

**SURFACE MOUNT GPP  
TRANSIENT VOLTAGE SUPPRESSOR  
1500 WATT PEAK POWER 6.5 WATTS STEADY STATE**

**FEATURES**

- \* Plastic package has underwriters laboratory
- \* Glass passivated chip construction
- \* 1500 watt surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.



DO-214AB



Dimensions in inches and (millimeters)

**DEVICES FOR BIPOLAR APPLICATIONS**

For Bidirectional use C or CA suffix for types TFMCJ5.0 thru TFMCJ170

Electrical characteristics apply in both direction

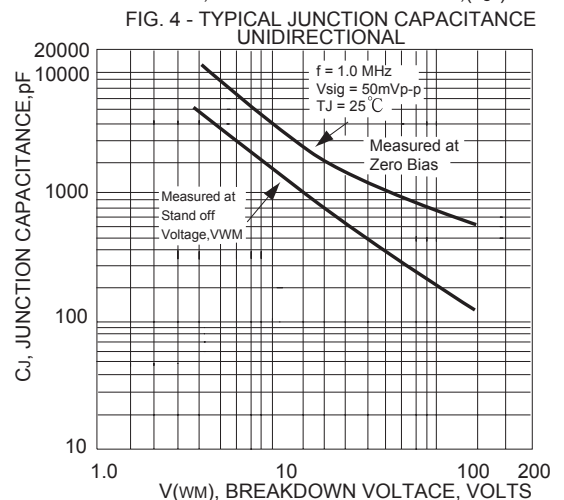
MAXIMUM RATINGS (At TA = 25°C unless otherwise noted)

| RATINGS   | SYMBOL   | VALUE        | UNITS |
|---|----------|--------------|-------|
| Peak Power Dissipation with a 10/1000uS (Note 1,2, Fig.1)   | PPPM     | Minimum 1500 | Watts |
| Peak Pulse Current with a 10/1000uS waveform ( Note 1, Fig.3 )  | IPPM     | SEE TABLE 1  | Amps  |
| Steady State Power Dissipation at TL = 75°C (Note 2)  | PM(AV)   | 6.5          | Watts |
| Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method) (Note 3,4) unidirectional only | IFSM     | 200          | Amps  |
| Maximum Instantaneous Forward Voltage at 100A for unidirectional only   | VF       | SEE NOTE 5   | Volts |
| Operating and Storage Temperature Range   | TJ, TSTG | -55 to + 150 | °C    |
| Thermal Resistance Junction to Ambient Air  | RqJA     | 75           | °C/W  |
| Thermal Resistance Junction to Leads  | RqJL     | 15           | °C/W  |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig.2.
2. Mounted on 0.31 X 0.31" ( 8.0 X 8.0mm) copper pad to each terminal.
3. Lead temperature at TL = 25°C
4. Measured on 8.3mS single half sine-wave duty cycle = 4 pules per minute maximum.
5. Vf = 3.5V on TFMCJ-5.0 thru TFMCJ-90 devices and Vf = 5.0V on TFMCJ-100 thru TFMCJ-170 devices.
- 6 "Fully ROHS compliant", "100% Sn plating(Pb-free).

# RATING AND CHARACTERISTIC CURVES (TFMCJ5.0 THRU TFMCJ170CA)



# TRANSIENT VOLTAGE SUPPRESSORS

1500W SERIES TVS DIODES/DO-214AB ( CASE 4 ) 1500W

| Rectron Industry No. | Rectron House No. | Breakdown Voltage |      |          | Reverse Stand off Voltage VWM (Volts) | Maximum Reverse Leakage at VWM ID(uA) | Maximum Peak Pulse Current IPPM (Amps) | Maximum Clamping Voltage at IPPM VC (Volts) |
|----------------------|-------------------|-------------------|------|----------|---------------------------------------|---------------------------------------|--|---|
|                      |                   | VBR (Volts)       |      | @IT (mA) |                                       |                                       |  |   |
|                      |                   | MIN.              | MAX. |          |                                       |                                       |  |   |
| SMCJ5.0              | TFMCJ5.0          | 6.40              | 7.82 | 10       | 5.0                                   | 1000                                  | 156.3                                  | 9.6   |
| SMCJ5.0A             | TFMCJ5.0A         | 6.40              | 7.07 | 10       | 5.0                                   | 1000                                  | 163.0                                  | 9.2   |
| SMCJ6.0              | TFMCJ6.0          | 6.67              | 8.15 | 10       | 6.0                                   | 1000                                  | 131.6                                  | 11.4  |
| SMCJ6.0A             | TFMCJ6.0A         | 6.67              | 7.37 | 10       | 6.0                                   | 1000                                  | 145.6                                  | 10.3  |
| SMCJ6.5              | TFMCJ6.5          | 7.22              | 8.82 | 10       | 6.5                                   | 500.0                                 | 122.0                                  | 12.3  |
| SMCJ6.5A             | TFMCJ6.5A         | 7.22              | 7.98 | 10       | 6.5                                   | 500.0                                 | 133.9                                  | 11.2  |
| SMCJ7.0              | TFMCJ7.0          | 7.78              | 9.51 | 10       | 7.0                                   | 200.0                                 | 112.8                                  | 13.3  |
| SMCJ7.0A             | TFMCJ7.0A         | 7.78              | 8.60 | 10       | 7.0                                   | 200.0                                 | 125.0                                  | 12.0  |
| SMCJ7.5              | TFMCJ7.5          | 8.33              | 10.2 | 10       | 7.5                                   | 100.0                                 | 104.9                                  | 14.3  |
| SMCJ7.5A             | TFMCJ7.5A         | 8.33              | 9.21 | 1.0      | 7.5                                   | 100.0                                 | 116.3                                  | 12.9  |
| SMCJ8.0              | TFMCJ8.0          | 8.89              | 10.9 | 1.0      | 8.0                                   | 50.0                                  | 100.0                                  | 15.0  |
| SMCJ8.0A             | TFMCJ8.0A         | 8.89              | 9.83 | 1.0      | 8.0                                   | 50.0                                  | 110.3                                  | 13.6  |
| SMCJ8.5              | TFMCJ8.5          | 9.44              | 11.5 | 1.0      | 8.5                                   | 25                                    | 94.3                                   | 15.9  |
| SMCJ8.5A             | TFMCJ8.5A         | 9.44              | 10.4 | 1.0      | 8.5                                   | 25                                    | 104.2                                  | 14.4  |
| SMCJ9.0              | TFMCJ9.0          | 10.0              | 12.2 | 1.0      | 9.0                                   | 10                                    | 88.8                                   | 16.9  |
| SMCJ9.0A             | TFMCJ9.0A         | 10.0              | 11.1 | 1.0      | 9.0                                   | 10                                    | 97.4                                   | 15.4  |
| SMCJ10               | TFMCJ10           | 11.1              | 13.6 | 1.0      | 10.0                                  | 5.0                                   | 79.8                                   | 18.8  |
| SMCJ10A              | TFMCJ10A          | 11.1              | 12.3 | 1.0      | 10.0                                  | 5.0                                   | 88.2                                   | 17.0  |
| SMCJ11               | TFMCJ11           | 12.2              | 14.9 | 1.0      | 11.0                                  | 5.0                                   | 74.6                                   | 20.1  |
| SMCJ11A              | TFMCJ11A          | 12.2              | 13.5 | 1.0      | 11.0                                  | 5.0                                   | 82.4                                   | 18.2  |
| SMCJ12               | TFMCJ12           | 13.3              | 16.3 | 1.0      | 12.0                                  | 5.0                                   | 68.2                                   | 22.0  |
| SMCJ12A              | TFMCJ12A          | 13.3              | 14.7 | 1.0      | 12.0                                  | 5.0                                   | 75.4                                   | 19.9  |
| SMCJ13               | TFMCJ13           | 14.4              | 17.6 | 1.0      | 13.0                                  | 5.0                                   | 63.0                                   | 23.8  |
| SMCJ13A              | TFMCJ13A          | 14.4              | 15.9 | 1.0      | 13.0                                  | 5.0                                   | 69.8                                   | 21.5  |
| SMCJ14               | TFMCJ14           | 15.6              | 19.1 | 1.0      | 14.0                                  | 5.0                                   | 58.1                                   | 25.8  |
| SMCJ14A              | TFMCJ14A          | 15.6              | 17.2 | 1.0      | 14.0                                  | 5.0                                   | 64.7                                   | 23.2  |
| SMCJ15               | TFMCJ15           | 16.7              | 20.4 | 1.0      | 15.0                                  | 5.0                                   | 55.8                                   | 26.9  |
| SMCJ15A              | TFMCJ15A          | 16.7              | 18.5 | 1.0      | 15.0                                  | 5.0                                   | 61.5                                   | 24.4  |
| SMCJ16               | TFMCJ16           | 17.8              | 21.8 | 1.0      | 16.0                                  | 5.0                                   | 52.1                                   | 28.8  |
| SMCJ16A              | TFMCJ16A          | 17.8              | 19.7 | 1.0      | 16.0                                  | 5.0                                   | 57.7                                   | 26.0  |
| SMCJ17               | TFMCJ17           | 18.9              | 23.1 | 1.0      | 17.0                                  | 5.0                                   | 49.2                                   | 30.5  |
| SMCJ17A              | TFMCJ17A          | 18.9              | 20.9 | 1.0      | 17.0                                  | 5.0                                   | 54.3                                   | 27.6  |
| SMCJ18               | TFMCJ18           | 20.0              | 24.4 | 1.0      | 18.0                                  | 5.0                                   | 46.6                                   | 32.2  |
| SMCJ18A              | TFMCJ18A          | 20.0              | 22.1 | 1.0      | 18.0                                  | 5.0                                   | 51.4                                   | 29.2  |
| SMCJ20               | TFMCJ20           | 22.2              | 27.1 | 1.0      | 20.0                                  | 5.0                                   | 41.9                                   | 35.8  |
| SMCJ20A              | TFMCJ20A          | 22.2              | 24.5 | 1.0      | 20.0                                  | 5.0                                   | 46.3                                   | 32.4  |
| SMCJ22               | TFMCJ22           | 24.4              | 29.8 | 1.0      | 22.0                                  | 5.0                                   | 38.1                                   | 39.4  |
| SMCJ22A              | TFMCJ22A          | 24.4              | 26.9 | 1.0      | 22.0                                  | 5.0                                   | 42.3                                   | 35.5  |
| SMCJ24               | TFMCJ24           | 26.7              | 32.6 | 1.0      | 24.0                                  | 5.0                                   | 34.9                                   | 43.0  |
| SMCJ24A              | TFMCJ24A          | 26.7              | 29.5 | 1.0      | 24.0                                  | 5.0                                   | 38.6                                   | 38.9  |
| SMCJ26               | TFMCJ26           | 28.9              | 35.3 | 1.0      | 26.0                                  | 5.0                                   | 32.2                                   | 46.6  |
| SMCJ26A              | TFMCJ26A          | 28.9              | 31.9 | 1.0      | 26.0                                  | 5.0                                   | 35.6                                   | 42.1  |
| SMCJ28               | TFMCJ28           | 31.1              | 38.0 | 1.0      | 28.0                                  | 5.0                                   | 30.0                                   | 50.1  |
| SMCJ28A              | TFMCJ28A          | 31.1              | 34.4 | 1.0      | 28.0                                  | 5.0                                   | 33.0                                   | 45.4  |
| SMCJ30               | TFMCJ30           | 33.3              | 40.7 | 1.0      | 30.0                                  | 5.0                                   | 28.0                                   | 53.5  |
| SMCJ30A              | TFMCJ30A          | 33.3              | 36.8 | 1.0      | 30.0                                  | 5.0                                   | 31.0                                   | 48.4  |
| SMCJ33               | TFMCJ33           | 36.7              | 44.9 | 1.0      | 33.0                                  | 5.0                                   | 25.4                                   | 59.0  |
| SMCJ33A              | TFMCJ33A          | 36.7              | 40.6 | 1.0      | 33.0                                  | 5.0                                   | 28.1                                   | 53.3  |
| SMCJ36               | TFMCJ36           | 40.0              | 48.9 | 1.0      | 36.0                                  | 5.0                                   | 23.3                                   | 64.3  |
| SMCJ36A              | TFMCJ36A          | 40.0              | 44.2 | 1.0      | 36.0                                  | 5.0                                   | 25.8                                   | 58.1  |

# TRANSIENT VOLTAGE SUPPRESSORS

1500W SERIES TVS DIODES/DO-214AB ( CASE 4 ) 1500W

| Rectron Industry No. | Rectron House No. | Breakdown Voltage       |      |                      | Reverse Stand off Voltage V <sub>WM</sub> (Volts) | Maximum Reverse Leakage at V <sub>WM</sub> I <sub>D</sub> (uA) | Maximum Peak Pulse Current IPPM (Amps) | Maximum Clamping Voltage at IPPM V <sub>C</sub> (Volts) |
|----------------------|-------------------|-------------------------|------|----------------------|---|--|--|---|
|                      |                   | V <sub>BR</sub> (Volts) |      | @I <sub>T</sub> (mA) |   |  |  |   |
|                      |                   | MIN.                    | MAX. |                      |   |  |  |   |
| SMCJ40               | TFMCJ40           | 44.4                    | 54.3 | 1.0                  | 40  | 5.0  | 21.0                                   | 71.4  |
| SMCJ40A              | TFMCJ40A          | 44.4                    | 49.1 | 1.0                  | 40  | 5.0  | 23.3                                   | 64.5  |
| SMCJ43               | TFMCJ43           | 47.8                    | 58.4 | 1.0                  | 43  | 5.0  | 19.6                                   | 76.7  |
| SMCJ43A              | TFMCJ43A          | 47.8                    | 52.8 | 1.0                  | 43  | 5.0  | 21.6                                   | 69.4  |
| SMCJ45               | TFMCJ45           | 50.0                    | 61.1 | 1.0                  | 45  | 5.0  | 18.7                                   | 80.3  |
| SMCJ45A              | TFMCJ45A          | 50.0                    | 55.3 | 1.0                  | 45  | 5.0  | 20.6                                   | 72.7  |
| SMCJ48               | TFMCJ48           | 53.3                    | 65.1 | 1.0                  | 48  | 5.0  | 17.5                                   | 85.5  |
| SMCJ48A              | TFMCJ48A          | 53.3                    | 58.9 | 1.0                  | 48  | 5.0  | 19.4                                   | 77.4  |
| SMCJ51               | TFMCJ51           | 56.7                    | 69.3 | 1.0                  | 51  | 5.0  | 16.5                                   | 91.1  |
| SMCJ51A              | TFMCJ51A          | 56.7                    | 62.7 | 1.0                  | 51  | 5.0  | 18.2                                   | 82.4  |
| SMCJ54               | TFMCJ54           | 60.0                    | 73.3 | 1.0                  | 54  | 5.0  | 15.6                                   | 96.3  |
| SMCJ54A              | TFMCJ54A          | 60.0                    | 66.3 | 1.0                  | 54  | 5.0  | 17.2                                   | 87.1  |
| SMCJ58               | TFMCJ58           | 64.4                    | 78.7 | 1.0                  | 58  | 5.0  | 14.6                                   | 103   |
| SMCJ58A              | TFMCJ58A          | 64.4                    | 71.2 | 1.0                  | 58  | 5.0  | 16.0                                   | 93  |
| SMCJ60               | TFMCJ60           | 66.7                    | 81.5 | 1.0                  | 60  | 5.0  | 14.0                                   | 107   |
| SMCJ60A              | TFMCJ60A          | 66.7                    | 73.7 | 1.0                  | 60  | 5.0  | 15.5                                   | 96  |
| SMCJ64               | TFMCJ64           | 71.1                    | 86.9 | 1.0                  | 64  | 5.0  | 13.2                                   | 114   |
| SMCJ64A              | TFMCJ64A          | 71.1                    | 78.6 | 1.0                  | 64  | 5.0  | 14.6                                   | 103   |
| SMCJ70               | TFMCJ70           | 77.8                    | 95.1 | 1.0                  | 70  | 5.0  | 12.0                                   | 125   |
| SMCJ70A              | TFMCJ70A          | 77.8                    | 86.0 | 1.0                  | 70  | 5.0  | 13.3                                   | 113   |
| SMCJ75               | TFMCJ75           | 83.3                    | 102  | 1.0                  | 75  | 5.0  | 11.2                                   | 134   |
| SMCJ75A              | TFMCJ75A          | 83.3                    | 92.1 | 1.0                  | 75  | 5.0  | 12.4                                   | 121   |
| SMCJ78               | TFMCJ78           | 86.7                    | 106  | 1.0                  | 78  | 5.0  | 10.8                                   | 139   |
| SMCJ78A              | TFMCJ78A          | 86.7                    | 95.8 | 1.0                  | 78  | 5.0  | 11.9                                   | 126   |
| SMCJ85               | TFMCJ85           | 94.4                    | 115  | 1.0                  | 85  | 5.0  | 9.9                                    | 151   |
| SMCJ85A              | TFMCJ85A          | 94.4                    | 104  | 1.0                  | 85  | 5.0  | 10.9                                   | 137   |
| SMCJ90               | TFMCJ90           | 100                     | 122  | 1.0                  | 90  | 5.0  | 9.4                                    | 160   |
| SMCJ90A              | TFMCJ90A          | 100                     | 111  | 1.0                  | 90  | 5.0  | 10.3                                   | 146   |
| SMCJ100              | TFMCJ100          | 111                     | 136  | 1.0                  | 100   | 5.0  | 8.4                                    | 179   |
| SMCJ100A             | TFMCJ100A         | 111                     | 123  | 1.0                  | 100   | 5.0  | 9.3                                    | 162   |
| SMCJ110              | TFMCJ110          | 122                     | 149  | 1.0                  | 110   | 5.0  | 7.7                                    | 196   |
| SMCJ110A             | TFMCJ110A         | 122                     | 135  | 1.0                  | 110   | 5.0  | 8.5                                    | 177   |
| SMCJ120              | TFMCJ120          | 133                     | 163  | 1.0                  | 120   | 5.0  | 7.0                                    | 214   |
| SMCJ120A             | TFMCJ120A         | 133                     | 147  | 1.0                  | 120   | 5.0  | 7.8                                    | 193   |
| SMCJ130              | TFMCJ130          | 144                     | 176  | 1.0                  | 130   | 5.0  | 6.5                                    | 231   |
| SMCJ130A             | TFMCJ130A         | 144                     | 159  | 1.0                  | 130   | 5.0  | 7.2                                    | 209   |
| SMCJ150              | TFMCJ150          | 167                     | 204  | 1.0                  | 150   | 5.0  | 5.6                                    | 268   |
| SMCJ150A             | TFMCJ150A         | 167                     | 185  | 1.0                  | 150   | 5.0  | 6.2                                    | 243   |
| SMCJ160              | TFMCJ160          | 178                     | 218  | 1.0                  | 160   | 5.0  | 5.2                                    | 287   |
| SMCJ160A             | TFMCJ160A         | 178                     | 197  | 1.0                  | 160   | 5.0  | 5.8                                    | 259   |
| SMCJ170              | TFMCJ170          | 189                     | 231  | 1.0                  | 170   | 5.0  | 4.9                                    | 304   |
| SMCJ170A             | TFMCJ170A         | 189                     | 209  | 1.0                  | 170   | 5.0  | 5.5                                    | 275   |

- Notes :
1. V<sub>BR</sub> measured after I<sub>T</sub> applied for 300ms. I<sub>T</sub> = square pulse or equivalent.
  2. For bidirectional use C or CA suffixs for all types (ex. SMCJ5.0C, SMCJ170CA) electrical characteristics apply in both directions.
  3. For bidirectional types having V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled.
  4. All devices UL listed file# E211196.

## Mounting Pad Layout



Dimensions in inches and (millimeters)

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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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