

**Reverse Voltage: 5.0V to 130V**  
**Peak Pulse Power: 600 W**

## Surface Mount Transient Voltage Suppressors

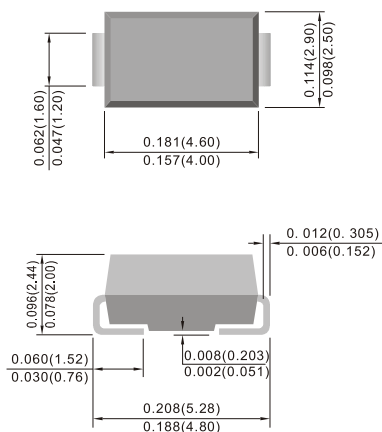
### Features

- 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
- Meets MSL level 1
- IEC61000-4-2 (ESD)  $\pm 30$ kV (air),  $\pm 30$ kV (contact)

### 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



Unit : inch(mm)



Bi-directional



Uni-directional

### 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)

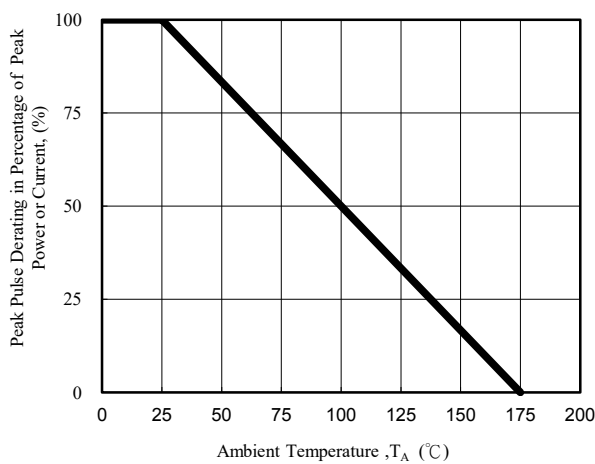


Fig. 1 - Pulse Derating Curve

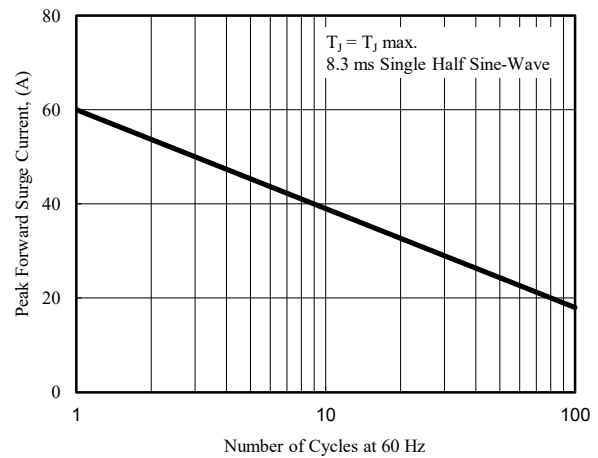


Fig. 2 - Maximum Non-Repetitive Surge Current

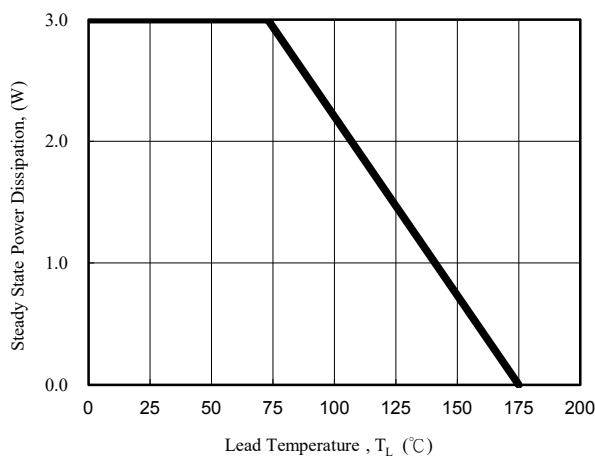


Fig. 3 - Steady State Power Derating Curve

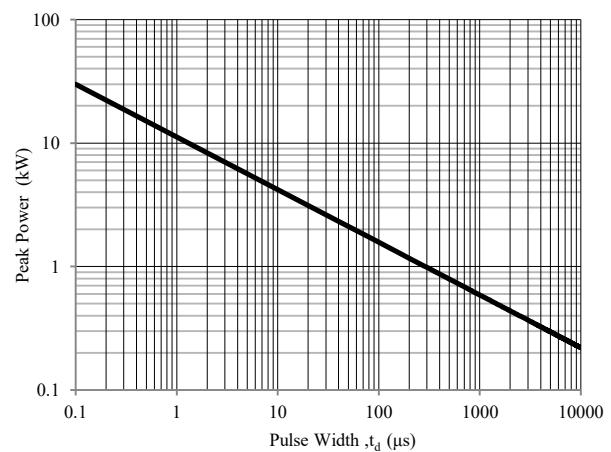


Fig. 4 - Peak Pulse Power Rating Curve

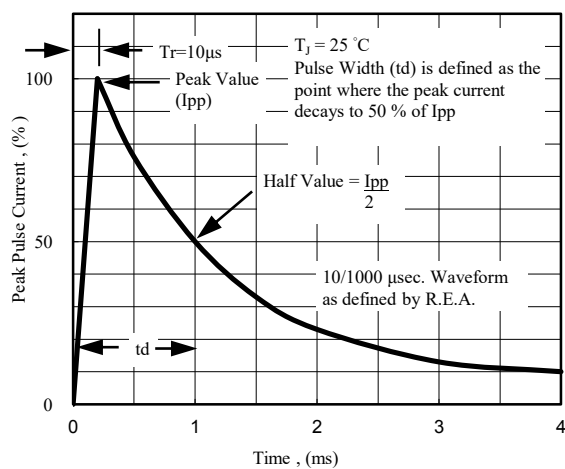


Fig. 5 - Pulse Waveform

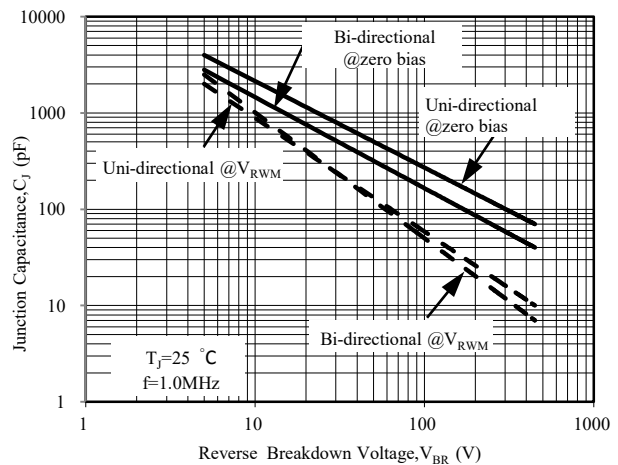


Fig. 6 - Typical Junction Capacitance

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

| Part Number<br>(Uni) | Part Number<br>(Bi) | Device<br>Marking<br>Code |    | Breakdown Voltage $V_{BR}$ @ $I_T$ |         |            | Maximum<br>Reverse<br>Leakage $I_R$<br>@ $V_{RWM}$<br>( $\mu\text{A}$ ) | Working<br>Peak<br>Reverse<br>Voltage<br>$V_{RWM}$<br>(V) | Maximum<br>Reverse<br>Surge<br>Current $I_{PP}$<br>(A) | Maximum<br>Clamping<br>Voltage $V_C$<br>@ $I_{PP}$<br>(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                                                      |
| SMA6J60A             | SMA6J60CA           | NK                        | DK | 66.70                              | 73.70   | 1          | 1.0                                                                     | 60.0                                                      | 6.20                                                   | 96.8                                                      |
| SMA6J64A             | SMA6J64CA           | NM                        | DM | 71.10                              | 78.60   | 1          | 1.0                                                                     | 64.0                                                      | 5.83                                                   | 103.0                                                     |
| SMA6J70A             | SMA6J70CA           | NP                        | DP | 77.80                              | 86.00   | 1          | 1.0                                                                     | 70.0                                                      | 5.31                                                   | 113.0                                                     |
| SMA6J75A             | SMA6J75CA           | NR                        | DR | 83.30                              | 92.10   | 1          | 1.0                                                                     | 75.0                                                      | 4.96                                                   | 121.0                                                     |
| SMA6J78A             | SMA6J78CA           | NT                        | DT | 86.70                              | 95.80   | 1          | 1.0                                                                     | 78.0                                                      | 4.76                                                   | 126.0                                                     |
| SMA6J80A             | SMA6J80CA           | NB                        | DB | 88.80                              | 97.60   | 1          | 1.0                                                                     | 80.0                                                      | 4.63                                                   | 129.6                                                     |
| SMA6J85A             | SMA6J85CA           | NV                        | DV | 94.40                              | 104.00  | 1          | 1.0                                                                     | 85.0                                                      | 4.38                                                   | 137.0                                                     |
| SMA6J90A             | SMA6J90CA           | NX                        | DX | 100.00                             | 111.00  | 1          | 1.0                                                                     | 90.0                                                      | 4.11                                                   | 146.0                                                     |
| SMA6J100A            | SMA6J100CA          | NZ                        | DZ | 111.00                             | 123.00  | 1          | 1.0                                                                     | 100.0                                                     | 3.70                                                   | 162.0                                                     |
| SMA6J110A            | SMA6J110CA          | PE                        | EE | 122.00                             | 135.00  | 1          | 1.0                                                                     | 110.0                                                     | 3.39                                                   | 177.0                                                     |
| SMA6J120A            | SMA6J120CA          | PG                        | EG | 133.00                             | 147.00  | 1          | 1.0                                                                     | 120.0                                                     | 3.11                                                   | 193.0                                                     |
| SMA6J130A            | SMA6J130CA          | PK                        | EK | 144.00                             | 159.00  | 1          | 1.0                                                                     | 130.0                                                     | 2.87                                                   | 209.0                                                     |

**Note:**

- Suffix 'A' denotes 5% tolerance device.
- Add suffix 'CA' after part number to specify Bi-directional devices.
- For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double.