

**Reverse Voltage: 5.0 to 58 V**  
**Peak Pulse Power: 600 W**

## Surface Mount Transient Voltage Suppressors

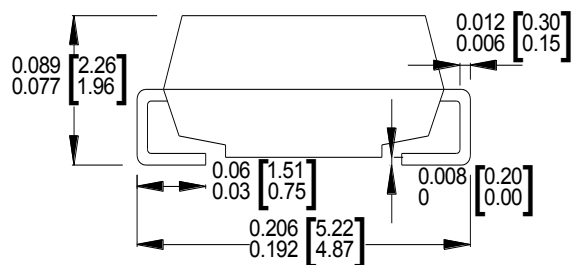
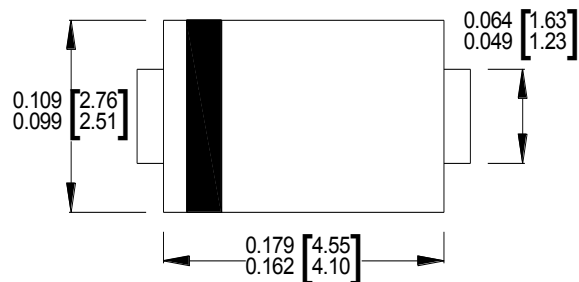
### Features

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

### Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

SMA/ DO-214AC



Dimensions : inch [ mm ]

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

| Parameter   | Symbol         | Value          | Unit             |
|---|----------------|----------------|------------------|
| Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>                       | $P_{PP}$       | 600            | W                |
| Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>                           | $I_{PP}$       | See Next Table | A                |
| Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$                          | $P_D$          | 3.0            | W                |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup> | $I_{FSM}$      | 60             | A                |
| Maximum instantaneous forward voltage at 25 A for unidirectional only                       | $V_F$          | 3.5            | V                |
| Operating junction and storage temperature range  | $T_J, T_{STG}$ | - 55 to +150   | $^\circ\text{C}$ |

#### Note:

(1)Non-repetitive current pulse per Fig.5 and derated above  $T_A = 25^\circ\text{C}$  per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

**Ratings and Characteristics Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

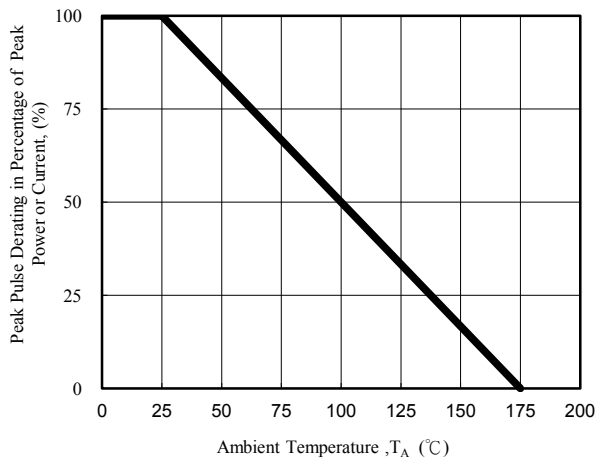


Fig. 1 - Pulse Derating Curve

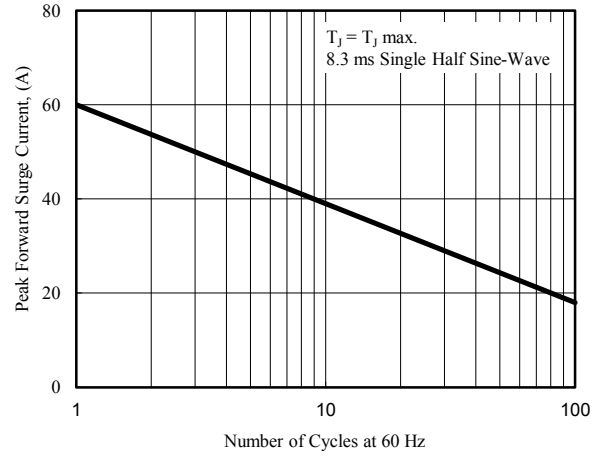


Fig. 2 - Maximum Non-Repetitive Surge Current

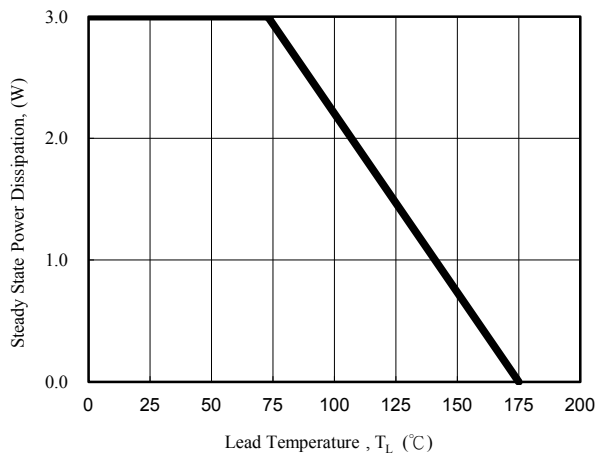


Fig. 3 - Steady State Power Derating Curve

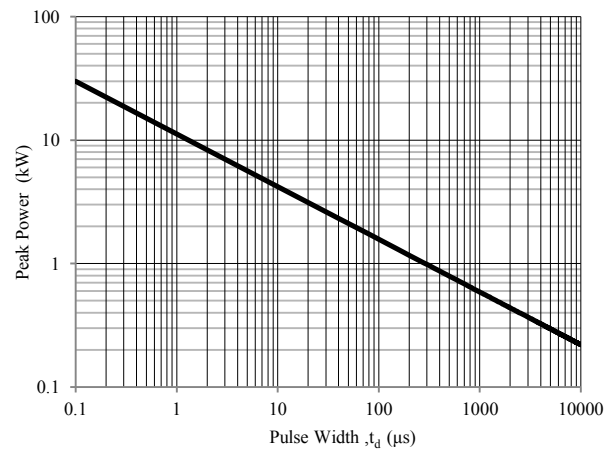


Fig. 4 - Peak Pulse Power Rating Curve

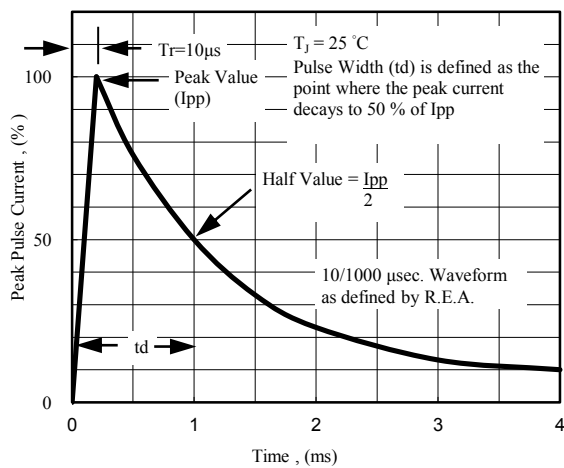


Fig. 5 - Pulse Waveform

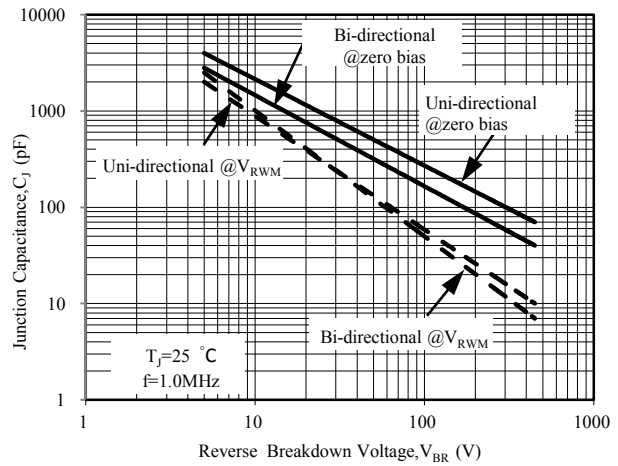


Fig. 6 - Typical Junction Capacitance

**Electrical Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

| 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) |  |  |  |   |
| SMA6J5.0A         | SMA6J5.0CA       | KE                  | AE | 6.40                               | 7.00    | 10         | 800  | 5.0  | 65.2                                       | 9.2   |
| SMA6J6.0A         | SMA6J6.0CA       | KG                  | AG | 6.67                               | 7.37    | 10         | 800  | 6.0  | 58.3                                       | 10.3  |
| SMA6J6.5A         | SMA6J6.5CA       | KK                  | AK | 7.22                               | 7.98    | 10         | 500  | 6.5  | 53.6                                       | 11.2  |
| SMA6J7.0A         | SMA6J7.0CA       | KM                  | AM | 7.78                               | 8.60    | 10         | 200  | 7.0  | 50.0                                       | 12.0  |
| SMA6J7.5A         | SMA6J7.5CA       | KP                  | AP | 8.33                               | 9.21    | 1          | 100  | 7.5  | 46.5                                       | 12.9  |
| SMA6J8.0A         | SMA6J8.0CA       | KR                  | AR | 8.89                               | 9.83    | 1          | 50   | 8.0  | 44.1                                       | 13.6  |
| SMA6J8.5A         | SMA6J8.5CA       | KT                  | AT | 9.44                               | 10.40   | 1          | 10   | 8.5  | 41.7                                       | 14.4  |
| SMA6J9.0A         | SMA6J9.0CA       | KV                  | AV | 10.00                              | 11.10   | 1          | 5.0  | 9.0  | 39.0                                       | 15.4  |
| SMA6J10A          | SMA6J10CA        | KX                  | AX | 11.10                              | 12.30   | 1          | 1.0  | 10.0                                       | 35.3                                       | 17.0  |
| SMA6J11A          | SMA6J11CA        | KZ                  | AZ | 12.20                              | 13.50   | 1          | 1.0  | 11.0                                       | 33.0                                       | 18.2  |
| SMA6J12A          | SMA6J12CA        | LE                  | BE | 13.30                              | 14.70   | 1          | 1.0  | 12.0                                       | 30.2                                       | 19.9  |
| SMA6J13A          | SMA6J13CA        | LG                  | BG | 14.40                              | 15.90   | 1          | 1.0  | 13.0                                       | 27.9                                       | 21.5  |
| SMA6J14A          | SMA6J14CA        | LK                  | BK | 15.60                              | 17.20   | 1          | 1.0  | 14.0                                       | 25.9                                       | 23.2  |
| SMA6J15A          | SMA6J15CA        | LM                  | BM | 16.70                              | 18.50   | 1          | 1.0  | 15.0                                       | 24.6                                       | 24.4  |
| SMA6J16A          | SMA6J16CA        | LP                  | BP | 17.80                              | 19.70   | 1          | 1.0  | 16.0                                       | 23.1                                       | 26.0  |
| SMA6J17A          | SMA6J17CA        | LR                  | BR | 18.90                              | 20.90   | 1          | 1.0  | 17.0                                       | 21.7                                       | 27.6  |
| SMA6J18A          | SMA6J18CA        | LT                  | BT | 20.00                              | 22.10   | 1          | 1.0  | 18.0                                       | 20.5                                       | 29.2  |
| SMA6J19A          | SMA6J19CA        | LB                  | BB | 21.10                              | 23.30   | 1          | 1.0  | 19.0                                       | 19.5                                       | 30.8  |
| SMA6J20A          | SMA6J20CA        | LV                  | BV | 22.20                              | 24.50   | 1          | 1.0  | 20.0                                       | 18.5                                       | 32.4  |
| SMA6J22A          | SMA6J22CA        | LX                  | BX | 24.40                              | 26.90   | 1          | 1.0  | 22.0                                       | 16.9                                       | 35.5  |
| SMA6J24A          | SMA6J24CA        | LZ                  | BZ | 26.70                              | 29.50   | 1          | 1.0  | 24.0                                       | 15.4                                       | 38.9  |
| SMA6J26A          | SMA6J26CA        | ME                  | CE | 28.90                              | 31.90   | 1          | 1.0  | 26.0                                       | 14.3                                       | 42.1  |
| SMA6J28A          | SMA6J28CA        | MG                  | CG | 31.10                              | 34.40   | 1          | 1.0  | 28.0                                       | 13.2                                       | 45.4  |
| SMA6J30A          | SMA6J30CA        | MK                  | CK | 33.30                              | 36.80   | 1          | 1.0  | 30.0                                       | 12.4                                       | 48.4  |
| SMA6J33A          | SMA6J33CA        | MM                  | CM | 36.70                              | 40.60   | 1          | 1.0  | 33.0                                       | 11.3                                       | 53.3  |
| SMA6J36A          | SMA6J36CA        | MP                  | CP | 40.00                              | 44.20   | 1          | 1.0  | 36.0                                       | 10.3                                       | 58.1  |
| SMA6J40A          | SMA6J40CA        | MR                  | CR | 44.40                              | 49.10   | 1          | 1.0  | 40.0                                       | 9.30                                       | 64.5  |
| SMA6J43A          | SMA6J43CA        | MT                  | CT | 47.80                              | 52.80   | 1          | 1.0  | 43.0                                       | 8.65                                       | 69.4  |
| SMA6J45A          | SMA6J45CA        | MV                  | CV | 50.00                              | 55.30   | 1          | 1.0  | 45.0                                       | 8.25                                       | 72.7  |
| SMA6J48A          | SMA6J48CA        | MX                  | CX | 53.30                              | 58.90   | 1          | 1.0  | 48.0                                       | 7.75                                       | 77.4  |
| SMA6J51A          | SMA6J51CA        | MZ                  | CZ | 56.70                              | 62.70   | 1          | 1.0  | 51.0                                       | 7.28                                       | 82.4  |
| SMA6J54A          | SMA6J54CA        | NE                  | DE | 60.00                              | 66.30   | 1          | 1.0  | 54.0                                       | 6.89                                       | 87.1  |
| SMA6J58A          | SMA6J58CA        | NG                  | DG | 64.40                              | 71.20   | 1          | 1.0  | 58.0                                       | 6.41                                       | 93.6  |

**Note:**

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double