



# THE DATASHEET OF SMBJ48CA-TP



|   |                |
|---|----------------|
|  | <b>E480232</b> |
|---|----------------|

**Features**

- For Surface Mount Applications in Order to Optimize Board Space
- Low Inductance
- Fast Response Time: Typical Less than 1ps From 0V to  $V_{BR}$  min
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMBJ5.0CA for 5% Tolerance

**Mechanical Data**

- Polarity: Color Band Denotes Positive end( cathode) Except Bi-directional Types
- Maximum Soldering Temperature: 260°C for 10 Seconds
- Terminals: Solderable Per MIL-STD-750, Method 2026

**Maximum Ratings**

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance :20°C/W Junction to Lead
- Thermal Resistance :25°C/W Junction to Case
- Thermal Resistance :100°C/W Junction to Ambient

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

|  |             |               |  |
|--|-------------|---------------|--|
| Peak Pulse Power Surge Current on 10/1000µs Waveform | $I_{PP}$    | See the Table | Note 3   |
| Peak Pulse Power Dissipation                         | $P_{PP}$    | 600W          | Note 3,4,5                                       |
| Steady State Power Dissipation                       | $P_{M(AV)}$ | 5.0W          | Note 6   |
| Peak Forward Surge Current                           | $I_{FSM}$   | 100A          | 8.3 ms Single Half Sine-Wave Unidirectional Only |

**NOTES:**

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.4
4. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal.
5. Peak pulse current waveform is 10/1000us, with maximum duty Cycle of 0.01%.
6. Power dissipation, on infinite heat sink at  $T_L=75^\circ\text{C}$

**Pin Configuration:**



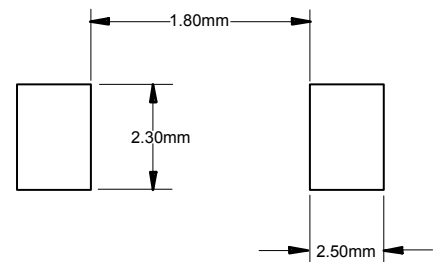
**600 Watt TVS  
5.0 to 440 Volts**

**SMB (DO-214AA)  
(LEAD FRAME)**



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.079  | 0.103 | 2.00 | 2.62 |      |
| B   | 0.075  | 0.087 | 1.91 | 2.21 |      |
| C   | 0.002  | 0.008 | 0.05 | 0.20 |      |
| D   | 0.006  | 0.012 | 0.15 | 0.31 |      |
| E   | 0.030  | 0.060 | 0.76 | 1.52 |      |
| F   | 0.065  | 0.091 | 1.65 | 2.32 |      |
| G   | 0.200  | 0.220 | 5.08 | 5.59 |      |
| H   | 0.160  | 0.191 | 4.06 | 4.85 |      |
| J   | 0.130  | 0.155 | 3.30 | 3.94 |      |

**Suggested Solder Pad Layout**



Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC PART NUMBER | REVERSE STAND-OFF VOLTAGE $V_{WM}$ | BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ (VOLTS) |      |            | MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$ | PEAK PULSE CURRENT $I_{PP}$ | MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$ | MARKING CODE |
|-----------------|------------------------------------|--|------|------------|-------------------------------------|-----------------------------|--|--------------|
|                 | VOLTS                              | MIN  | MAX  | $I_T$ (mA) | VOLTS                               | (AMPS)                      | ( $\mu$ A)                               |              |
| SMBJ5.0         | 5.0                                | 6.40                                       | 7.30 | 10         | 9.6                                 | 62.5                        | 800                                      | KD           |
| SMBJ5.0A        | 5.0                                | 6.40                                       | 7.00 | 10         | 9.2                                 | 65.2                        | 800                                      | KE           |
| SMBJ6.0         | 6.0                                | 6.67                                       | 8.15 | 10         | 11.4                                | 52.6                        | 800                                      | KF           |
| SMBJ6.0A        | 6.0                                | 6.67                                       | 7.37 | 10         | 10.3                                | 58.3                        | 800                                      | KG           |
| SMBJ6.5         | 6.5                                | 7.22                                       | 8.82 | 10         | 12.3                                | 48.7                        | 500                                      | KH           |
| SMBJ6.5A        | 6.5                                | 7.22                                       | 7.98 | 10         | 11.2                                | 53.6                        | 500                                      | KK           |
| SMBJ7.0         | 7.0                                | 7.78                                       | 9.51 | 10         | 13.3                                | 45.1                        | 200                                      | KL           |
| SMBJ7.0A        | 7.0                                | 7.78                                       | 8.60 | 10         | 12.0                                | 50.0                        | 200                                      | KM           |
| SMBJ7.5         | 7.5                                | 8.33                                       | 10.2 | 1          | 14.3                                | 42.0                        | 100                                      | KN           |
| SMBJ7.5A        | 7.5                                | 8.33                                       | 9.21 | 1          | 12.9                                | 46.5                        | 100                                      | KP           |
| SMBJ8.0         | 8.0                                | 8.89                                       | 10.9 | 1          | 15.0                                | 40.0                        | 50                                       | KQ           |
| SMBJ8.0A        | 8.0                                | 8.89                                       | 9.83 | 1          | 13.6                                | 44.1                        | 50                                       | KR           |
| SMBJ8.5         | 8.5                                | 9.44                                       | 11.5 | 1          | 15.9                                | 37.7                        | 10                                       | KS           |
| SMBJ8.5A        | 8.5                                | 9.44                                       | 10.4 | 1          | 14.4                                | 41.7                        | 10                                       | KT           |
| SMBJ9.0         | 9.0                                | 10.0                                       | 12.2 | 1          | 16.9                                | 35.5                        | 5  | KU           |
| SMBJ9.0A        | 9.0                                | 10.0                                       | 11.1 | 1          | 15.4                                | 39.0                        | 5  | KV           |
| SMBJ10          | 10                                 | 11.1                                       | 13.6 | 1          | 18.8                                | 31.9                        | 1  | KW           |
| SMBJ10A         | 10                                 | 11.1                                       | 12.3 | 1          | 17.0                                | 35.3                        | 1  | KX           |
| SMBJ11          | 11                                 | 12.2                                       | 14.9 | 1          | 20.1                                | 29.9                        | 1  | KY           |
| SMBJ11A         | 11                                 | 12.2                                       | 13.5 | 1          | 18.2                                | 33.0                        | 1  | KZ           |
| SMBJ12          | 12                                 | 13.3                                       | 16.3 | 1          | 22.0                                | 27.3                        | 1  | LD           |
| SMBJ12A         | 12                                 | 13.3                                       | 14.7 | 1          | 19.9                                | 30.2                        | 1  | LE           |
| SMBJ13          | 13                                 | 14.4                                       | 17.6 | 1          | 23.8                                | 25.2                        | 1  | LF           |
| SMBJ13A         | 13                                 | 14.4                                       | 15.9 | 1          | 21.5                                | 27.9                        | 1  | LG           |
| SMBJ14          | 14                                 | 15.6                                       | 19.1 | 1          | 25.8                                | 23.3                        | 1  | LH           |
| SMBJ14A         | 14                                 | 15.6                                       | 17.2 | 1          | 23.2                                | 25.8                        | 1  | LK           |
| SMBJ15          | 15                                 | 16.7                                       | 20.4 | 1          | 26.9                                | 22.3                        | 1  | LL           |
| SMBJ15A         | 15                                 | 16.7                                       | 18.5 | 1          | 24.4                                | 24.0                        | 1  | LM           |
| SMBJ16          | 16                                 | 17.8                                       | 21.8 | 1          | 28.8                                | 20.8                        | 1  | LN           |
| SMBJ16A         | 16                                 | 17.8                                       | 19.7 | 1          | 26.0                                | 23.1                        | 1  | LP           |
| SMBJ17          | 17                                 | 18.9                                       | 23.1 | 1          | 30.5                                | 19.7                        | 1  | LQ           |
| SMBJ17A         | 17                                 | 18.9                                       | 20.9 | 1          | 27.6                                | 21.7                        | 1  | LR           |
| SMBJ18          | 18                                 | 20.0                                       | 24.4 | 1          | 32.2                                | 18.6                        | 1  | LS           |
| SMBJ18A         | 18                                 | 20.0                                       | 22.1 | 1          | 29.2                                | 20.5                        | 1  | LT           |
| SMBJ20          | 20                                 | 22.2                                       | 27.1 | 1          | 35.8                                | 16.7                        | 1  | LU           |
| SMBJ20A         | 20                                 | 22.2                                       | 24.5 | 1          | 32.4                                | 18.5                        | 1  | LV           |
| SMBJ22          | 22                                 | 24.4                                       | 29.8 | 1          | 39.4                                | 15.2                        | 1  | LW           |
| SMBJ22A         | 22                                 | 24.4                                       | 26.9 | 1          | 35.5                                | 16.9                        | 1  | LX           |
| SMBJ24          | 24                                 | 26.7                                       | 32.6 | 1          | 43.0                                | 14.0                        | 1  | LY           |
| SMBJ24A         | 24                                 | 26.7                                       | 29.5 | 1          | 38.9                                | 15.4                        | 1  | LZ           |
| SMBJ26          | 26                                 | 28.9                                       | 35.3 | 1          | 46.6                                | 12.4                        | 1  | MD           |
| SMBJ26A         | 26                                 | 28.9                                       | 31.9 | 1          | 42.1                                | 14.2                        | 1  | ME           |
| SMBJ28          | 28                                 | 31.1                                       | 38.0 | 1          | 50.0                                | 12.0                        | 1  | MF           |
| SMBJ28A         | 28                                 | 31.1                                       | 34.4 | 1          | 45.4                                | 13.2                        | 1  | MG           |
| SMBJ30          | 30                                 | 33.3                                       | 40.7 | 1          | 53.5                                | 11.2                        | 1  | MH           |
| SMBJ30A         | 30                                 | 33.3                                       | 36.8 | 1          | 48.4                                | 12.4                        | 1  | MK           |

For parts without A, the VBR is +10%.

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC<br>PART NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$ | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @ $I_{PP}$ | PEAK PULSE<br>CURRENT<br>$I_{PP}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$ | MARKING<br>CODE |
|--------------------|---|--|------|------------|---|-----------------------------------|--|-----------------|
|                    | VOLTS                                       | MIN  | MAX  | $I_T$ (mA) | VOLTS                                     | (AMPS)                            | ( $\mu$ A)   |                 |
| SMBJ33             | 33  | 36.7   | 44.9 | 1          | 59.0                                      | 10.2                              | 1  | ML              |
| SMBJ33A            | 33  | 36.7   | 40.6 | 1          | 53.3                                      | 11.3                              | 1  | MM              |
| SMBJ36             | 36  | 40.0   | 48.9 | 1          | 64.3                                      | 9.3                               | 1  | MN              |
| SMBJ36A            | 36  | 40.0   | 44.2 | 1          | 58.1                                      | 10.3                              | 1  | MP              |
| SMBJ40             | 40  | 44.4   | 54.3 | 1          | 71.4                                      | 8.4                               | 1  | MQ              |
| SMBJ40A            | 40  | 44.4   | 49.1 | 1          | 64.5                                      | 9.3                               | 1  | MR              |
| SMBJ43             | 43  | 47.8   | 58.4 | 1          | 76.7                                      | 7.8                               | 1  | MS              |
| SMBJ43A            | 43  | 47.8   | 52.8 | 1          | 69.4                                      | 8.6                               | 1  | MT              |
| SMBJ45             | 45  | 50.0   | 61.1 | 1          | 80.3                                      | 7.5                               | 1  | MU              |
| SMBJ45A            | 45  | 50.0   | 55.3 | 1          | 72.7                                      | 8.3                               | 1  | MV              |
| SMBJ48             | 48  | 53.3   | 65.1 | 1          | 85.5                                      | 7.0                               | 1  | MW              |
| SMBJ48A            | 48  | 53.3   | 58.9 | 1          | 77.4                                      | 7.7                               | 1  | MX              |
| SMBJ51             | 51  | 56.7   | 69.3 | 1          | 91.1                                      | 6.6                               | 1  | MY              |
| SMBJ51A            | 51  | 56.7   | 62.7 | 1          | 82.4                                      | 7.3                               | 1  | MZ              |
| SMBJ54             | 54  | 60.0   | 73.3 | 1          | 96.3                                      | 6.2                               | 1  | ND              |
| SMBJ54A            | 54  | 60.0   | 66.3 | 1          | 87.1                                      | 6.9                               | 1  | NE              |
| SMBJ58             | 58  | 64.4   | 78.7 | 1          | 103                                       | 5.8                               | 1  | NF              |
| SMBJ58A            | 58  | 64.4   | 71.2 | 1          | 93.6                                      | 6.4                               | 1  | NG              |
| SMBJ60             | 60  | 66.7   | 81.5 | 1          | 107                                       | 5.6                               | 1  | NH              |
| SMBJ60A            | 60  | 66.7   | 73.7 | 1          | 96.8                                      | 6.2                               | 1  | NK              |
| SMBJ64             | 64  | 71.1   | 86.9 | 1          | 114                                       | 5.3                               | 1  | NL              |
| SMBJ64A            | 64  | 71.1   | 78.6 | 1          | 103                                       | 5.8                               | 1  | NM              |
| SMBJ70             | 70  | 77.8   | 95.1 | 1          | 125                                       | 4.8                               | 1  | NN              |
| SMBJ70A            | 70  | 77.8   | 86.0 | 1          | 113                                       | 5.3                               | 1  | NP              |
| SMBJ75             | 75  | 83.3   | 102  | 1          | 134                                       | 4.5                               | 1  | NQ              |
| SMBJ75A            | 75  | 83.3   | 92.1 | 1          | 121                                       | 4.9                               | 1  | NR              |
| SMBJ78             | 78  | 86.7   | 106  | 1          | 139                                       | 4.3                               | 1  | NS              |
| SMBJ78A            | 78  | 86.7   | 95.8 | 1          | 126                                       | 4.7                               | 1  | NT              |
| SMBJ85             | 85  | 94.4   | 115  | 1          | 151                                       | 3.9                               | 1  | NU              |
| SMBJ85A            | 85  | 94.4   | 104  | 1          | 137                                       | 4.4                               | 1  | NV              |
| SMBJ90             | 90  | 100  | 122  | 1          | 160                                       | 3.8                               | 1  | NW              |
| SMBJ90A            | 90  | 100  | 111  | 1          | 146                                       | 4.1                               | 1  | NX              |
| SMBJ100            | 100   | 111  | 136  | 1          | 179                                       | 3.4                               | 1  | NY              |
| SMBJ100A           | 100   | 111  | 123  | 1          | 162                                       | 3.7                               | 1  | NZ              |
| SMBJ110            | 110   | 122  | 149  | 1          | 196                                       | 3.0                               | 1  | PD              |
| SMBJ110A           | 110   | 122  | 135  | 1          | 177                                       | 3.4                               | 1  | PE              |
| SMBJ120            | 120   | 133  | 163  | 1          | 214                                       | 2.8                               | 1  | PF              |
| SMBJ120A           | 120   | 133  | 147  | 1          | 193                                       | 3.1                               | 1  | PG              |
| SMBJ130            | 130   | 144  | 176  | 1          | 231                                       | 2.6                               | 1  | PH              |
| SMBJ130A           | 130   | 144  | 159  | 1          | 209                                       | 2.9                               | 1  | PK              |
| SMBJ150            | 150   | 167  | 204  | 1          | 268                                       | 2.2                               | 1  | PL              |
| SMBJ150A           | 150   | 167  | 185  | 1          | 243                                       | 2.5                               | 1  | PM              |
| SMBJ160            | 160   | 178  | 218  | 1          | 287                                       | 2.1                               | 1  | PN              |
| SMBJ160A           | 160   | 178  | 197  | 1          | 259                                       | 2.3                               | 1  | PP              |
| SMBJ170            | 170   | 189  | 231  | 1          | 304                                       | 2.0                               | 1  | PQ              |
| SMBJ170A           | 170   | 189  | 209  | 1          | 275                                       | 2.2                               | 1  | PR              |
| SMBJ180A           | 180   | 201  | 222  | 1          | 292                                       | 2.1                               | 1  | PT              |

For parts without A, the VBR is +10%.

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| MCC<br>PART NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$ | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @ $I_{PP}$ | PEAK PULSE<br>CURRENT<br>$I_{PP}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$ | MARKING<br>CODE |
|--------------------|---|--|------|------------|---|-----------------------------------|--|-----------------|
|                    | VOLTS                                       | MIN  | MAX  | $I_T$ (mA) | VOLTS                                     | (AMPS)                            | ( $\mu$ A)   |                 |
| SMBJ200A           | 200   | 224  | 247  | 1          | 324                                       | 1.9                               | 1  | PV              |
| SMBJ220A           | 220   | 246  | 272  | 1          | 356                                       | 1.7                               | 1  | PX              |
| SMBJ250A           | 250   | 279  | 309  | 1          | 405                                       | 1.5                               | 1  | PZ              |
| SMBJ300A           | 300   | 335  | 371  | 1          | 486                                       | 1.3                               | 1  | QE              |
| SMBJ350A           | 350   | 391  | 432  | 1          | 567                                       | 1.1                               | 1  | QG              |
| SMBJ400A           | 400   | 447  | 494  | 1          | 648                                       | 0.9                               | 1  | QK              |
| SMBJ440A           | 440   | 492  | 543  | 1          | 713                                       | 0.9                               | 1  | QM              |
| SMBJ5.0C           | 5.0   | 6.40   | 7.30 | 10         | 9.6                                       | 62.5                              | 800  | AD              |
| SMBJ5.0CA          | 5.0   | 6.40   | 7.00 | 10         | 9.2                                       | 65.2                              | 800  | AE              |
| SMBJ6.0C           | 6.0   | 6.67   | 8.15 | 10         | 11.4                                      | 52.6                              | 800  | AF              |
| SMBJ6.0CA          | 6.0   | 6.67   | 7.37 | 10         | 10.3                                      | 58.3                              | 800  | AG              |
| SMBJ6.5C           | 6.5   | 7.22   | 8.82 | 10         | 12.3                                      | 48.7                              | 500  | AH              |
| SMBJ6.5CA          | 6.5   | 7.22   | 7.98 | 10         | 11.2                                      | 53.6                              | 500  | AK              |
| SMBJ7.0C           | 7.0   | 7.78   | 9.51 | 10         | 13.3                                      | 45.1                              | 200  | AL              |
| SMBJ7.0CA          | 7.0   | 7.78   | 8.60 | 10         | 12.0                                      | 50.0                              | 200  | AM              |
| SMBJ7.5C           | 7.5   | 8.33   | 10.2 | 1          | 14.3                                      | 42.0                              | 100  | AN              |
| SMBJ7.5CA          | 7.5   | 8.33   | 9.21 | 1          | 12.9                                      | 46.5                              | 100  | AP              |
| SMBJ8.0C           | 8.0   | 8.89   | 10.9 | 1          | 15.0                                      | 40.0                              | 50   | AQ              |
| SMBJ8.0CA          | 8.0   | 8.89   | 9.83 | 1          | 13.6                                      | 44.1                              | 50   | AR              |
| SMBJ8.5C           | 8.5   | 9.44   | 11.5 | 1          | 15.9                                      | 37.7                              | 10   | AS              |
| SMBJ8.5CA          | 8.5   | 9.44   | 10.4 | 1          | 14.4                                      | 41.7                              | 10   | AT              |
| SMBJ9.0C           | 9.0   | 10.0   | 12.2 | 1          | 16.9                                      | 35.5                              | 5  | AU              |
| SMBJ9.0CA          | 9.0   | 10.0   | 11.1 | 1          | 15.4                                      | 39.0                              | 5  | AV              |
| SMBJ10C            | 10  | 11.1   | 13.6 | 1          | 18.8                                      | 31.9                              | 1  | AW              |
| SMBJ10CA           | 10  | 11.1   | 12.3 | 1          | 17.0                                      | 35.3                              | 1  | AX              |
| SMBJ11C            | 11  | 12.2   | 14.9 | 1          | 20.1                                      | 29.9                              | 1  | AY              |
| SMBJ11CA           | 11  | 12.2   | 13.5 | 1          | 18.2                                      | 33.0                              | 1  | AZ              |
| SMBJ12C            | 12  | 13.3   | 16.3 | 1          | 22.0                                      | 27.3                              | 1  | BD              |
| SMBJ12CA           | 12  | 13.3   | 14.7 | 1          | 19.9                                      | 30.2                              | 1  | BE              |
| SMBJ13C            | 13  | 14.4   | 17.6 | 1          | 23.8                                      | 25.2                              | 1  | BF              |
| SMBJ13CA           | 13  | 14.4   | 15.9 | 1          | 21.5                                      | 27.9                              | 1  | BG              |
| SMBJ14C            | 14  | 15.6   | 19.1 | 1          | 25.8                                      | 23.3                              | 1  | BH              |
| SMBJ14CA           | 14  | 15.6   | 17.2 | 1          | 23.2                                      | 25.8                              | 1  | BK              |
| SMBJ15C            | 15  | 16.7   | 20.4 | 1          | 26.9                                      | 22.3                              | 1  | BL              |
| SMBJ15CA           | 15  | 16.7   | 18.5 | 1          | 24.4                                      | 24.0                              | 1  | BM              |
| SMBJ16C            | 16  | 17.8   | 21.8 | 1          | 28.8                                      | 20.8                              | 1  | BN              |
| SMBJ16CA           | 16  | 17.8   | 19.7 | 1          | 26.0                                      | 23.1                              | 1  | BP              |
| SMBJ17C            | 17  | 18.9   | 23.1 | 1          | 30.5                                      | 19.7                              | 1  | BQ              |
| SMBJ17CA           | 17  | 18.9   | 20.9 | 1          | 27.6                                      | 21.7                              | 1  | BR              |
| SMBJ18C            | 18  | 20.0   | 24.4 | 1          | 32.2                                      | 18.6                              | 1  | BS              |
| SMBJ18CA           | 18  | 20.0   | 22.1 | 1          | 29.2                                      | 20.5                              | 1  | BT              |
| SMBJ20C            | 20  | 22.2   | 27.1 | 1          | 35.8                                      | 16.7                              | 1  | BU              |
| SMBJ20CA           | 20  | 22.2   | 24.5 | 1          | 32.4                                      | 18.5                              | 1  | BV              |
| SMBJ22C            | 22  | 24.4   | 29.8 | 1          | 39.4                                      | 15.2                              | 1  | BW              |
| SMBJ22CA           | 22  | 24.4   | 26.9 | 1          | 35.5                                      | 16.9                              | 1  | BX              |
| SMBJ24C            | 24  | 26.7   | 32.6 | 1          | 43.0                                      | 14.0                              | 1  | BY              |
| SMBJ24CA           | 24  | 26.7   | 29.5 | 1          | 38.9                                      | 15.4                              | 1  | BZ              |

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Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC<br>PART NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$ | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @ $I_{PP}$ | PEAK PULSE<br>CURRENT<br>$I_{PP}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$ | MARKING<br>CODE |
|--------------------|---|--|------|------------|---|-----------------------------------|--|-----------------|
|                    | VOLTS                                       | MIN  | MAX  | $I_T$ (mA) | VOLTS                                     | (AMPS)                            | ( $\mu$ A)   |                 |
| SMBJ26C            | 26  | 28.9   | 35.3 | 1          | 46.6                                      | 12.4                              | 1  | CD              |
| SMBJ26CA           | 26  | 28.9   | 31.9 | 1          | 42.1                                      | 14.2                              | 1  | CE              |
| SMBJ28C            | 28  | 31.1   | 38.0 | 1          | 50.0                                      | 12.0                              | 1  | CF              |
| SMBJ28CA           | 28  | 31.1   | 34.4 | 1          | 45.4                                      | 13.2                              | 1  | CG              |
| SMBJ30C            | 30  | 33.3   | 40.7 | 1          | 53.5                                      | 11.2                              | 1  | CH              |
| SMBJ30CA           | 30  | 33.3   | 36.8 | 1          | 48.4                                      | 12.4                              | 1  | CK              |
| SMBJ33C            | 33  | 36.7   | 44.9 | 1          | 59.0                                      | 10.2                              | 1  | CL              |
| SMBJ33CA           | 33  | 36.7   | 40.6 | 1          | 53.3                                      | 11.3                              | 1  | CM              |
| SMBJ36C            | 36  | 40.0   | 48.9 | 1          | 64.3                                      | 9.3                               | 1  | CN              |
| SMBJ36CA           | 36  | 40.0   | 44.2 | 1          | 58.1                                      | 10.3                              | 1  | CP              |
| SMBJ40C            | 40  | 44.4   | 54.3 | 1          | 71.4                                      | 8.4                               | 1  | CQ              |
| SMBJ40CA           | 40  | 44.4   | 49.1 | 1          | 64.5                                      | 9.3                               | 1  | CR              |
| SMBJ43C            | 43  | 47.8   | 58.4 | 1          | 76.7                                      | 7.8                               | 1  | CS              |
| SMBJ43CA           | 43  | 47.8   | 52.8 | 1          | 69.4                                      | 8.6                               | 1  | CT              |
| SMBJ45C            | 45  | 50.0   | 61.1 | 1          | 80.3                                      | 7.5                               | 1  | CU              |
| SMBJ45CA           | 45  | 50.0   | 55.3 | 1          | 72.7                                      | 8.3                               | 1  | CV              |
| SMBJ48C            | 48  | 53.3   | 65.1 | 1          | 85.5                                      | 7.0                               | 1  | CW              |
| SMBJ48CA           | 48  | 53.3   | 58.9 | 1          | 77.4                                      | 7.7                               | 1  | CX              |
| SMBJ51C            | 51  | 56.7   | 69.3 | 1          | 91.1                                      | 6.6                               | 1  | CY              |
| SMBJ51CA           | 51  | 56.7   | 62.7 | 1          | 82.4                                      | 7.3                               | 1  | CZ              |
| SMBJ54C            | 54  | 60.0   | 73.3 | 1          | 96.3                                      | 6.2                               | 1  | DD              |
| SMBJ54CA           | 54  | 60.0   | 66.3 | 1          | 87.1                                      | 6.9                               | 1  | DE              |
| SMBJ58C            | 58  | 64.4   | 78.7 | 1          | 103                                       | 5.8                               | 1  | DF              |
| SMBJ58CA           | 58  | 64.4   | 71.2 | 1          | 93.6                                      | 6.4                               | 1  | DG              |
| SMBJ60C            | 60  | 66.7   | 81.5 | 1          | 107                                       | 5.6                               | 1  | DH              |
| SMBJ60CA           | 60  | 66.7   | 73.7 | 1          | 96.8                                      | 6.2                               | 1  | DK              |
| SMBJ64C            | 64  | 71.1   | 86.9 | 1          | 114                                       | 5.3                               | 1  | DL              |
| SMBJ64CA           | 64  | 71.1   | 78.6 | 1          | 103                                       | 5.8                               | 1  | DM              |
| SMBJ70C            | 70  | 77.8   | 95.1 | 1          | 125                                       | 4.8                               | 1  | DN              |
| SMBJ70CA           | 70  | 77.8   | 86.0 | 1          | 113                                       | 5.3                               | 1  | DP              |
| SMBJ75C            | 75  | 83.3   | 102  | 1          | 134                                       | 4.5                               | 1  | DQ              |
| SMBJ75CA           | 75  | 83.3   | 92.1 | 1          | 121                                       | 4.9                               | 1  | DR              |
| SMBJ78C            | 78  | 86.7   | 106  | 1          | 139                                       | 4.3                               | 1  | DS              |
| SMBJ78CA           | 78  | 86.7   | 95.8 | 1          | 126                                       | 4.7                               | 1  | DT              |
| SMBJ85C            | 85  | 94.4   | 115  | 1          | 151                                       | 3.9                               | 1  | DU              |
| SMBJ85CA           | 85  | 94.4   | 104  | 1          | 137                                       | 4.4                               | 1  | DV              |
| SMBJ90C            | 90  | 100  | 122  | 1          | 160                                       | 3.8                               | 1  | DW              |
| SMBJ90CA           | 90  | 100  | 111  | 1          | 146                                       | 4.1                               | 1  | DX              |
| SMBJ100C           | 100   | 111  | 136  | 1          | 179                                       | 3.4                               | 1  | DY              |
| SMBJ100CA          | 100   | 111  | 123  | 1          | 162                                       | 3.7                               | 1  | DZ              |
| SMBJ110C           | 110   | 122  | 149  | 1          | 196                                       | 3.0                               | 1  | ED              |
| SMBJ110CA          | 110   | 122  | 135  | 1          | 177                                       | 3.4                               | 1  | EE              |
| SMBJ120C           | 120   | 133  | 163  | 1          | 214                                       | 2.8                               | 1  | EF              |
| SMBJ120CA          | 120   | 133  | 147  | 1          | 193                                       | 3.1                               | 1  | EG              |
| SMBJ130C           | 130   | 144  | 176  | 1          | 231                                       | 2.6                               | 1  | EH              |
| SMBJ130CA          | 130   | 144  | 159  | 1          | 209                                       | 2.9                               | 1  | EK              |
| SMBJ150C           | 150   | 167  | 204  | 1          | 268                                       | 2.2                               | 1  | EL              |

For parts without A, the VBR is +10%.

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| MCC<br>PART NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$ | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |     |            | MAXIMUM<br>CLAMPING<br>VOLTAGE@ $I_{PP}$ | PEAK PULSE<br>CURRENT<br>$I_{PP}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$ | MARKING<br>CODE |
|--------------------|---|--|-----|------------|--|-----------------------------------|--|-----------------|
|                    | VOLTS                                       | MIN  | MAX | $I_T$ (mA) | VOLTS                                    | (AMPS)                            | ( $\mu$ A)   |                 |
| SMBJ150CA          | 150   | 167  | 185 | 1          | 243                                      | 2.5                               | 1  | EM              |
| SMBJ160C           | 160   | 178  | 218 | 1          | 287                                      | 2.1                               | 1  | EN              |
| SMBJ160CA          | 160   | 178  | 197 | 1          | 259                                      | 2.3                               | 1  | EP              |
| SMBJ170C           | 170   | 189  | 231 | 1          | 304                                      | 2.0                               | 1  | EQ              |
| SMBJ170CA          | 170   | 189  | 209 | 1          | 275                                      | 2.2                               | 1  | ER              |
| SMBJ180CA          | 180   | 201  | 222 | 1          | 292                                      | 2.1                               | 1  | ET              |
| SMBJ200CA          | 200   | 224  | 247 | 1          | 324                                      | 1.9                               | 1  | EV              |
| SMBJ220CA          | 220   | 246  | 272 | 1          | 356                                      | 1.7                               | 1  | EX              |
| SMBJ250CA          | 250   | 279  | 309 | 1          | 405                                      | 1.5                               | 1  | EZ              |
| SMBJ300CA          | 300   | 335  | 371 | 1          | 486                                      | 1.3                               | 1  | FE              |
| SMBJ350CA          | 350   | 391  | 432 | 1          | 567                                      | 1.1                               | 1  | FG              |
| SMBJ400CA          | 400   | 447  | 494 | 1          | 648                                      | 0.9                               | 1  | FK              |
| SMBJ440CA          | 440   | 492  | 543 | 1          | 713                                      | 0.9                               | 1  | FM              |

For parts without A, the VBR is +10%.

**Curve Characteristics**

Fig. 1 - Peak Pulse Power Rating Curve



Fig. 2 - Typical Junction Capacitance

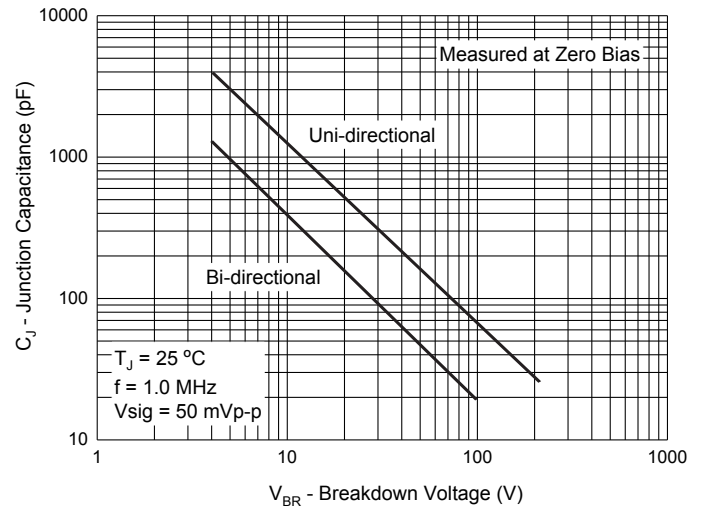


Fig. 3 - Pulse Waveform



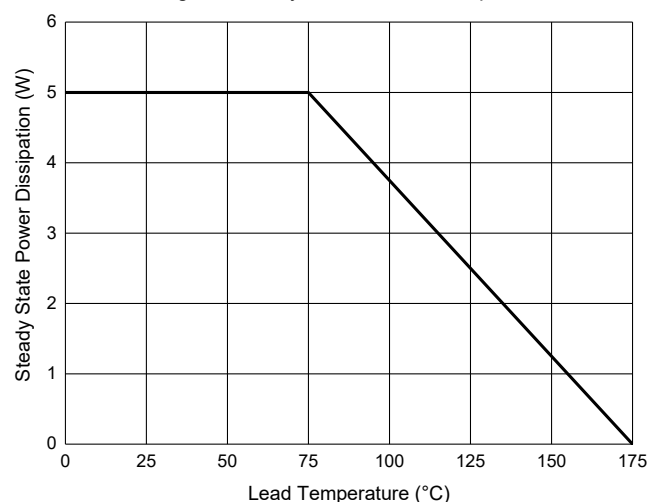
Fig. 4 - Pulse Derating Curve



Fig. 5 - Maximum Non-Repetitive Peak Forward Surge Current



Fig. 6 - Steady State Power Dissipation



## Ordering Information

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

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