

**1500W Transient Voltage Suppressor (TVS) protection device****Main product characteristics**

|                             |               |
|-----------------------------|---------------|
| $V_{WM}$                    | 5.0V – 440V   |
| $V_{BR(min)} - V_{BR(max)}$ | 6.40V – 543V  |
| $I_{PP}$                    | 156.3A – 2.1A |
| $V_{CL(MAX)}$               | 9.6V – 713V   |
| $P_{PP}$                    | 1500W         |

**DO-214AB (SMC)****Description and applications**

This device has the ability to clamp dangerous high voltage, short term transients such as produced by directed or radiated electrostatic discharge phenomena before entering sensitive component regions of a circuit design. Response time of clamping action is virtually instantaneous. As a result, they may also be used effectively for protection from ESD or EFT per IEC61000-4-2 and IEC61000-4-4 or for inductive switching environments and induced RF. They can also be used for protecting other sensitive components from secondary lightning effects per IEC61000-4-5 and class levels defined herein. Microsemi also offers numerous other TVS products to meet higher and lower power demands and special applications.

- RoHS compliant (2002/95/EC), MSL level 1 (J-STD-020)
- Qualified to automotive grade – AEC Q101
- Bi-directional devices are denoted by the suffixes C or CA, electrical characteristics apply in both directions.

**Maximum ratings and characteristics<sup>(1)</sup>**

| Symbol          | Parameter                                                                                                  | Value          | Unit |
|-----------------|------------------------------------------------------------------------------------------------------------|----------------|------|
| $P_{PPM}$       | Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(2)(3)</sup> (fig.1)                           | 1500           | W    |
| $I_{PPM}$       | Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(2)</sup> (fig. 3)                                 | See next table | A    |
| $I_{FSM}$       | Non repetitive peak forward surge current (8.3ms single half sine wave) unidirectional only <sup>(4)</sup> | 200            | A    |
| $R_{\theta JL}$ | Typical thermal resistance junction to lead                                                                | 15             | °C/W |
| $R_{\theta JA}$ | Typical thermal resistance junction to ambient                                                             | 75             | °C/W |
| $T_{STG}$       | Storage temperature                                                                                        | -55 to +150    | °C   |
| $T_J$           | Junction temperature                                                                                       | -55 to +150    | °C   |

(1) All ratings at 25°C unless specified otherwise

(2) Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2. rating is 300W above 78V.

(3) Mounted on copper pad area of 0.2" x 0.2" (5.0mm x 5.0mm)

(4) Mounted on minimum recommended pad layout

(5)  $V_F=3.5\text{V}$  for devices of  $V_{BR} < 220\text{V}$  and  $V_F=5.0\text{V}$  maximum for devices of  $V_{BR} > 220\text{V}$

## 1500W Transient Voltage Suppressor (TVS) protection device

### Electrical characteristics<sup>(1)</sup>

| DEVICE                                  | Device marking code |       | BREAKDOWN VOLTAGE <sup>(2)</sup> , V <sub>BR</sub><br>V <sub>BR</sub> (V) @ I <sub>T</sub> (mA) |      | TEST CURRENT I <sub>T</sub><br>(mA) | STAND-OFF VOLTAGE V <sub>WM</sub><br>(V) | MAXIMUM STANDBY CURRENT <sup>(4)</sup> I <sub>D</sub><br>(μA) @ V <sub>WM</sub> | MAXIMUM PEAK PULSE CURRENT <sup>(3)</sup> I <sub>PP</sub><br>(A) | MAXIMUM CLAMPING VOLTAGE V <sub>C</sub> (V)<br>@ I <sub>PP</sub> |
|-----------------------------------------|---------------------|-------|-------------------------------------------------------------------------------------------------|------|-------------------------------------|------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
|                                         | UNI                 | BI    | Min                                                                                             | Max  |                                     |                                          |                                                                                 |                                                                  |                                                                  |
| SMCJ5.0e3 / SMCJ5.0Ce3                  | 5.0                 | 5.0C  | 6.40                                                                                            | 7.82 | 10                                  | 5.0                                      | 1000                                                                            | 156.3                                                            | 9.6                                                              |
| SMCJ5.0Ae3 / SMCJ5.0CAe3 <sup>(5)</sup> | 5.0A                | 5.0CA | 6.40                                                                                            | 7.07 | 10                                  | 5.0                                      | 1000                                                                            | 163.0                                                            | 9.2                                                              |
| SMCJ6.0e3 / SMCJ6.0Ce3                  | 6.0                 | 6.0C  | 6.67                                                                                            | 8.15 | 10                                  | 6.0                                      | 1000                                                                            | 131.6                                                            | 11.4                                                             |
| SMCJ6.0Ae3 / SMCJ6.0CAe3                | 6.0A                | 6.0CA | 6.67                                                                                            | 7.37 | 10                                  | 6.0                                      | 1000                                                                            | 145.6                                                            | 10.3                                                             |
| SMCJ6.5e3 / SMCJ6.5Ce3                  | 6.5                 | 6.5C  | 7.22                                                                                            | 8.82 | 10                                  | 6.5                                      | 500                                                                             | 122.0                                                            | 12.3                                                             |
| SMCJ6.5Ae3 / SMCJ6.5CAe3                | 6.5A                | 6.5CA | 7.22                                                                                            | 7.98 | 10                                  | 6.5                                      | 500                                                                             | 133.9                                                            | 11.2                                                             |
| SMCJ7.0e3 / SMCJ7.0Ce3                  | 7.0                 | 7.0C  | 7.78                                                                                            | 9.51 | 10                                  | 7.0                                      | 200                                                                             | 112.8                                                            | 13.3                                                             |
| SMCJ7.0Ae3 / SMCJ7.0CAe3                | 7.0A                | 7.0CA | 7.78                                                                                            | 8.60 | 10                                  | 7.0                                      | 200                                                                             | 125.0                                                            | 12.0                                                             |
| SMCJ7.5e3 / SMCJ7.5Ce3                  | 7.5                 | 7.5C  | 8.33                                                                                            | 10.2 | 1.0                                 | 7.5                                      | 100                                                                             | 104.9                                                            | 14.3                                                             |
| SMCJ7.5Ae3 / SMCJ7.5CAe3                | 7.5A                | 7.5CA | 8.33                                                                                            | 9.21 | 1.0                                 | 7.5                                      | 100                                                                             | 116.3                                                            | 12.9                                                             |
| SMCJ8.0e3 / SMCJ8.0Ce3                  | 8.0                 | 8.0C  | 8.89                                                                                            | 10.9 | 1.0                                 | 8.0                                      | 50                                                                              | 100.0                                                            | 15.0                                                             |
| SMCJ8.0Ae3 / SMCJ8.0CAe3                | 8.0A                | 8.0CA | 8.89                                                                                            | 9.83 | 1.0                                 | 8.0                                      | 50                                                                              | 110.3                                                            | 13.6                                                             |
| SMCJ8.5e3 / SMCJ8.5Ce3                  | 8.5                 | 8.5C  | 9.44                                                                                            | 11.5 | 1.0                                 | 8.5                                      | 20                                                                              | 94.3                                                             | 15.9                                                             |
| SMCJ8.5Ae3 / SMCJ8.5CAe3                | 8.5A                | 8.5CA | 9.44                                                                                            | 10.4 | 1.0                                 | 8.5                                      | 20                                                                              | 104.2                                                            | 14.4                                                             |
| SMCJ9.0e3 / SMCJ9.0Ce3                  | 9.0                 | 9.0C  | 10.0                                                                                            | 12.2 | 1.0                                 | 9.0                                      | 10                                                                              | 88.8                                                             | 16.9                                                             |
| SMCJ9.0Ae3 / SMCJ9.0CAe3                | 9.0A                | 9.0CA | 10.0                                                                                            | 11.1 | 1.0                                 | 9.0                                      | 10                                                                              | 97.4                                                             | 15.4                                                             |
| SMCJ10e3 / SMCJ10Ce3                    | 10                  | 10C   | 11.1                                                                                            | 13.6 | 1.0                                 | 10                                       | 5.0                                                                             | 79.8                                                             | 18.8                                                             |
| SMCJ10Ae3 / SMCJ10CAe3                  | 10A                 | 10CA  | 11.1                                                                                            | 12.3 | 1.0                                 | 10                                       | 5.0                                                                             | 88.2                                                             | 17.0                                                             |
| SMCJ11e3 / SMCJ11Ce3                    | 11                  | 11C   | 12.2                                                                                            | 14.9 | 1.0                                 | 11                                       | 5.0                                                                             | 74.6                                                             | 20.1                                                             |
| SMCJ11Ae3 / SMCJ11CAe3                  | 11A                 | 11CA  | 12.2                                                                                            | 13.5 | 1.0                                 | 11                                       | 5.0                                                                             | 82.4                                                             | 18.2                                                             |
| SMCJ12e3 / SMCJ12Ce3                    | 12                  | 12C   | 13.3                                                                                            | 16.3 | 1.0                                 | 12                                       | 5.0                                                                             | 68.2                                                             | 22.0                                                             |
| SMCJ12Ae3 / SMCJ12CAe3                  | 12A                 | 12CA  | 13.3                                                                                            | 14.7 | 1.0                                 | 12                                       | 5.0                                                                             | 75.4                                                             | 19.9                                                             |
| SMCJ13e3 / SMCJ13Ce3                    | 13                  | 13C   | 14.4                                                                                            | 17.6 | 1.0                                 | 13                                       | 1.0                                                                             | 63.0                                                             | 23.8                                                             |
| SMCJ13Ae3 / SMCJ13CAe3                  | 13A                 | 13CA  | 14.4                                                                                            | 15.9 | 1.0                                 | 13                                       | 1.0                                                                             | 69.8                                                             | 21.5                                                             |
| SMCJ14e3 / SMCJ14Ce3                    | 14                  | 14C   | 15.6                                                                                            | 19.1 | 1.0                                 | 14                                       | 1.0                                                                             | 58.1                                                             | 25.8                                                             |
| SMCJ14Ae3 / SMCJ14CAe3                  | 14A                 | 14CA  | 15.6                                                                                            | 17.2 | 1.0                                 | 14                                       | 1.0                                                                             | 64.7                                                             | 23.2                                                             |
| SMCJ15e3 / SMCJ15Ce3                    | 15                  | 15C   | 16.7                                                                                            | 20.4 | 1.0                                 | 15                                       | 1.0                                                                             | 55.8                                                             | 26.9                                                             |
| SMCJ15Ae3 / SMCJ15CAe3                  | 15A                 | 15CA  | 16.7                                                                                            | 18.5 | 1.0                                 | 15                                       | 1.0                                                                             | 61.5                                                             | 24.4                                                             |
| SMCJ16e3 / SMCJ16Ce3                    | 16                  | 16C   | 17.8                                                                                            | 21.8 | 1.0                                 | 16                                       | 1.0                                                                             | 52.1                                                             | 28.8                                                             |
| SMCJ16Ae3 / SMCJ16CAe3                  | 16A                 | 16CA  | 17.8                                                                                            | 19.7 | 1.0                                 | 16                                       | 1.0                                                                             | 57.7                                                             | 26.0                                                             |
| SMCJ17e3 / SMCJ17Ce3                    | 17                  | 17C   | 18.9                                                                                            | 23.1 | 1.0                                 | 17                                       | 1.0                                                                             | 49.2                                                             | 30.5                                                             |
| SMCJ17Ae3 / SMCJ17CAe3                  | 17A                 | 17CA  | 18.9                                                                                            | 20.9 | 1.0                                 | 17                                       | 1.0                                                                             | 54.3                                                             | 27.6                                                             |
| SMCJ18e3 / SMCJ18Ce3                    | 18                  | 18C   | 20.0                                                                                            | 24.4 | 1.0                                 | 18                                       | 1.0                                                                             | 46.6                                                             | 32.2                                                             |
| SMCJ18Ae3 / SMCJ18CAe3                  | 18A                 | 18CA  | 20.0                                                                                            | 22.1 | 1.0                                 | 18                                       | 1.0                                                                             | 51.4                                                             | 29.2                                                             |
| SMCJ20e3 / SMCJ20Ce3                    | 20                  | 20C   | 22.2                                                                                            | 27.1 | 1.0                                 | 20                                       | 1.0                                                                             | 41.9                                                             | 35.8                                                             |
| SMCJ20Ae3 / SMCJ20CAe3                  | 20A                 | 20CA  | 22.2                                                                                            | 24.5 | 1.0                                 | 20                                       | 1.0                                                                             | 46.3                                                             | 32.4                                                             |
| SMCJ22e3 / SMCJ22Ce3                    | 22                  | 22C   | 24.4                                                                                            | 29.8 | 1.0                                 | 22                                       | 1.0                                                                             | 38.1                                                             | 39.4                                                             |
| SMCJ22Ae3 / SMCJ22CAe3                  | 22A                 | 22CA  | 24.4                                                                                            | 26.9 | 1.0                                 | 22                                       | 1.0                                                                             | 42.3                                                             | 35.5                                                             |

(1) All ratings at 25°C unless specified otherwise

(2) V<sub>BR</sub> measured after I<sub>T</sub> applied for 300μs, I<sub>T</sub>=square wave pulse or equivalent

(3) Surge current waveform per Fig.3 and derated per Fig.2

(4) For bidirectional types with V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled

(5) For the bidirectional SMCJ5.0CA, the maximum V<sub>BR</sub> is 7.25V

## 1500W Transient Voltage Suppressor (TVS) protection device

### Electrical characteristics (cont.)<sup>(1)</sup>

| DEVICE                 | Device marking code |      | BREAKDOWN VOLTAGE <sup>(2)</sup> , V <sub>BR</sub><br>V <sub>BR</sub> (V) @ I <sub>T</sub> (mA) |      | TEST CURRENT I <sub>T</sub><br>(mA) | STAND-OFF VOLTAGE V <sub>WM</sub><br>(V) | MAXIMUM STANDBY CURRENT <sup>(4)</sup> I <sub>D</sub><br>(μA) @ V <sub>WM</sub> | MAXIMUM PEAK PULSE CURRENT <sup>(3)</sup> I <sub>PP</sub><br>(A) | MAXIMUM CLAMPING VOLTAGE V <sub>C</sub> (V)<br>@ I <sub>PP</sub> |
|------------------------|---------------------|------|-------------------------------------------------------------------------------------------------|------|-------------------------------------|------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
|                        | UNI                 | BI   | Min                                                                                             | Max  |                                     |                                          |                                                                                 |                                                                  |                                                                  |
| SMCJ24e3 / SMCJ24Ce3   | 24                  | 24C  | 26.7                                                                                            | 32.6 | 1.0                                 | 24                                       | 1.0                                                                             | 34.9                                                             | 43.0                                                             |
| SMCJ24Ae3 / SMCJ24CAe3 | 24A                 | 24CA | 26.7                                                                                            | 29.5 | 1.0                                 | 24                                       | 1.0                                                                             | 38.6                                                             | 38.9                                                             |
| SMCJ26e3 / SMCJ26Ce3   | 26                  | 26C  | 28.9                                                                                            | 35.3 | 1.0                                 | 26                                       | 1.0                                                                             | 32.2                                                             | 46.6                                                             |
| SMCJ26Ae3 / SMCJ26CAe3 | 26A                 | 26CA | 28.9                                                                                            | 31.9 | 1.0                                 | 26                                       | 1.0                                                                             | 35.6                                                             | 42.1                                                             |
| SMCJ28e3 / SMCJ28Ce3   | 28                  | 28C  | 31.1                                                                                            | 38.0 | 1.0                                 | 28                                       | 1.0                                                                             | 30.0                                                             | 50.0                                                             |
| SMCJ28Ae3 / SMCJ28CAe3 | 28A                 | 28CA | 31.1                                                                                            | 34.4 | 1.0                                 | 28                                       | 1.0                                                                             | 33.0                                                             | 45.4                                                             |
| SMCJ30e3 / SMCJ30Ce3   | 30                  | 30C  | 33.3                                                                                            | 40.7 | 1.0                                 | 30                                       | 1.0                                                                             | 28.0                                                             | 53.5                                                             |
| SMCJ30Ae3 / SMCJ30CAe3 | 30A                 | 30CA | 33.3                                                                                            | 36.8 | 1.0                                 | 30                                       | 1.0                                                                             | 31.0                                                             | 48.4                                                             |
| SMCJ33e3 / SMCJ33Ce3   | 33                  | 33C  | 36.7                                                                                            | 44.9 | 1.0                                 | 33                                       | 1.0                                                                             | 25.4                                                             | 59.0                                                             |
| SMCJ33Ae3 / SMCJ33CAe3 | 33A                 | 33CA | 36.7                                                                                            | 40.6 | 1.0                                 | 33                                       | 1.0                                                                             | 28.1                                                             | 53.3                                                             |
| SMCJ36e3 / SMCJ36Ce3   | 36                  | 36CA | 40.0                                                                                            | 48.9 | 1.0                                 | 36                                       | 1.0                                                                             | 23.3                                                             | 64.3                                                             |
| SMCJ36Ae3 / SMCJ36CAe3 | 36A                 | 36CA | 40.0                                                                                            | 44.2 | 1.0                                 | 36                                       | 1.0                                                                             | 25.8                                                             | 58.1                                                             |
| SMCJ40e3 / SMCJ40Ce3   | 40                  | 40C  | 44.4                                                                                            | 54.3 | 1.0                                 | 40                                       | 1.0                                                                             | 21.0                                                             | 71.4                                                             |
| SMCJ40Ae3 / SMCJ40CAe3 | 40A                 | 40CA | 44.4                                                                                            | 49.1 | 1.0                                 | 40                                       | 1.0                                                                             | 23.3                                                             | 64.5                                                             |
| SMCJ43e3 / SMCJ43Ce3   | 43                  | 43C  | 47.8                                                                                            | 58.4 | 1.0                                 | 43                                       | 1.0                                                                             | 19.6                                                             | 76.7                                                             |
| SMCJ43Ae3 / SMCJ43CAe3 | 43A                 | 43CA | 47.8                                                                                            | 52.8 | 1.0                                 | 43                                       | 1.0                                                                             | 21.6                                                             | 69.4                                                             |
| SMCJ45e3 / SMCJ45Ce3   | 45                  | 45C  | 50.0                                                                                            | 61.1 | 1.0                                 | 45                                       | 1.0                                                                             | 18.7                                                             | 80.3                                                             |
| SMCJ45Ae3 / SMCJ45CAe3 | 45A                 | 45CA | 50.0                                                                                            | 55.3 | 1.0                                 | 45                                       | 1.0                                                                             | 20.6                                                             | 72.7                                                             |
| SMCJ48e3 / SMCJ48Ce3   | 48                  | 48C  | 53.3                                                                                            | 65.1 | 1.0                                 | 48                                       | 1.0                                                                             | 17.5                                                             | 85.5                                                             |
| SMCJ48Ae3 / SMCJ48CAe3 | 48A                 | 48CA | 53.3                                                                                            | 58.9 | 1.0                                 | 48                                       | 1.0                                                                             | 19.4                                                             | 77.4                                                             |
| SMCJ51e3 / SMCJ51Ce3   | 51                  | 51C  | 56.7                                                                                            | 69.3 | 1.0                                 | 51                                       | 1.0                                                                             | 16.5                                                             | 91.1                                                             |
| SMCJ51Ae3 / SMCJ51CAe3 | 51A                 | 51CA | 56.7                                                                                            | 62.7 | 1.0                                 | 51                                       | 1.0                                                                             | 18.2                                                             | 82.4                                                             |
| SMCJ54e3 / SMCJ54Ce3   | 54                  | 54C  | 60.0                                                                                            | 73.3 | 1.0                                 | 54                                       | 1.0                                                                             | 15.6                                                             | 96.3                                                             |
| SMCJ54Ae3 / SMCJ54CAe3 | 54A                 | 54CA | 60.0                                                                                            | 66.3 | 1.0                                 | 54                                       | 1.0                                                                             | 17.2                                                             | 87.1                                                             |
| SMCJ58e3 / SMCJ58Ce3   | 58                  | 58C  | 64.4                                                                                            | 78.7 | 1.0                                 | 58                                       | 1.0                                                                             | 14.6                                                             | 103                                                              |
| SMCJ58Ae3 / SMCJ58CAe3 | 58A                 | 58CA | 64.4                                                                                            | 71.2 | 1.0                                 | 58                                       | 1.0                                                                             | 16.0                                                             | 93.6                                                             |
| SMCJ60e3 / SMCJ60Ce3   | 60                  | 60C  | 66.7                                                                                            | 81.5 | 1.0                                 | 60                                       | 1.0                                                                             | 14.0                                                             | 107                                                              |
| SMCJ60Ae3 / SMCJ60CAe3 | 60A                 | 60CA | 66.7                                                                                            | 73.7 | 1.0                                 | 60                                       | 1.0                                                                             | 15.5                                                             | 96.8                                                             |
| SMCJ64e3 / SMCJ64Ce3   | 64                  | 64C  | 71.1                                                                                            | 86.9 | 1.0                                 | 64                                       | 1.0                                                                             | 13.2                                                             | 114                                                              |
| SMCJ64Ae3 / SMCJ64CAe3 | 64A                 | 64CA | 71.1                                                                                            | 78.6 | 1.0                                 | 64                                       | 1.0                                                                             | 14.6                                                             | 103                                                              |
| SMCJ70e3 / SMCJ70Ce3   | 70                  | 70C  | 77.8                                                                                            | 95.1 | 1.0                                 | 70                                       | 1.0                                                                             | 12.0                                                             | 125                                                              |
| SMCJ70Ae3 / SMCJ70CAe3 | 70A                 | 70CA | 77.8                                                                                            | 86.0 | 1.0                                 | 70                                       | 1.0                                                                             | 13.3                                                             | 113                                                              |
| SMCJ75e3 / SMCJ75Ce3   | 75                  | 75C  | 83.3                                                                                            | 102  | 1.0                                 | 75                                       | 1.0                                                                             | 11.2                                                             | 134                                                              |
| SMCJ75Ae3 / SMCJ75CAe3 | 75A                 | 75CA | 83.3                                                                                            | 92.1 | 1.0                                 | 75                                       | 1.0                                                                             | 12.4                                                             | 121                                                              |
| SMCJ78e3 / SMCJ78Ce3   | 78                  | 78C  | 86.7                                                                                            | 106  | 1.0                                 | 78                                       | 1.0                                                                             | 10.8                                                             | 139                                                              |
| SMCJ78Ae3 / SMCJ78CAe3 | 78A                 | 78CA | 86.7                                                                                            | 95.8 | 1.0                                 | 78                                       | 1.0                                                                             | 11.9                                                             | 126                                                              |
| SMCJ85e3 / SMCJ85Ce3   | 85                  | 85C  | 94.4                                                                                            | 115  | 1.0                                 | 85                                       | 1.0                                                                             | 9.9                                                              | 151                                                              |
| SMCJ85Ae3 / SMCJ85CAe3 | 85A                 | 85CA | 94.4                                                                                            | 104  | 1.0                                 | 85                                       | 1.0                                                                             | 10.9                                                             | 137                                                              |

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(3) Surge current waveform per Fig.3 and derated per Fig.2

(4) For bidirectional types with V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled

## 1500W Transient Voltage Suppressor (TVS) protection device

### Electrical characteristics (cont.)<sup>(1)</sup>

| DEVICE                   | Device marking code |       | BREAKDOWN VOLTAGE <sup>(2)</sup> , V <sub>BR</sub><br>V <sub>BR</sub> (V) @ I <sub>T</sub> (mA) |     | TEST CURRENT I <sub>T</sub><br>(mA) | STAND-OFF VOLTAGE V <sub>WM</sub><br>(V) | MAXIMUM STANDBY CURRENT <sup>(4)</sup> I <sub>D</sub><br>(μA) @ V <sub>WM</sub> | MAXIMUM PEAK PULSE CURRENT <sup>(3)</sup> I <sub>PP</sub><br>(A) | MAXIMUM CLAMPING VOLTAGE V <sub>C</sub> (V)<br>@ I <sub>PP</sub> |
|--------------------------|---------------------|-------|-------------------------------------------------------------------------------------------------|-----|-------------------------------------|------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
|                          | UNI                 | BI    | Min                                                                                             | Max |                                     |                                          |                                                                                 |                                                                  |                                                                  |
| SMCJ90e3 / SMCJ90Ce3     | 90                  | 90C   | 100                                                                                             | 122 | 1.0                                 | 90                                       | 1.0                                                                             | 9.4                                                              | 160                                                              |
| SMCJ90Ae3 / SMCJ90CAe3   | 90A                 | 90CA  | 100                                                                                             | 111 | 1.0                                 | 90                                       | 1.0                                                                             | 10.3                                                             | 146                                                              |
| SMCJ100e3 / SMCJ100Ce3   | 100                 | 100C  | 111                                                                                             | 136 | 1.0                                 | 100                                      | 1.0                                                                             | 8.4                                                              | 179                                                              |
| SMCJ100Ae3 / SMCJ100CAe3 | 100A                | 100CA | 111                                                                                             | 123 | 1.0                                 | 100                                      | 1.0                                                                             | 9.3                                                              | 162                                                              |
| SMCJ110e3 / SMCJ110Ce3   | 110                 | 110C  | 122                                                                                             | 149 | 1.0                                 | 110                                      | 1.0                                                                             | 7.7                                                              | 196                                                              |
| SMCJ110Ae3 / SMCJ110CAe3 | 110A                | 110CA | 122                                                                                             | 135 | 1.0                                 | 110                                      | 1.0                                                                             | 8.5                                                              | 177                                                              |
| SMCJ120e3 / SMCJ120Ce3   | 120                 | 120C  | 133                                                                                             | 163 | 1.0                                 | 120                                      | 1.0                                                                             | 7.0                                                              | 214                                                              |
| SMCJ120Ae3 / SMCJ120CAe3 | 120A                | 120CA | 133                                                                                             | 147 | 1.0                                 | 120                                      | 1.0                                                                             | 7.8                                                              | 193                                                              |
| SMCJ130e3 / SMCJ130Ce3   | 130                 | 130C  | 144                                                                                             | 176 | 1.0                                 | 130                                      | 1.0                                                                             | 6.5                                                              | 231                                                              |
| SMCJ130Ae3 / SMCJ130CAe3 | 130A                | 130CA | 144                                                                                             | 159 | 1.0                                 | 130                                      | 1.0                                                                             | 7.2                                                              | 209                                                              |
| SMCJ150e3 / SMCJ150Ce3   | 150                 | 150C  | 167                                                                                             | 204 | 1.0                                 | 150                                      | 1.0                                                                             | 5.6                                                              | 268                                                              |
| SMCJ150Ae3 / SMCJ150CAe3 | 150A                | 150CA | 167                                                                                             | 185 | 1.0                                 | 150                                      | 1.0                                                                             | 6.2                                                              | 243                                                              |
| SMCJ160e3 / SMCJ160Ce3   | 160                 | 160C  | 178                                                                                             | 218 | 1.0                                 | 160                                      | 1.0                                                                             | 5.2                                                              | 287                                                              |
| SMCJ160Ae3 / SMCJ160CAe3 | 160A                | 160CA | 178                                                                                             | 197 | 1.0                                 | 160                                      | 1.0                                                                             | 5.8                                                              | 259                                                              |
| SMCJ170e3 / SMCJ170Ce3   | 170                 | 170C  | 189                                                                                             | 231 | 1.0                                 | 170                                      | 1.0                                                                             | 4.9                                                              | 304                                                              |
| SMCJ170Ae3 / SMCJ170CAe3 | 170A                | 170CA | 189                                                                                             | 209 | 1.0                                 | 170                                      | 1.0                                                                             | 5.5                                                              | 275                                                              |
| SMCJ180Ae3 / SMCJ180CAe3 | 180A                | 180CA | 201                                                                                             | 222 | 1.0                                 | 180                                      | 1.0                                                                             | 5.0                                                              | 292                                                              |
| SMCJ200Ae3 / SMCJ200CAe3 | 200A                | 200CA | 224                                                                                             | 247 | 1.0                                 | 200                                      | 1.0                                                                             | 4.6                                                              | 324                                                              |
| SMCJ220Ae3 / SMCJ220CAe3 | 220A                | 220CA | 246                                                                                             | 272 | 1.0                                 | 220                                      | 1.0                                                                             | 4.2                                                              | 356                                                              |
| SMCJ250Ae3 / SMCJ250CAe3 | 250A                | 250CA | 279                                                                                             | 309 | 1.0                                 | 250                                      | 1.0                                                                             | 3.7                                                              | 405                                                              |
| SMCJ300Ae3 / SMCJ300CAe3 | 300A                | 300CA | 335                                                                                             | 371 | 1.0                                 | 300                                      | 1.0                                                                             | 3.1                                                              | 486                                                              |
| SMCJ350Ae3 / SMCJ350CAe3 | 350A                | 350CA | 391                                                                                             | 432 | 1.0                                 | 350                                      | 1.0                                                                             | 2.6                                                              | 567                                                              |
| SMCJ400Ae3 / SMCJ400CAe3 | 400A                | 400CA | 447                                                                                             | 494 | 1.0                                 | 400                                      | 1.0                                                                             | 2.3                                                              | 648                                                              |
| SMCJ440Ae3 / SMCJ440CAe3 | 440A                | 440CA | 492                                                                                             | 543 | 1.0                                 | 440                                      | 1.0                                                                             | 2.1                                                              | 713                                                              |

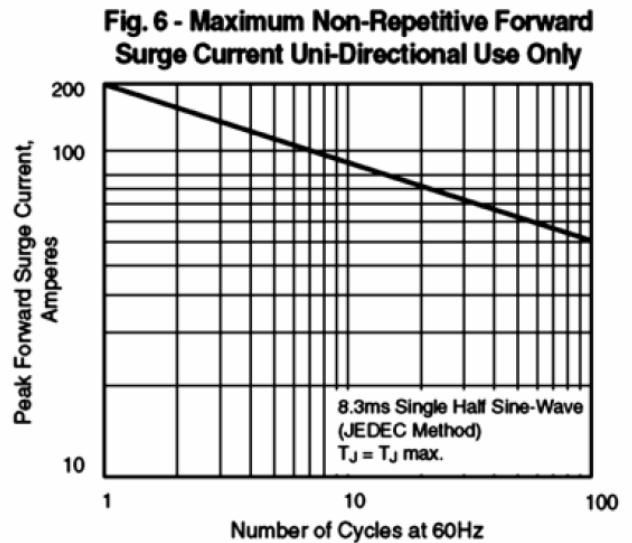
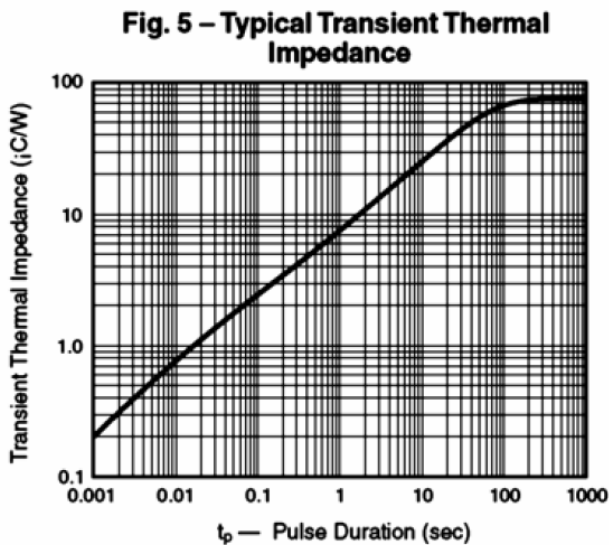
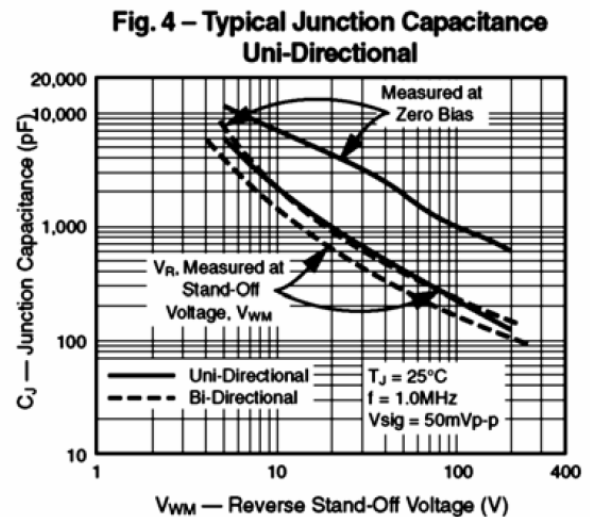
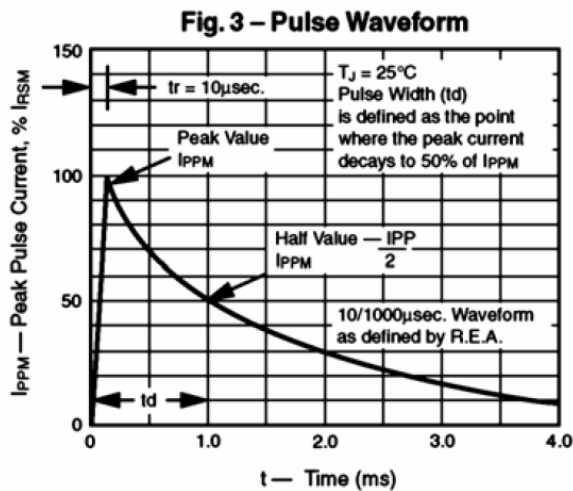
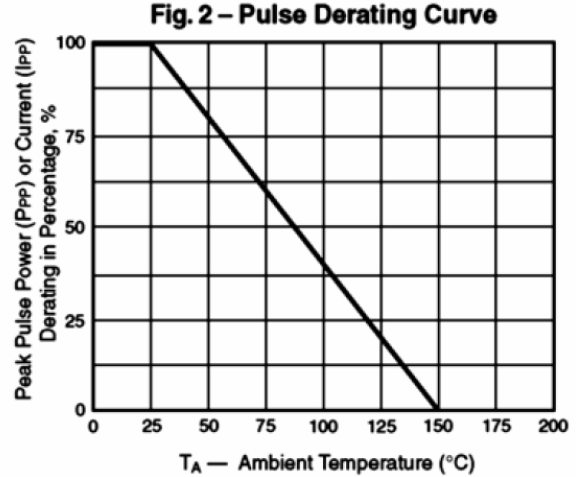
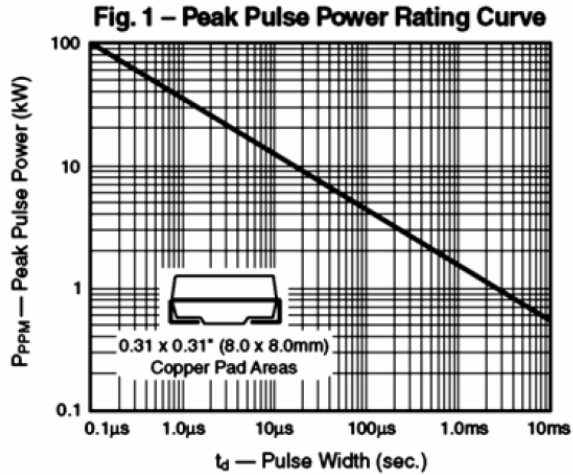
(1) All ratings at 25°C unless specified otherwise

(2) V<sub>BR</sub> measured after I<sub>T</sub> applied for 300μs, I<sub>T</sub>=square wave pulse or equivalent

(3) Surge current waveform per Fig.3 and derated per Fig.2

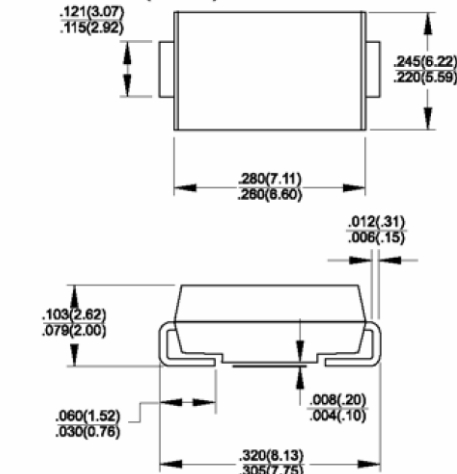
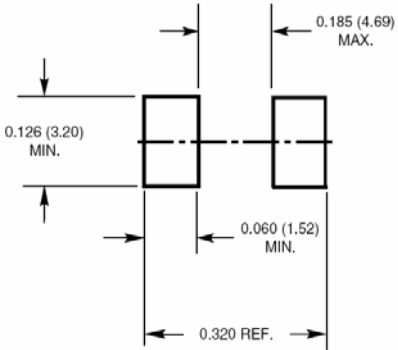
(4) For bidirectional types with V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled

## 1500W Transient Voltage Suppressor (TVS) protection device



## 1500W Transient Voltage Suppressor (TVS) protection device

### Mechanical Characteristics

| Physical dimensions                                                                                                                                          | Footprint dimensions                                                                                                  | Package materials & information                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>DO-214AB (SMC)</b></p>  <p>Dimensions in inches and (millimeters)</p> | <p><b>Mounting Pad Layout</b></p>  | <p><b>Case :</b> Epoxy meets UL94V-0</p> <p><b>Electrode finish :</b><br/>Matte Sn plating - fully RoHS compliant</p> <p><b>Terminals :</b> solderable per MIL-STD-750, Method 2026</p> <p><b>Marking code :</b> See electrical characteristics table and example below:</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;">             XXXe3<br/>MSC D/C           </div> <p>D/C is the date code</p> |

**POLARITY :** For unidirectional types the color band denotes the cathode, which is positive with respect to the anode under normal TVS operation.

### Ordering information

| Product order code                                                                   | Package        | Weight            | Base qty | Delivery mode           |
|--------------------------------------------------------------------------------------|----------------|-------------------|----------|-------------------------|
| <b>SMCJxxxxe3/TR13</b><br><br>For example :<br>SMCJ6.0CAe3/TR13 or<br>SMCJ15Ae3/TR13 | DO-214AB (SMC) | 0.007oz.<br>0.21g | 3000     | Tape and reel (13 inch) |

Commercial Business Unit  
Microsemi Corporation

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Avenida Doutor Mario Soares  
Bank of China Building, 18/F, Unit D  
Macau SAR

Please refer to [www.microsemi.com](http://www.microsemi.com) for the terms and conditions of purchase