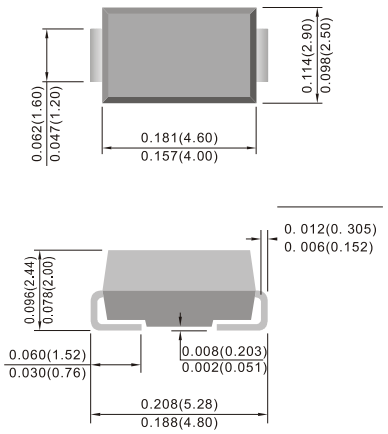
## Reverse Voltage: 5.0V to 130V
## Peak Pulse Power: 600 W

# Surface Mount
# Transient Voltage Suppressors

### Features

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- AEC-Q101 qualified
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

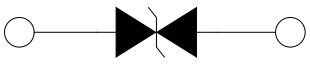
**SMA/DO-214AC**



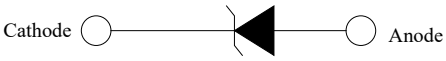

Unit : inch(mm)

### 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



Bi-directional




Uni-directional

### Maximum Ratings($T_A$=25℃ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak power dissipation with a 10/1000μs waveform(1) | $P_{PP}$ | 600 | W |
| Peak pulse current with a 10/1000μs waveform(1) | $I_{PP}$ | See Next Table | A |
| Power dissipation on infinite heatsink at $T_L$ = 75 °C | $P_D$ | 3.0 | W |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(2) | $I_{FSM}$ | 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 | °C |

**Note:**

(1)Non-repetitive current pulse per Fig.5 and derated above $T_A$= 25 °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℃ unless otherwise noted)

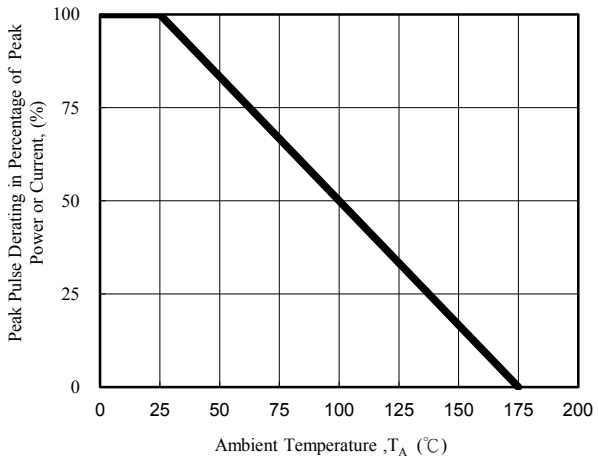



Fig. 1 - Pulse Derating Curve

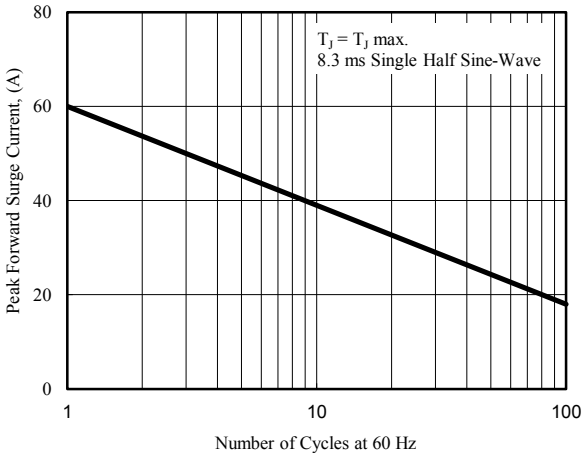



Fig. 2 - Maximum Non-Repetitive Surge Current

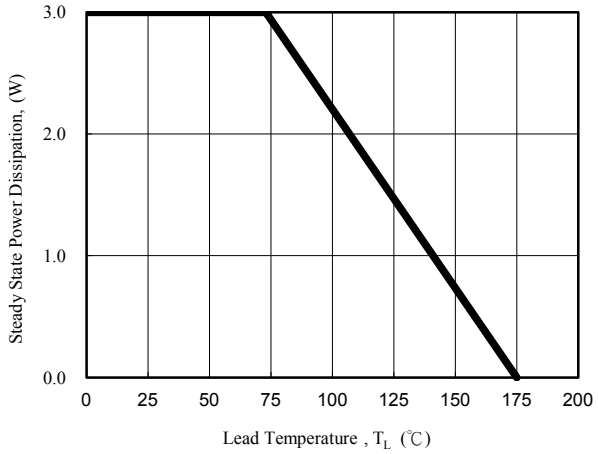



Fig. 3 - Steady State Power Derating Curve

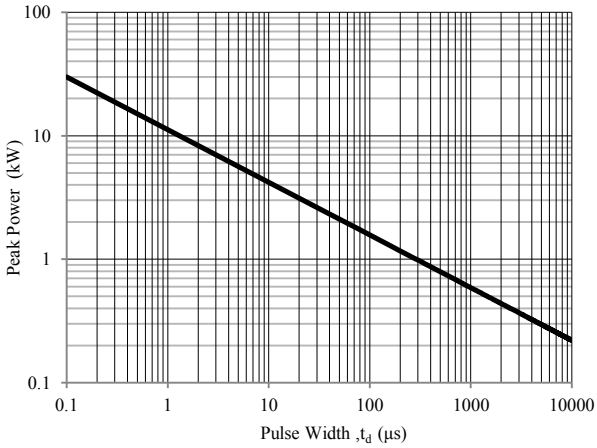



Fig. 4 - Peak Pulse Power Rating Curve

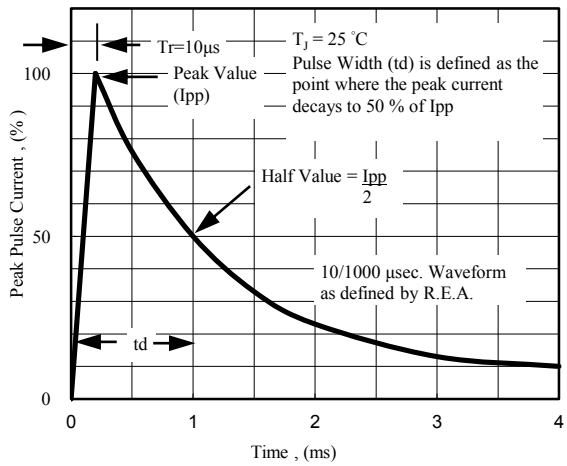



Fig. 5 - Pulse Waveform

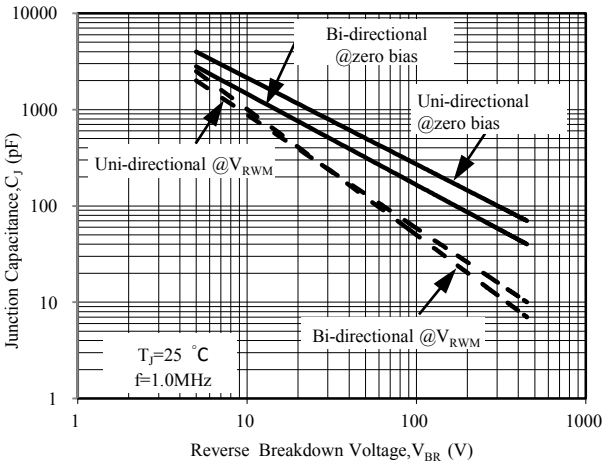



Fig. 6 - Typical Junction Capacitance

## Electrical Characteristics ($T_A$=25℃ unless otherwise noted)

| Part Number (Uni) | Part Number (Bi) | Device Marking Code | | Breakdown Voltage $V_{BR}$ @$I_T$ | | | Maximum Reverse Leakage $I_R$ @$V_{RWM}$ (μA) | 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) | | | | |
| TPSMA6J5.0A | TPSMA6J5.0CA | KEA | AEA | 6.40 | 7.00 | 10 | 800 | 5.0 | 65.2 | 9.2 |
| TPSMA6J6.0A | TPSMA6J6.0CA | KGA | AGA | 6.67 | 7.37 | 10 | 800 | 6.0 | 58.3 | 10.3 |
| TPSMA6J6.5A | TPSMA6J6.5CA | KKA | AKA | 7.22 | 7.98 | 10 | 500 | 6.5 | 53.6 | 11.2 |
| TPSMA6J7.0A | TPSMA6J7.0CA | KMA | AMA | 7.78 | 8.60 | 10 | 200 | 7.0 | 50.0 | 12.0 |
| TPSMA6J7.5A | TPSMA6J7.5CA | KPA | APA | 8.33 | 9.21 | 1 | 100 | 7.5 | 46.5 | 12.9 |
| TPSMA6J8.0A | TPSMA6J8.0CA | KRA | ARA | 8.89 | 9.83 | 1 | 50 | 8.0 | 44.1 | 13.6 |
| TPSMA6J8.5A | TPSMA6J8.5CA | KTA | ATA | 9.44 | 10.40 | 1 | 10 | 8.5 | 41.7 | 14.4 |
| TPSMA6J9.0A | TPSMA6J9.0CA | KVA | AVA | 10.00 | 11.10 | 1 | 5.0 | 9.0 | 39.0 | 15.4 |
| TPSMA6J10A | TPSMA6J10CA | KXA | AXA | 11.10 | 12.30 | 1 | 1.0 | 10.0 | 35.3 | 17.0 |
| TPSMA6J11A | TPSMA6J11CA | KZA | AZA | 12.20 | 13.50 | 1 | 1.0 | 11.0 | 33.0 | 18.2 |
| TPSMA6J12A | TPSMA6J12CA | LEA | BEA | 13.30 | 14.70 | 1 | 1.0 | 12.0 | 30.2 | 19.9 |
| TPSMA6J13A | TPSMA6J13CA | LGA | BGA | 14.40 | 15.90 | 1 | 1.0 | 13.0 | 27.9 | 21.5 |
| TPSMA6J14A | TPSMA6J14CA | LKA | BKA | 15.60 | 17.20 | 1 | 1.0 | 14.0 | 25.9 | 23.2 |
| TPSMA6J15A | TPSMA6J15CA | LMA | BMA | 16.70 | 18.50 | 1 | 1.0 | 15.0 | 24.6 | 24.4 |
| TPSMA6J16A | TPSMA6J16CA | LPA | BPA | 17.80 | 19.70 | 1 | 1.0 | 16.0 | 23.1 | 26.0 |
| TPSMA6J17A | TPSMA6J17CA | LRA | BRA | 18.90 | 20.90 | 1 | 1.0 | 17.0 | 21.7 | 27.6 |
| TPSMA6J18A | TPSMA6J18CA | LTA | BTA | 20.00 | 22.10 | 1 | 1.0 | 18.0 | 20.5 | 29.2 |
| TPSMA6J19A | TPSMA6J19CA | LBA | BBA | 21.10 | 23.30 | 1 | 1.0 | 19.0 | 19.5 | 30.8 |
| TPSMA6J20A | TPSMA6J20CA | LVA | BVA | 22.20 | 24.50 | 1 | 1.0 | 20.0 | 18.5 | 32.4 |
| TPSMA6J22A | TPSMA6J22CA | LXA | BXA | 24.40 | 26.90 | 1 | 1.0 | 22.0 | 16.9 | 35.5 |
| TPSMA6J24A | TPSMA6J24CA | LZA | BZA | 26.70 | 29.50 | 1 | 1.0 | 24.0 | 15.4 | 38.9 |
| TPSMA6J26A | TPSMA6J26CA | MEA | CEA | 28.90 | 31.90 | 1 | 1.0 | 26.0 | 14.3 | 42.1 |
| TPSMA6J28A | TPSMA6J28CA | MGA | CGA | 31.10 | 34.40 | 1 | 1.0 | 28.0 | 13.2 | 45.4 |
| TPSMA6J30A | TPSMA6J30CA | MKA | CKA | 33.30 | 36.80 | 1 | 1.0 | 30.0 | 12.4 | 48.4 |
| TPSMA6J33A | TPSMA6J33CA | MMA | CMA | 36.70 | 40.60 | 1 | 1.0 | 33.0 | 11.3 | 53.3 |
| TPSMA6J36A | TPSMA6J36CA | MPA | CPA | 40.00 | 44.20 | 1 | 1.0 | 36.0 | 10.3 | 58.1 |
| TPSMA6J40A | TPSMA6J40CA | MRA | CRA | 44.40 | 49.10 | 1 | 1.0 | 40.0 | 9.30 | 64.5 |
| TPSMA6J43A | TPSMA6J43CA | MTA | CTA | 47.80 | 52.80 | 1 | 1.0 | 43.0 | 8.65 | 69.4 |
| TPSMA6J45A | TPSMA6J45CA | MVA | CVA | 50.00 | 55.30 | 1 | 1.0 | 45.0 | 8.25 | 72.7 |
| TPSMA6J48A | TPSMA6J48CA | MXA | CXA | 53.30 | 58.90 | 1 | 1.0 | 48.0 | 7.75 | 77.4 |
| TPSMA6J51A | TPSMA6J51CA | MZA | CZA | 56.70 | 62.70 | 1 | 1.0 | 51.0 | 7.28 | 82.4 |
| TPSMA6J54A | TPSMA6J54CA | NEA | DEA | 60.00 | 66.30 | 1 | 1.0 | 54.0 | 6.89 | 87.1 |
| TPSMA6J58A | TPSMA6J58CA | NGA | DGA | 64.40 | 71.20 | 1 | 1.0 | 58.0 | 6.41 | 93.6 |
| TPSMA6J60A | TPSMA6J60CA | NKA | DKA | 66.70 | 73.70 | 1 | 1.0 | 60.0 | 6.20 | 96.8 |
| TPSMA6J64A | TPSMA6J64CA | NMA | DMA | 71.10 | 78.60 | 1 | 1.0 | 64.0 | 5.83 | 103.0 |
| TPSMA6J70A | TPSMA6J70CA | NPA | DPA | 77.80 | 86.00 | 1 | 1.0 | 70.0 | 5.31 | 113.0 |
| TPSMA6J75A | TPSMA6J75CA | NRA | DRA | 83.30 | 92.10 | 1 | 1.0 | 75.0 | 4.96 | 121.0 |
| TPSMA6J78A | TPSMA6J78CA | NTA | DTA | 86.70 | 95.80 | 1 | 1.0 | 78.0 | 4.76 | 126.0 |
| TPSMA6J80A | TPSMA6J80CA | NBA | DBA | 88.80 | 97.60 | 1 | 1.0 | 80.0 | 4.63 | 129.6 |
| TPSMA6J85A | TPSMA6J85CA | NVA | DVA | 94.40 | 104.00 | 1 | 1.0 | 85.0 | 4.38 | 137.0 |
| TPSMA6J90A | TPSMA6J90CA | NXA | DXA | 100.00 | 111.00 | 1 | 1.0 | 90.0 | 4.11 | 146.0 |
| TPSMA6J100A | TPSMA6J100CA | NZA | DZA | 111.00 | 123.00 | 1 | 1.0 | 100.0 | 3.70 | 162.0 |
| TPSMA6J110A | TPSMA6J110CA | PEA | EEA | 122.00 | 135.00 | 1 | 1.0 | 110.0 | 3.39 | 177.0 |
| TPSMA6J120A | TPSMA6J120CA | PGA | EGA | 133.00 | 147.00 | 1 | 1.0 | 120.0 | 3.11 | 193.0 |
| TPSMA6J130A | TPSMA6J130CA | PKA | EKA | 144.00 | 159.00 | 1 | 1.0 | 130.0 | 2.87 | 209.0 |

**Note:**

1. Suffix 'A ' denotes 5% tolerance device.
2. Add suffix ' 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.