

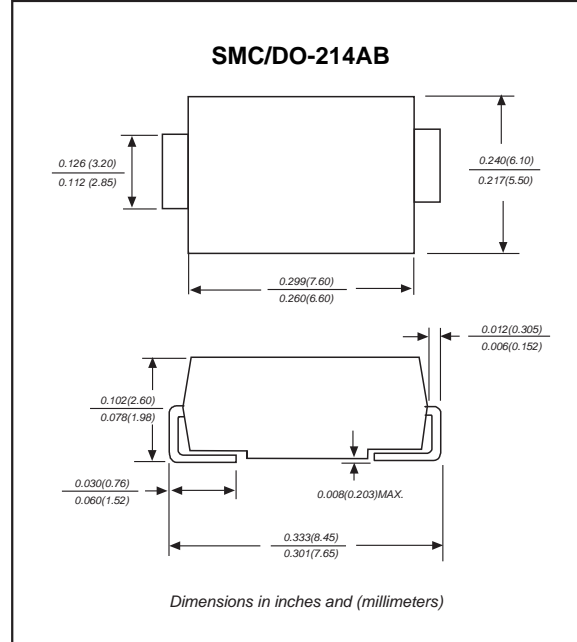
### Features

- 8000W peak pulse power capability with a 10/1000 us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time from 0V to VBR, typically less than 1 ps for uni-directional & 5 ns for bi-directional types.
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.
- Compliant to Halogen-free

### Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

### Package outline



### Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                   | CONDITIONS                            | Symbol    | Value       | UNIT             |
|-----------------------------|---------------------------------------|-----------|-------------|------------------|
| Peak Power Dissipation      | with a 10/1000 us waveform, Note 1, 2 | $P_{PPM}$ | 8000        | W                |
| Peak Pulse current          | with a 10/1000 us waveform            | $I_{PPM}$ | See Table 1 | A                |
| Peak Forward Surge Current  | 8.3ms Single Half Sine-Wave, Note 3   | $I_{FSM}$ | 300         | A                |
| Operating Temperature range |                                       | $T_J$     | -55 ~ +150  | $^\circ\text{C}$ |
| Storage Temperature range   |                                       | $T_{STG}$ | -55 ~ +150  | $^\circ\text{C}$ |

- Note 1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2  
 2. Mounted on copper pad area of 0.31"x0.31" (8.0x8.0 mm) per Fig 5  
 3. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum  
 4.  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

### Electrical Specification @ Tamb 25°C

| Part Number (Uni) | Part Number (Bi) | Device Marking Code |      | Breakdown Voltage $V_{BR}$ @ $I_T$ |         |            | Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ (uA) | Working Peak Reverse Voltage $V_{RWM}$ (V) | Maximum Reverse Surge Current $I_{PP}$ (A) | Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V) |
|-------------------|------------------|---------------------|------|------------------------------------|---------|------------|--|--|--|---|
|                   |                  | Uni                 | Bi   | Min (V)                            | Max (V) | $I_T$ (mA) |  |  |  |   |
| 8.0SMDJ14A        | 8.0SMDJ14CA      | 8PEG                | 8BEG | 15.60                              | 17.20   | 10         | 200  | 14.0                                       | 348.28                                     | 23.2  |
| 8.0SMDJ15A        | 8.0SMDJ15CA      | 8PEK                | 8BEK | 16.70                              | 18.50   | 1          | 100  | 15.0                                       | 331.15                                     | 24.4  |
| 8.0SMDJ16A        | 8.0SMDJ16CA      | 8PEM                | 8BEM | 17.80                              | 19.70   | 1          | 50   | 16.0                                       | 310.77                                     | 26.0  |
| 8.0SMDJ17A        | 8.0SMDJ17CA      | 8PEP                | 8BEP | 18.90                              | 20.90   | 1          | 20   | 17.0                                       | 292.75                                     | 27.6  |
| 8.0SMDJ18A        | 8.0SMDJ18CA      | 8PER                | 8BER | 20.00                              | 22.10   | 1          | 10   | 18.0                                       | 276.71                                     | 29.2  |
| 8.0SMDJ19A        | 8.0SMDJ19CA      | 8PET                | 8BET | 21.10                              | 23.30   | 1          | 10   | 19.0                                       | 262.51                                     | 30.8  |
| 8.0SMDJ20A        | 8.0SMDJ20CA      | 8PEV                | 8BEV | 22.20                              | 24.50   | 1          | 5  | 20.0                                       | 249.38                                     | 32.4  |
| 8.0SMDJ22A        | 8.0SMDJ22CA      | 8PEX                | 8BEX | 24.40                              | 26.90   | 1          | 5  | 22.0                                       | 227.61                                     | 35.5  |
| 8.0SMDJ24A        | 8.0SMDJ24CA      | 8PEZ                | 8BEZ | 26.70                              | 29.50   | 1          | 5  | 24.0                                       | 207.71                                     | 38.9  |
| 8.0SMDJ26A        | 8.0SMDJ26CA      | 8PFE                | 8BFE | 28.90                              | 31.90   | 1          | 5  | 26.0                                       | 191.92                                     | 42.1  |
| 8.0SMDJ28A        | 8.0SMDJ28CA      | 8PFG                | 8BFG | 31.10                              | 34.40   | 1          | 5  | 28.0                                       | 177.97                                     | 45.4  |
| 8.0SMDJ30A        | 8.0SMDJ30CA      | 8PFK                | 8BFK | 33.30                              | 36.80   | 1          | 5  | 30.0                                       | 166.94                                     | 48.4  |
| 8.0SMDJ33A        | 8.0SMDJ33CA      | 8PFM                | 8BFM | 36.70                              | 40.60   | 1          | 5  | 33.0                                       | 151.59                                     | 53.3  |
| 8.0SMDJ36A        | 8.0SMDJ36CA      | 8PFP                | 8BFP | 40.00                              | 44.20   | 1          | 5  | 36.0                                       | 139.07                                     | 58.1  |
| 8.0SMDJ40A        | 8.0SMDJ40CA      | 8PFR                | 8BFR | 44.40                              | 49.10   | 1          | 5  | 40.0                                       | 125.27                                     | 64.5  |
| 8.0SMDJ43A        | 8.0SMDJ43CA      | 8PFT                | 8BFT | 47.80                              | 52.80   | 1          | 5  | 43.0                                       | 116.43                                     | 69.4  |
| 8.0SMDJ45A        | 8.0SMDJ45CA      | 8PFV                | 8BFV | 50.00                              | 55.30   | 1          | 5  | 45.0                                       | 111.14                                     | 72.7  |
| 8.0SMDJ48A        | 8.0SMDJ48CA      | 8PFX                | 8BFX | 53.30                              | 58.90   | 1          | 5  | 48.0                                       | 104.39                                     | 77.4  |

**Note:**

1. Suffix 'A' denotes 5% tolerance device.
2. Add suffix 'CA' after part number to specify Bi-directional devices

### Rating and characteristic curves ( 8.0SMDJ Series )

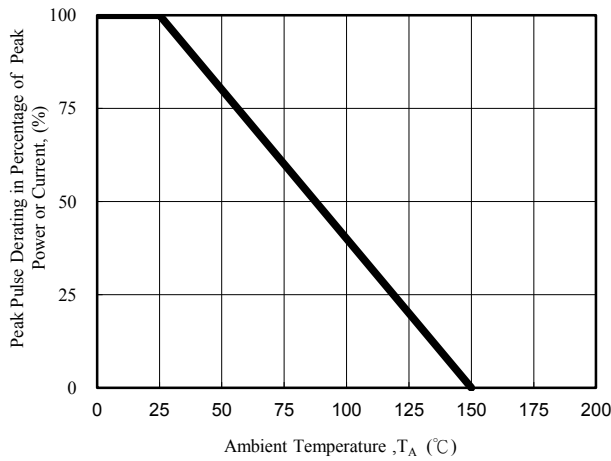


Fig. 1 - Pulse Derating Curve

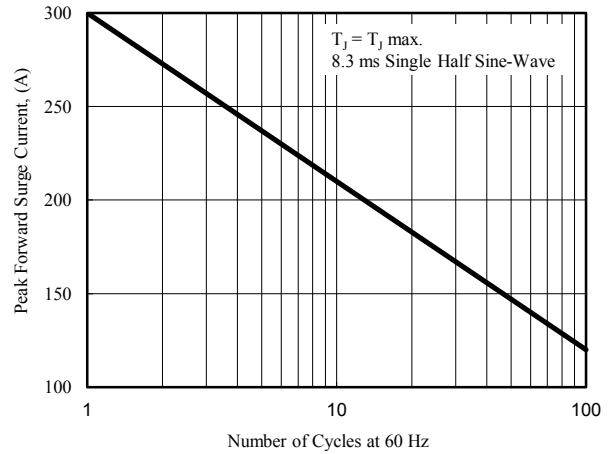


Fig. 2 - Maximum Non-Repetitive Surge Current

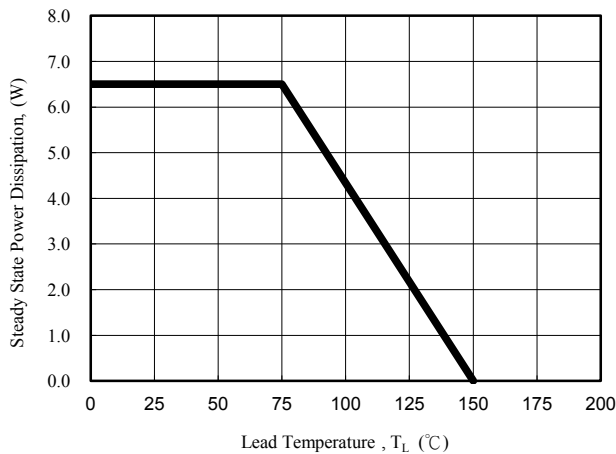


Fig. 3 - Steady State Power Derating Curve

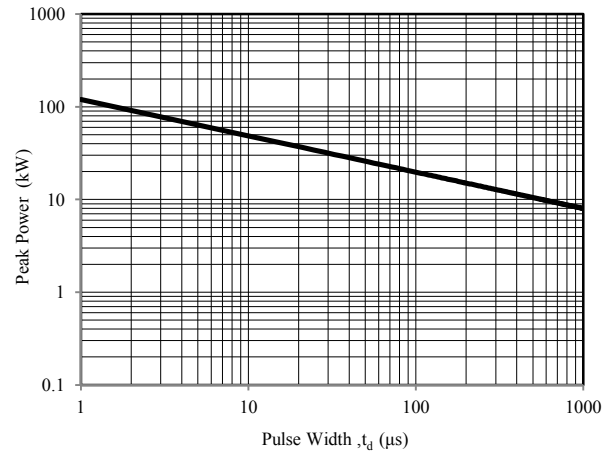


Fig. 4 - Peak Pulse Power Rating Curve

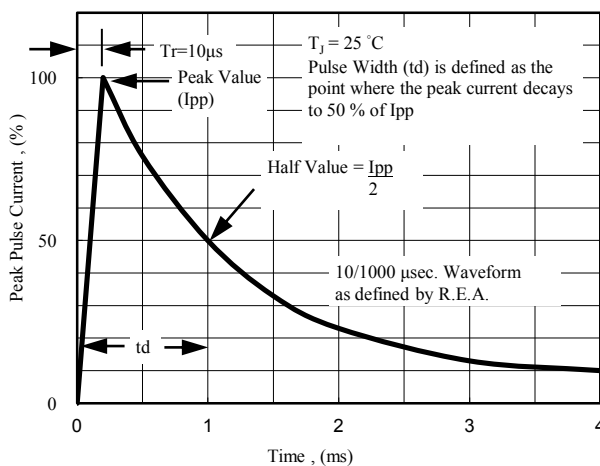
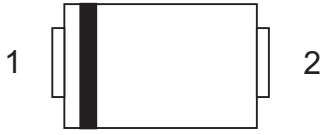
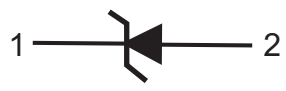
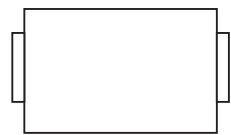

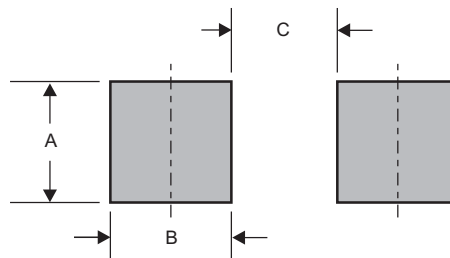


Fig. 5 - Pulse Waveform

### Pinning information

| Pin   | Simplified outline   | Symbol  |
|---|--|---|
| Uni-Directional<br>Pin1 cathode<br>Pin2 anode |  |  |
| Bi-Directional                                |   |  |

### Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C           |
|---------|--------------|--------------|-------------|
| SMC     | 0.132 (3.30) | 0.100 (2.50) | 0.176(4.40) |