

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

**Features**

- AEC-Q101 Qualified
- 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 (Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMBJ11CAHE3 for 5% Tolerance

**Mechanical Data**

- Polarity: Color Band Denotes Positive End( cathode) Except Bi-directional Types
- Maximum Soldering Temperature: 260°C for 10 Seconds
- Manufacturing Code Added for Better Tracking
- 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

**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 |

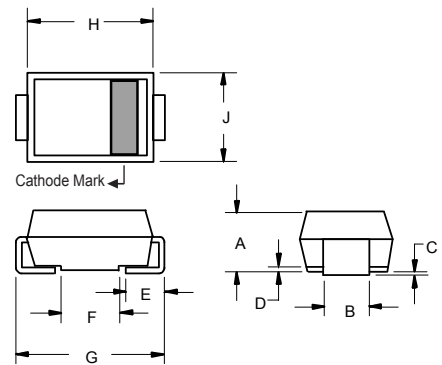
- Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
 2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.  
 3. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.4.  
 4. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal.

Pin Configuration:



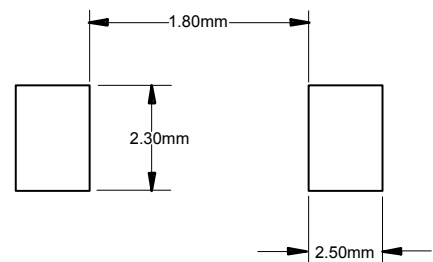
**600 Watt TVS  
11 to 78 Volts**

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



| DIM | DIMENSIONS |       |      |      | NOTE |
|-----|------------|-------|------|------|------|
|     | INCHES     |       | MM   |      |      |
|     | 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<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)   |                 |
| SMBJ11AHE3         | 11  | 12.2   | 13.5 | 1          | 18.2                                     | 33.0                              | 5  | KZ              |
| SMBJ12AHE3         | 12  | 13.3   | 14.7 | 1          | 19.9                                     | 30.2                              | 5  | LE              |
| SMBJ13AHE3         | 13  | 14.4   | 15.9 | 1          | 21.5                                     | 27.9                              | 5  | LG              |
| SMBJ14AHE3         | 14  | 15.6   | 17.2 | 1          | 23.2                                     | 25.8                              | 5  | LK              |
| SMBJ15AHE3         | 15  | 16.7   | 18.5 | 1          | 24.4                                     | 24.0                              | 5  | LM              |
| SMBJ16AHE3         | 16  | 17.8   | 19.7 | 1          | 26.0                                     | 23.1                              | 5  | LP              |
| SMBJ17AHE3         | 17  | 18.9   | 20.9 | 1          | 27.6                                     | 21.7                              | 5  | LR              |
| SMBJ18AHE3         | 18  | 20.0   | 22.1 | 1          | 29.2                                     | 20.5                              | 5  | LT              |
| SMBJ20AHE3         | 20  | 22.2   | 24.5 | 1          | 32.4                                     | 18.5                              | 5  | LV              |
| SMBJ22AHE3         | 22  | 24.4   | 26.9 | 1          | 35.5                                     | 16.9                              | 5  | LX              |
| SMBJ24AHE3         | 24  | 26.7   | 29.5 | 1          | 38.9                                     | 15.4                              | 5  | LZ              |
| SMBJ26AHE3         | 26  | 28.9   | 31.9 | 1          | 42.1                                     | 14.2                              | 5  | ME              |
| SMBJ28AHE3         | 28  | 31.1   | 34.4 | 1          | 45.4                                     | 13.2                              | 5  | MG              |
| SMBJ30AHE3         | 30  | 33.3   | 36.8 | 1          | 48.4                                     | 12.4                              | 5  | MK              |
| SMBJ33AHE3         | 33  | 36.7   | 40.6 | 1          | 53.3                                     | 11.3                              | 5  | MM              |
| SMBJ36AHE3         | 36  | 40.0   | 44.2 | 1          | 58.1                                     | 10.3                              | 5  | MP              |
| SMBJ40AHE3         | 40  | 44.4   | 49.1 | 1          | 64.5                                     | 9.3                               | 5  | MR              |
| SMBJ43AHE3         | 43  | 47.8   | 52.8 | 1          | 69.4                                     | 8.6                               | 5  | MT              |
| SMBJ45AHE3         | 45  | 50.0   | 55.3 | 1          | 72.7                                     | 8.3                               | 5  | MV              |
| SMBJ48AHE3         | 48  | 53.3   | 58.9 | 1          | 77.4                                     | 7.7                               | 5  | MX              |
| SMBJ51AHE3         | 51  | 56.7   | 62.7 | 1          | 82.4                                     | 7.3                               | 5  | MZ              |
| SMBJ54AHE3         | 54  | 60.0   | 66.3 | 1          | 87.1                                     | 6.9                               | 5  | NE              |
| SMBJ58AHE3         | 58  | 64.4   | 71.2 | 1          | 93.6                                     | 6.4                               | 5  | NG              |
| SMBJ60AHE3         | 60  | 66.7   | 73.7 | 1          | 96.8                                     | 6.2                               | 5  | NK              |
| SMBJ64AHE3         | 64  | 71.1   | 78.6 | 1          | 103                                      | 5.8                               | 5  | NM              |
| SMBJ70AHE3         | 70  | 77.8   | 86.0 | 1          | 113                                      | 5.3                               | 5  | NP              |
| SMBJ75AHE3         | 75  | 83.3   | 92.1 | 1          | 121                                      | 4.9                               | 5  | NR              |
| SMBJ78AHE3         | 78  | 86.7   | 95.8 | 1          | 126                                      | 4.7                               | 5  | NT              |
| SMBJ11CAHE3        | 11  | 12.2   | 13.5 | 1          | 18.2                                     | 33.0                              | 5  | AZ              |
| SMBJ12CAHE3        | 12  | 13.3   | 14.7 | 1          | 19.9                                     | 30.2                              | 5  | BE              |
| SMBJ13CAHE3        | 13  | 14.4   | 15.9 | 1          | 21.5                                     | 27.9                              | 5  | BG              |
| SMBJ14CAHE3        | 14  | 15.6   | 17.2 | 1          | 23.2                                     | 25.8                              | 5  | BK              |
| SMBJ15CAHE3        | 15  | 16.7   | 18.5 | 1          | 24.4                                     | 24.0                              | 5  | BM              |
| SMBJ16CAHE3        | 16  | 17.8   | 19.7 | 1          | 26.0                                     | 23.1                              | 5  | BP              |
| SMBJ17CAHE3        | 17  | 18.9   | 20.9 | 1          | 27.6                                     | 21.7                              | 5  | BR              |
| SMBJ18CAHE3        | 18  | 20.0   | 22.1 | 1          | 29.2                                     | 20.5                              | 5  | BT              |
| SMBJ20CAHE3        | 20  | 22.2   | 24.5 | 1          | 32.4                                     | 18.5                              | 5  | BV              |
| SMBJ22CAHE3        | 22  | 24.4   | 26.9 | 1          | 35.5                                     | 16.9                              | 5  | BX              |
| SMBJ24CAHE3        | 24  | 26.7   | 29.5 | 1          | 38.9                                     | 15.4                              | 5  | BZ              |
| SMBJ26CAHE3        | 26  | 28.9   | 31.9 | 1          | 42.1                                     | 14.2                              | 5  | CE              |
| SMBJ28CAHE3        | 28  | 31.1   | 34.4 | 1          | 45.4                                     | 13.2                              | 5  | CG              |
| SMBJ30CAHE3        | 30  | 33.3   | 36.8 | 1          | 48.4                                     | 12.4                              | 5  | CK              |
| SMBJ33CAHE3        | 33  | 36.7   | 40.6 | 1          | 53.3                                     | 11.3                              | 5  | CM              |
| SMBJ36CAHE3        | 36  | 40.0   | 44.2 | 1          | 58.1                                     | 10.3                              | 5  | CP              |
| SMBJ40CAHE3        | 40  | 44.4   | 49.1 | 1          | 64.5                                     | 9.3                               | 5  | CR              |
| SMBJ43CAHE3        | 43  | 47.8   | 52.8 | 1          | 69.4                                     | 8.6                               | 5  | CT              |
| SMBJ45CAHE3        | 45  | 50.0   | 55.3 | 1          | 72.7                                     | 8.3                               | 5  | CV              |
| SMBJ48CAHE3        | 48  | 53.3   | 58.9 | 1          | 77.4                                     | 7.7                               | 5  | CX              |
| SMBJ51CAHE3        | 51  | 56.7   | 62.7 | 1          | 82.4                                     | 7.3                               | 5  | CZ              |

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)   |                 |
| SMBJ54CAHE3        | 54  | 60.0   | 66.3 | 1          | 87.1                                     | 6.9                               | 5  | DE              |
| SMBJ58CAHE3        | 58  | 64.4   | 71.2 | 1          | 93.6                                     | 6.4                               | 5  | DG              |
| SMBJ60CAHE3        | 60  | 66.7   | 73.7 | 1          | 96.8                                     | 6.2                               | 5  | DK              |
| SMBJ64CAHE3        | 64  | 71.1   | 78.6 | 1          | 103                                      | 5.8                               | 5  | DM              |
| SMBJ70CAHE3        | 70  | 77.8   | 86.0 | 1          | 113                                      | 5.3                               | 5  | DP              |
| SMBJ75CAHE3        | 75  | 83.3   | 92.1 | 1          | 121                                      | 4.9                               | 5  | DR              |
| SMBJ78CAHE3        | 78  | 86.7   | 95.8 | 1          | 126                                      | 4.7                               | 5  | DT              |

**Curve Characteristics**

Fig. 1 - Peak Pulse Power Rating Curve

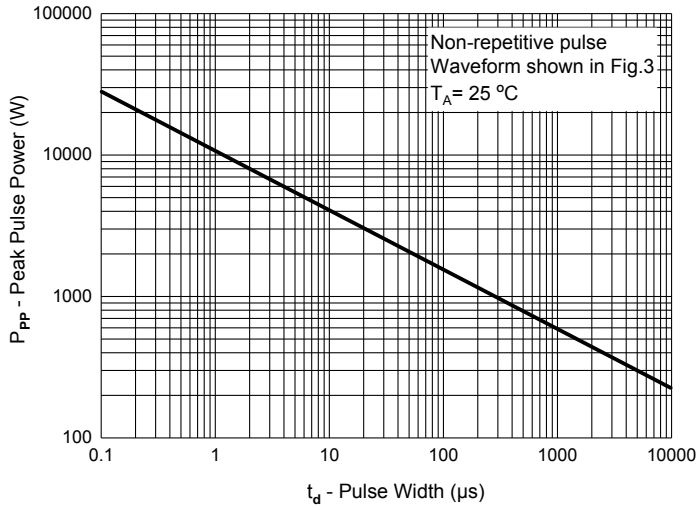


Fig. 2 - Typical Junction Capacitance

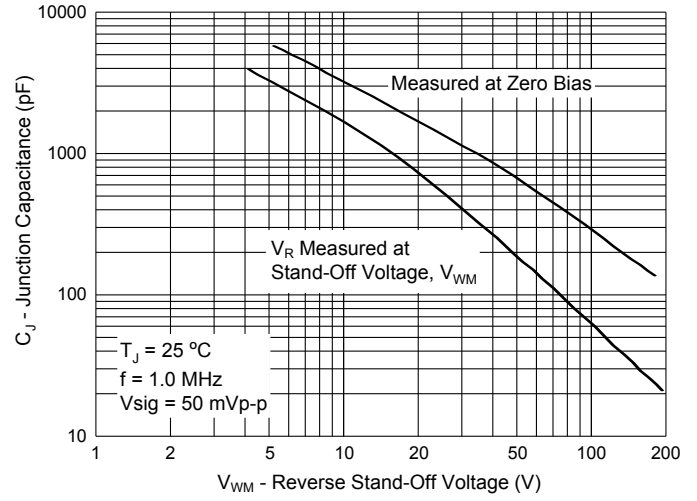


Fig. 3 - Pulse Waveform

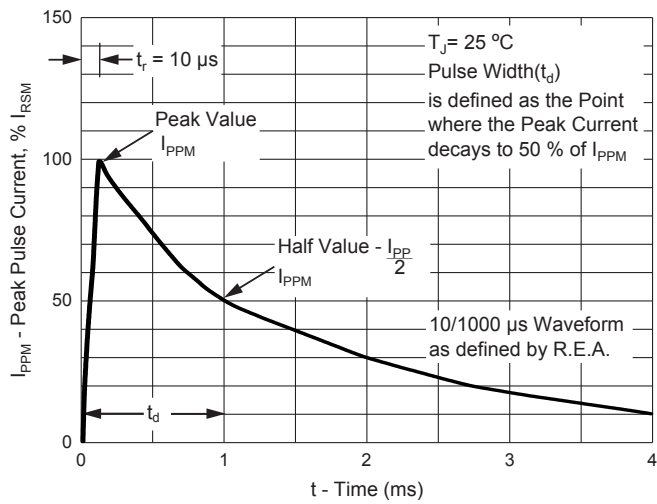
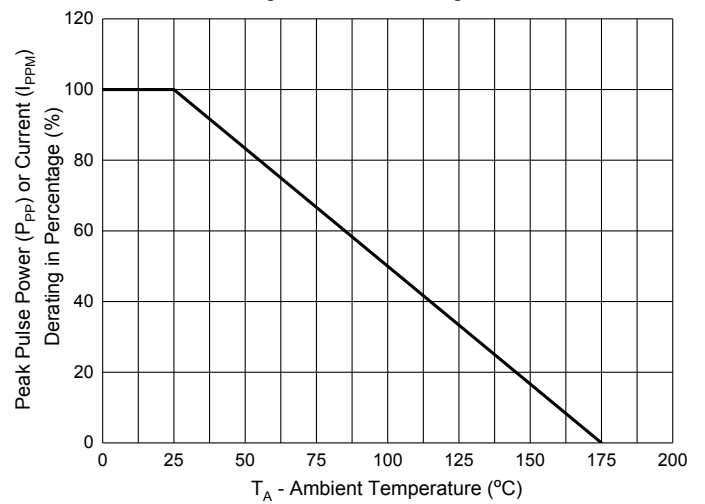


Fig. 4 - Pulse Derating Curve



### Ordering Information

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

**\*\*\*IMPORTANT NOTICE\*\*\***

*Micro Commercial Components Corp.* reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

**\*\*\*LIFE SUPPORT\*\*\***

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

**\*\*\*CUSTOMER AWARENESS\*\*\***

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [Micro Commercial Components \(MCC\)](#) manufacturer:*

Other Similar products are found below :

[NTE4902](#) [P4SMAJ15A](#) [P4SMAJ26A](#) [SMAJ400CA-TP](#) [TGL34-47CA](#) [ESDAULC45-1BF4](#) [SM1605E3/TR13](#) [SMF20A-TP](#) [P4SMAJ12A](#)  
[CPDUR24V-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [MPLAD30KP280A](#) [MPLAD30KP45CAE3](#) [MMBZ27VCLQ-7-F](#) [MMAD1108/TR13](#)  
[MPLAD30KP24A](#) [MPLAD30KP30CAE3](#) [ACPDQC5V0R-HF](#) [DFLT170A-7](#) [NTE4900](#) [NTE4926](#) [NTE4938](#) [JANTX1N6144A](#)  
[JANTX1N6057A](#) [SMF22A-TP](#) [SMF12A-TP](#) [SLVU2.8-TP](#) [SMLJ6.5CA-TP](#) [SMAJ6.5CA-TP](#) [MMAD1108E3/TR13](#) [JANTX1N6160A](#)  
[D5V0M1U2LP3-7](#) [SMAJ400A-TP](#) [AOZ8811DT-03](#) [AOZ8831DI-05](#) [AOZ8831DT-03](#) [SMAJ188CA](#) [3SMC33CA BK](#) [CPDQC3V3C-HF](#)  
[CPDQC12VE-HF](#) [GRPADATAJANTX1N6041A](#) [MPLAD30KP170CA](#) [82357120100](#) [5.0SMLJ15CA-TP](#) [5KP18A-TP](#) [P6KE8.2A-TP](#)  
[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D26V0H1U2LP16-7](#)