  | 6KTT                      | 6ATT | 8.5                                | 9.44                           | 10.4 | 1.0                  | 14.4                                                                       | 41.7                                | 20.0                                                 |
| SMB6J9.0AT                    | SMB6J9.0CAT                  | 6KVT                      | 6AVT | 9.0                                | 10.0                           | 11.1 | 1.0                  | 15.4                                                                       | 39.0                                | 10.0                                                 |
| SMB6J10AT                     | SMB6J10CAT                   | 6KXT                      | 6AXT | 10.0                               | 11.1                           | 12.3 | 1.0                  | 17.0                                                                       | 35.3                                | 5.0                                                  |
| SMB6J11AT                     | SMB6J11CAT                   | 6KZT                      | 6AZT | 11.0                               | 12.2                           | 13.5 | 1.0                  | 18.2                                                                       | 33.0                                | 5.0                                                  |
| SMB6J12AT                     | SMB6J12CAT                   | 6LET                      | 6BET | 12.0                               | 13.3                           | 14.7 | 1.0                  | 19.9                                                                       | 30.2                                | 5.0                                                  |
| SMB6J13AT                     | SMB6J13CAT                   | 6LGT                      | 6BGT | 13.0                               | 14.4                           | 15.9 | 1.0                  | 21.5                                                                       | 27.9                                | 5.0                                                  |
| SMB6J14AT                     | SMB6J14CAT                   | 6LKT                      | 6BKT | 14.0                               | 15.6                           | 17.2 | 1.0                  | 23.2                                                                       | 25.8                                | 5.0                                                  |
| SMB6J15AT                     | SMB6J15CAT                   | 6LMT                      | 6BMT | 15.0                               | 16.7                           | 18.5 | 1.0                  | 24.4                                                                       | 24.0                                | 5.0                                                  |
| SMB6J16AT                     | SMB6J16CAT                   | 6LPT                      | 6BPT | 16.0                               | 17.8                           | 19.7 | 1.0                  | 26.0                                                                       | 23.1                                | 5.0                                                  |
| SMB6J17AT                     | SMB6J17CAT                   | 6LRT                      | 6BRT | 17.0                               | 18.9                           | 20.9 | 1.0                  | 27.6                                                                       | 21.7                                | 5.0                                                  |
| SMB6J18AT                     | SMB6J18CAT                   | 6LTT                      | 6BTT | 18.0                               | 20.0                           | 22.1 | 1.0                  | 29.2                                                                       | 20.5                                | 5.0                                                  |
| SMB6J20AT                     | SMB6J20CAT                   | 6LVT                      | 6BVT | 20.0                               | 22.2                           | 24.5 | 1.0                  | 32.4                                                                       | 18.5                                | 5.0                                                  |
| SMB6J22AT                     | SMB6J22CAT                   | 6LXT                      | 6BXT | 22.0                               | 24.4                           | 27.0 | 1.0                  | 35.5                                                                       | 16.9                                | 5.0                                                  |
| SMB6J24AT                     | SMB6J24CAT                   | 6LZT                      | 6BZT | 24.0                               | 26.7                           | 29.5 | 1.0                  | 38.9                                                                       | 15.4                                | 5.0                                                  |
| SMB6J26AT                     | SMB6J26CAT                   | 6MET                      | 6CET | 26.0                               | 28.9                           | 31.9 | 1.0                  | 42.1                                                                       | 14.2                                | 5.0                                                  |
| SMB6J28AT                     | SMB6J28CAT                   | 6MGT                      | 6CGT | 28.0                               | 31.1                           | 34.4 | 1.0                  | 45.4                                                                       | 13.2                                | 5.0                                                  |
| SMB6J30AT                     | SMB6J30CAT                   | 6MKT                      | 6CKT | 30.0                               | 33.3                           | 36.8 | 1.0                  | 48.4                                                                       | 12.4                                | 5.0                                                  |
| SMB6J33AT                     | SMB6J33CAT                   | 6MMT                      | 6CMT | 33.0                               | 36.7                           | 40.6 | 1.0                  | 53.3                                                                       | 11.3                                | 5.0                                                  |
| SMB6J36AT                     | SMB6J36CAT                   | 6MPT                      | 6CPT | 36.0                               | 40.0                           | 44.2 | 1.0                  | 58.1                                                                       | 10.3                                | 5.0                                                  |
| SMB6J40AT                     | SMB6J40CAT                   | 6MRT                      | 6CRT | 40.0                               | 44.4                           | 49.1 | 1.0                  | 64.5                                                                       | 9.3                                 | 5.0                                                  |
| SMB6J43AT                     | SMB6J43CAT                   | 6MTT                      | 6CTT | 43.0                               | 47.8                           | 52.8 | 1.0                  | 69.4                                                                       | 8.6                                 | 5.0                                                  |
| SMB6J45AT                     | SMB6J45CAT                   | 6MVT                      | 6CVT | 45.0                               | 50.0                           | 55.3 | 1.0                  | 72.7                                                                       | 8.3                                 | 5.0                                                  |
| SMB6J48AT                     | SMB6J48CAT                   | 6MXT                      | 6CXT | 48.0                               | 53.3                           | 58.9 | 1.0                  | 77.4                                                                       | 7.7                                 | 5.0                                                  |
| SMB6J51AT                     | SMB6J51CAT                   | 6MZT                      | 6CZT | 51.0                               | 56.7                           | 62.7 | 1.0                  | 82.4                                                                       | 7.3                                 | 5.0                                                  |
| SMB6J54AT                     | SMB6J54CAT                   | 6NET                      | 6DET | 54.0                               | 60.0                           | 66.3 | 1.0                  | 87.1                                                                       | 6.9                                 | 5.0                                                  |
| SMB6J58AT                     | SMB6J58CAT                   | 6NGT                      | 6DGT | 58.0                               | 64.4                           | 71.2 | 1.0                  | 93.6                                                                       | 6.4                                 | 5.0                                                  |
| SMB6J60AT                     | SMB6J60CAT                   | 6NKT                      | 6DKT | 60.0                               | 66.7                           | 73.7 | 1.0                  | 96.8                                                                       | 6.2                                 | 5.0                                                  |
| SMB6J64AT                     | SMB6J64CAT                   | 6NMT                      | 6DMT | 64.0                               | 71.1                           | 78.6 | 1.0                  | 103                                                                        | 5.8                                 | 5.0                                                  |
| SMB6J70AT                     | SMB6J70CAT                   | 6NPT                      | 6DPT | 70.0                               | 77.8                           | 86.0 | 1.0                  | 113                                                                        | 5.3                                 | 5.0                                                  |
| SMB6J75AT                     | SMB6J75CAT                   | 6NRT                      | 6DRT | 75.0                               | 83.3                           | 92.1 | 1.0                  | 121                                                                        | 4.9                                 | 5.0                                                  |
| SMB6J78AT                     | SMB6J78CAT                   | 6NTT                      | 6DTT | 78.0                               | 86.7                           | 95.8 | 1.0                  | 126                                                                        | 4.7                                 | 5.0                                                  |
| SMB6J85AT                     | SMB6J85CAT                   | 6NVT                      | 6DVT | 85.0                               | 94.4                           | 104  | 1.0                  | 137                                                                        | 4.4                                 | 5.0                                                  |
| SMB6J90AT                     | SMB6J90CAT                   | 6NXT                      | 6DXT | 90.0                               | 100                            | 111  | 1.0                  | 146                                                                        | 4.1                                 | 5.0                                                  |
| SMB6J100AT                    | SMB6J100CAT                  | 6NZT                      | 6DZT | 100.0                              | 111                            | 123  | 1.0                  | 162                                                                        | 3.7                                 | 5.0                                                  |

| Device<br>Uni-<br>directional | Device<br>Bi-<br>directional | Device<br>Marking<br>code |      | Working<br>PeakReverse<br>Voltage | Breakdown voltage<br>VBR Volts |      |          | Maximum<br>Reverse Voltage<br>at I <sub>RSM</sub><br>(Clamping<br>Voltage) | Maximum<br>Reverse Surge<br>Current | Maximum<br>Reverse<br>Leakage at<br>V <sub>RWM</sub> |
|-------------------------------|------------------------------|---------------------------|------|-----------------------------------|--------------------------------|------|----------|----------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------|
|                               |                              | (UNI)                     | (BI) |                                   | Min.                           | Max. | @IT( mA) |                                                                            |                                     |                                                      |
| SMB6J110AT                    | SMB6J110CAT                  | 6PET                      | 6EET | 110.0                             | 122                            | 135  | 1.0      | 177                                                                        | 3.4                                 | 5.0                                                  |
| SMB6J120AT                    | SMB6J120CAT                  | 6PGT                      | 6EGT | 120.0                             | 133                            | 147  | 1.0      | 193                                                                        | 3.1                                 | 5.0                                                  |
| SMB6J130AT                    | SMB6J130CAT                  | 6PKT                      | 6EKT | 130.0                             | 144                            | 159  | 1.0      | 209                                                                        | 2.9                                 | 5.0                                                  |
| SMB6J150AT                    | SMB6J150CAT                  | 6PMT                      | 6EMT | 150.0                             | 167                            | 185  | 1.0      | 243                                                                        | 2.5                                 | 5.0                                                  |
| SMB6J160AT                    | SMB6J160CAT                  | 6PPT                      | 6EPT | 160.0                             | 178                            | 197  | 1.0      | 259                                                                        | 2.3                                 | 5.0                                                  |
| SMB6J170AT                    | SMB6J170CAT                  | 6PRT                      | 6ERT | 170.0                             | 189                            | 209  | 1.0      | 275                                                                        | 2.2                                 | 5.0                                                  |

**NOTE :**

- 1) Suffix 'AT ' denotes 5% tolerance device, no suffix denotes 10 % tolerance device.
- 2) Add suffix 'CT ' or ' CAT ' after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .

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