

### Features

Peak power dissipation 1500W@10 x 1000 us Pulse  
Low incremental surge resistance  
Excellent clamping capability  
Glass passivated junction  
Fast response time  
Low leakage current  
Halogen free and RoHS compliant

### Applications

CASE: SMCJ(DO-214AB) Molded Plastic  
Polarity: By cathode band denotes uni-directional device,  
none cathode band denotes bi-directional device  
Mounting Position: Any

### Dimensions and Pin Configuration



### Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

| Parameter                                      | Symbol          | Value      | Units | Remarks        |
|------------------------------------------------|-----------------|------------|-------|----------------|
| Peak Pulse Power Dissipation                   | $P_{PPM}$       | 1500       | W     | (Note1)(Note2) |
| Steady State Power Dissipation                 | $P_D$           | 6.5        | W     | (Note3)        |
| Peak Forward Surge Current                     | $I_{FSM}$       | 200        | A     | (Note4)        |
| Maximum Instantaneous Forward Voltage at 100A  | $V_{FM}$        | 3.5/5      | V     | (Note5)        |
| Typical Thermal Resistance Junction to Lead    | $R_{\theta JL}$ | 15         | °C/W  |                |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 75         | °C/W  |                |
| Operating Temperature Range                    | $T_J$           | -55 to 150 | °C    |                |
| Storage Temperature Range                      | $T_{STG}$       | -55 to 150 | °C    |                |

**Electrical Characteristics** (Ratings at 25 °C ambient temperature unless otherwise specified).

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| Part Number<br>(Uni) | Part Number<br>(Bi) | Reverse<br>Stand off<br>Voltage V <sub>R</sub><br>(V) | Breakdown<br>Voltage V <sub>BR</sub><br>@ I <sub>T</sub> (V) |      | Test<br>Current I <sub>T</sub><br>(mA) | Maximum<br>Clamping<br>Voltage V <sub>C</sub> @<br>I <sub>PP</sub> (V) | Maximum<br>Peak Pulse<br>Current<br>I <sub>PP</sub> (A) | Maximum<br>Reverse<br>Leakage<br>I <sub>R</sub> @ V <sub>R</sub> (μA) |
|----------------------|---------------------|-------------------------------------------------------|--------------------------------------------------------------|------|----------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|
|                      |                     |                                                       | Min                                                          | Max  |                                        |                                                                        |                                                         |                                                                       |
| TPSMCJ5.0A           | TPSMCJ5.0CA         | 5                                                     | 6.4                                                          | 7    | 10                                     | 9.2                                                                    | 163                                                     | 500                                                                   |
| TPSMCJ6.0A           | TPSMCJ6.0CA         | 6                                                     | 6.67                                                         | 7.37 | 10                                     | 10.3                                                                   | 145.7                                                   | 500                                                                   |
| TPSMCJ6.5A           | TPSMCJ6.5CA         | 6.5                                                   | 7.22                                                         | 7.98 | 10                                     | 11.2                                                                   | 134                                                     | 300                                                                   |
| TPSMCJ7.0A           | TPSMCJ7.0CA         | 7                                                     | 7.78                                                         | 8.6  | 10                                     | 12                                                                     | 125                                                     | 200                                                                   |
| TPSMCJ7.5A           | TPSMCJ7.5CA         | 7.5                                                   | 8.33                                                         | 9.21 | 1                                      | 12.9                                                                   | 116.3                                                   | 100                                                                   |
| TPSMCJ8.0A           | TPSMCJ8.0CA         | 8                                                     | 8.89                                                         | 9.83 | 1                                      | 13.6                                                                   | 110.3                                                   | 50                                                                    |
| TPSMCJ8.5A           | TPSMCJ8.5CA         | 8.5                                                   | 9.44                                                         | 10.4 | 1                                      | 14.4                                                                   | 104.2                                                   | 20                                                                    |
| TPSMCJ9.0A           | TPSMCJ9.0CA         | 9                                                     | 10                                                           | 11.1 | 1                                      | 15.4                                                                   | 97.4                                                    | 10                                                                    |
| TPSMCJ10A            | TPSMCJ10CA          | 10                                                    | 11.1                                                         | 12.3 | 1                                      | 17                                                                     | 88.3                                                    | 5                                                                     |
| TPSMCJ11A            | TPSMCJ11CA          | 11                                                    | 12.2                                                         | 13.5 | 1                                      | 18.2                                                                   | 82.5                                                    | 1                                                                     |
| TPSMCJ12A            | TPSMCJ12CA          | 12                                                    | 13.3                                                         | 14.7 | 1                                      | 19.9                                                                   | 75.4                                                    | 1                                                                     |
| TPSMCJ13A            | TPSMCJ13CA          | 13                                                    | 14.4                                                         | 15.9 | 1                                      | 21.5                                                                   | 69.8                                                    | 1                                                                     |
| TPSMCJ14A            | TPSMCJ14CA          | 14                                                    | 15.6                                                         | 17.2 | 1                                      | 23.2                                                                   | 64.7                                                    | 1                                                                     |
| TPSMCJ15A            | TPSMCJ15CA          | 15                                                    | 16.7                                                         | 18.5 | 1                                      | 24.4                                                                   | 61.5                                                    | 1                                                                     |
| TPSMCJ16A            | TPSMCJ16CA          | 16                                                    | 17.8                                                         | 19.7 | 1                                      | 26                                                                     | 57.7                                                    | 1                                                                     |
| TPSMCJ17A            | TPSMCJ17CA          | 17                                                    | 18.9                                                         | 20.9 | 1                                      | 27.6                                                                   | 54.4                                                    | 1                                                                     |
| TPSMCJ18A            | TPSMCJ18CA          | 18                                                    | 20                                                           | 22.1 | 1                                      | 29.2                                                                   | 51.4                                                    | 1                                                                     |
| TPSMCJ20A            | TPSMCJ20CA          | 20                                                    | 22.2                                                         | 24.5 | 1                                      | 32.4                                                                   | 46.3                                                    | 1                                                                     |
| TPSMCJ22A            | TPSMCJ22CA          | 22                                                    | 24.4                                                         | 26.9 | 1                                      | 35.5                                                                   | 42.3                                                    | 1                                                                     |
| TPSMCJ24A            | TPSMCJ24CA          | 24                                                    | 26.7                                                         | 29.5 | 1                                      | 38.9                                                                   | 38.6                                                    | 1                                                                     |
| TPSMCJ26A            | TPSMCJ26CA          | 26                                                    | 28.9                                                         | 31.9 | 1                                      | 42.1                                                                   | 35.7                                                    | 1                                                                     |
| TPSMCJ28A            | TPSMCJ28CA          | 28                                                    | 31.1                                                         | 34.4 | 1                                      | 45.4                                                                   | 33.1                                                    | 1                                                                     |
| TPSMCJ30A            | TPSMCJ30CA          | 30                                                    | 33.3                                                         | 36.8 | 1                                      | 48.4                                                                   | 31                                                      | 1                                                                     |
| TPSMCJ33A            | TPSMCJ33CA          | 33                                                    | 36.7                                                         | 40.6 | 1                                      | 53.3                                                                   | 28.2                                                    | 1                                                                     |
| TPSMCJ36A            | TPSMCJ36CA          | 36                                                    | 40                                                           | 44.2 | 1                                      | 58.1                                                                   | 25.9                                                    | 1                                                                     |
| TPSMCJ40A            | TPSMCJ40CA          | 40                                                    | 44.4                                                         | 49.1 | 1                                      | 64.5                                                                   | 23.3                                                    | 1                                                                     |
| TPSMCJ43A            | TPSMCJ43CA          | 43                                                    | 47.8                                                         | 52.8 | 1                                      | 69.4                                                                   | 21.7                                                    | 1                                                                     |
| TPSMCJ45A            | TPSMCJ45CA          | 45                                                    | 50                                                           | 55.3 | 1                                      | 72.7                                                                   | 20.6                                                    | 1                                                                     |
| TPSMCJ48A            | TPSMCJ48CA          | 48                                                    | 53.3                                                         | 58.9 | 1                                      | 77.4                                                                   | 19.4                                                    | 1                                                                     |
| TPSMCJ51A            | TPSMCJ51CA          | 51                                                    | 56.7                                                         | 62.7 | 1                                      | 82.4                                                                   | 18.2                                                    | 1                                                                     |
| TPSMCJ54A            | TPSMCJ54CA          | 54                                                    | 60                                                           | 66.3 | 1                                      | 87.1                                                                   | 17.3                                                    | 1                                                                     |
| TPSMCJ58A            | TPSMCJ58CA          | 58                                                    | 64.4                                                         | 71.2 | 1                                      | 93.6                                                                   | 16.1                                                    | 1                                                                     |
| TPSMCJ60A            | TPSMCJ60CA          | 60                                                    | 66.7                                                         | 73.7 | 1                                      | 96.8                                                                   | 15.5                                                    | 1                                                                     |
| TPSMCJ64A            | TPSMCJ64CA          | 64                                                    | 71.1                                                         | 78.6 | 1                                      | 103                                                                    | 14.6                                                    | 1                                                                     |
| TPSMCJ70A            | TPSMCJ70CA          | 70                                                    | 77.8                                                         | 86   | 1                                      | 113                                                                    | 13.3                                                    | 1                                                                     |
| TPSMCJ75A            | TPSMCJ75CA          | 75                                                    | 83.3                                                         | 92.1 | 1                                      | 121                                                                    | 12.4                                                    | 1                                                                     |
| TPSMCJ78A            | TPSMCJ78CA          | 78                                                    | 86.7                                                         | 95.8 | 1                                      | 126                                                                    | 11.9                                                    | 1                                                                     |
| TPSMCJ85A            | TPSMCJ85CA          | 85                                                    | 94.4                                                         | 104  | 1                                      | 137                                                                    | 11                                                      | 1                                                                     |
| TPSMCJ90A            | TPSMCJ90CA          | 90                                                    | 100                                                          | 111  | 1                                      | 146                                                                    | 10.3                                                    | 1                                                                     |
| TPSMCJ100A           | TPSMCJ100CA         | 100                                                   | 111                                                          | 123  | 1                                      | 162                                                                    | 9.3                                                     | 1                                                                     |
| TPSMCJ110A           | TPSMCJ110CA         | 110                                                   | 122                                                          | 135  | 1                                      | 177                                                                    | 8.5                                                     | 1                                                                     |
| TPSMCJ120A           | TPSMCJ120CA         | 120                                                   | 133                                                          | 147  | 1                                      | 193                                                                    | 7.8                                                     | 1                                                                     |
| TPSMCJ130A           | TPSMCJ130CA         | 130                                                   | 144                                                          | 159  | 1                                      | 209                                                                    | 7.2                                                     | 1                                                                     |
| TPSMCJ150A           | TPSMCJ150CA         | 150                                                   | 167                                                          | 185  | 1                                      | 243                                                                    | 6.2                                                     | 1                                                                     |
| TPSMCJ160A           | TPSMCJ160CA         | 160                                                   | 178                                                          | 197  | 1                                      | 259                                                                    | 5.8                                                     | 1                                                                     |
| TPSMCJ170A           | TPSMCJ170CA         | 170                                                   | 189                                                          | 209  | 1                                      | 275                                                                    | 5.5                                                     | 1                                                                     |
| TPSMCJ180A           | TPSMCJ180CA         | 180                                                   | 201                                                          | 222  | 1                                      | 292                                                                    | 5.1                                                     | 1                                                                     |
| TPSMCJ200A           | TPSMCJ200CA         | 200                                                   | 224                                                          | 247  | 1                                      | 324                                                                    | 4.6                                                     | 1                                                                     |
| TPSMCJ220A           | TPSMCJ220CA         | 220                                                   | 246                                                          | 272  | 1                                      | 356                                                                    | 4.2                                                     | 1                                                                     |
| TPSMCJ250A           | TPSMCJ250CA         | 250                                                   | 279                                                          | 309  | 1                                      | 405                                                                    | 3.7                                                     | 1                                                                     |
| TPSMCJ300A           | TPSMCJ300CA         | 300                                                   | 335                                                          | 371  | 1                                      | 486                                                                    | 3.1                                                     | 1                                                                     |
| TPSMCJ350A           | TPSMCJ350CA         | 350                                                   | 391                                                          | 432  | 1                                      | 567                                                                    | 2.6                                                     | 1                                                                     |
| TPSMCJ400A           | TPSMCJ400CA         | 400                                                   | 447                                                          | 494  | 1                                      | 648                                                                    | 2.3                                                     | 1                                                                     |
| TPSMCJ440A           | TPSMCJ440CA         | 440                                                   | 492                                                          | 543  | 1                                      | 713                                                                    | 2.1                                                     | 1                                                                     |

## Typical Performance Characteristics (TA=25°C unless otherwise Specified)

(Ratings at 25°C ambient temperature unless otherwise specified).

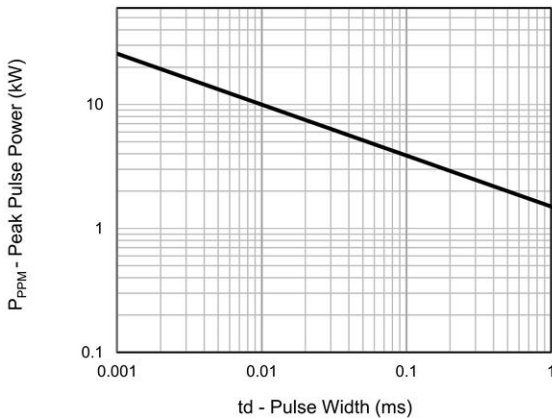


Fig.1 - Peak Pulse Power Rating

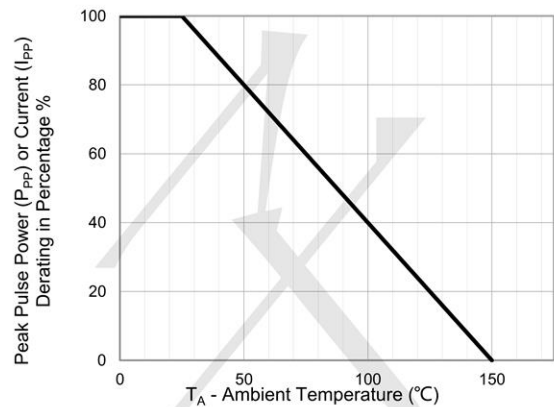


Fig.2 - Pulse Derating Curve

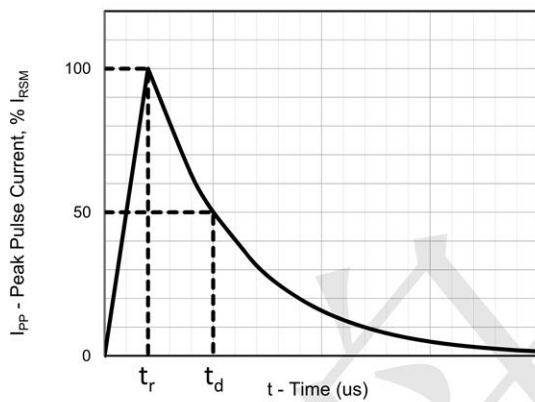


Fig.3 - Pulse Waveform

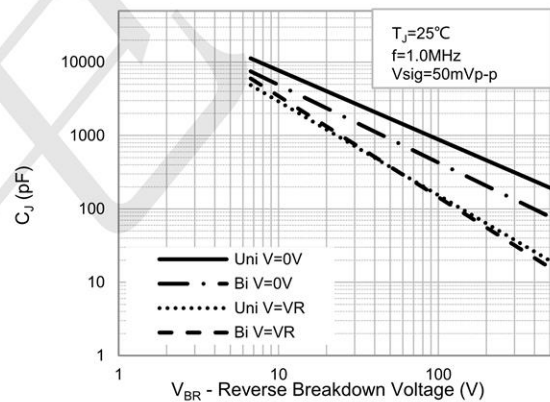


Fig.4 - Typical Junction Capacitance

**Package Outline Dimensions: SMC(DO-214AB)**

| Dim | Millimeters |      | Inches |       |
|-----|-------------|------|--------|-------|
|     | Min         | Max  | Min    | Max   |
| L   | 6.75        | 6.95 | 0.265  | 0.274 |
| D   | 5.75        | 5.95 | 0.226  | 0.234 |
| D1  | 2.9         | 3.1  | 0.114  | 0.122 |
| T   | 7.9         | 8.1  | 0.311  | 0.319 |
| T1  | 1.0         | 1.4  | 0.039  | 0.055 |
| d   | -           | 0.2  | -      | 0.008 |
| H   | 2.45        | 2.65 | 0.096  | 0.104 |
| H1  | 2.3         | 2.5  | 0.09   | 0.098 |