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|---|----------------|
|  | E480232 |
|---|----------------|

Features

- IEC 61000-4-2 ESD 30kV(Air), 30kV (Contact)
- For Surface Mount Applications
- Unidirectional And Bidirectional
- High Surge Capability
- High Temp Soldering: 260°C / 10 Seconds At Terminals
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMA6J9.0CA for 5% Tolerance
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Mechanical Data

- Polarity: Indicated by Cathode Band Except Bi-directional Types

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Typical Thermal Resistance: 33°C/W Junction to Lead

| | | | |
|--|-------------|---------------|----------|
| Peak Pulse Power Surge Current with a 10/1000µs Waveform | I_{PPM} | See the Table | Note 3 |
| Peak Pulse Power Dissipation | P_{PPM} | 600W(Min.) | Note 3,6 |
| Steady State Power Dissipation | $P_{M(AV)}$ | 3.0 W | Note 5 |

Note:

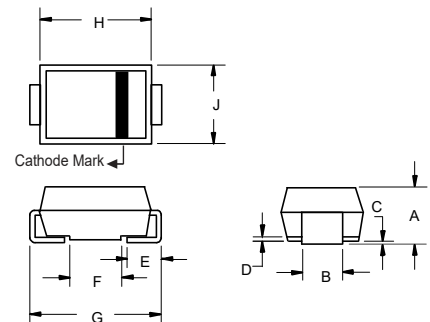
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.4.
4. Mounted on 5.0mm² copper pads to each terminal.
5. Lead temperature at $T_L = 75^\circ\text{C}$.
6. Peak pulse power waveform is 10/1000us.

Pin Configuration:



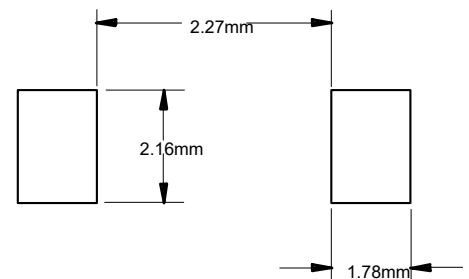
**600 Watt TVS
5.0 to 58 Volts**

**SMA (DO-214AC)
LEAD FRAME**



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|-------|-------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.075 | 0.096 | 1.90 | 2.44 | |
| B | 0.050 | 0.064 | 1.27 | 1.63 | |
| C | 0.002 | 0.008 | 0.051 | 0.203 | |
| D | --- | 0.020 | --- | 0.51 | |
| E | 0.030 | 0.060 | 0.76 | 1.52 | |
| F | 0.065 | 0.091 | 1.65 | 2.32 | |
| G | 0.189 | 0.220 | 4.80 | 5.59 | |
| H | 0.157 | 0.187 | 4.00 | 4.75 | |
| J | 0.090 | 0.115 | 2.25 | 2.92 | |

SUGGESTED SOLDER PAD LAYOUT



Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | | Breakdown Voltage V_{BR} @ I_T | | | Maximum Reverse Leakage I_D (μ A) @ V_{WM} | Reverse Stand-Off Voltage V_{WM} (Volts) | Maximum Reverse Surge Current I_{pp} (A) @ 10x1000us sinewave | Maximum Clamping Voltage V_c (Volts) @ I_{pp} | Device Marking Code | |
|-----------------|------------|------------------------------------|----------|------------|---|--|---|---|---------------------|----|
| | | Min. (V) | Max. (V) | I_T (mA) | | | | | Uni | Bi |
| SMA6J5.0A | SMA6J5.0CA | 6.40 | 7.00 | 10 | 800 | 5.0 | 65.2 | 9.2 | KE | TE |
| SMA6J6.0A | SMA6J6.0CA | 6.67 | 7.37 | 10 | 800 | 6.0 | 58.3 | 10.3 | KG | TG |
| SMA6J6.5A | SMA6J6.5CA | 7.22 | 7.98 | 10 | 500 | 6.5 | 53.6 | 11.2 | KK | TK |
| SMA6J7.0A | SMA6J7.0CA | 7.78 | 8.60 | 10 | 200 | 7.0 | 50.0 | 12.0 | KM | TM |
| SMA6J7.5A | SMA6J7.5CA | 8.33 | 9.21 | 1 | 100 | 7.5 | 46.5 | 12.9 | KP | TP |
| SMA6J8.0A | SMA6J8.0CA | 8.89 | 9.83 | 1 | 50 | 8.0 | 44.1 | 13.6 | KR | TR |
| SMA6J8.5A | SMA6J8.5CA | 9.44 | 10.4 | 1 | 10 | 8.5 | 41.7 | 14.4 | KT | TT |
| SMA6J9.0A | SMA6J9.0CA | 10.0 | 11.1 | 1 | 5.0 | 9.0 | 39.0 | 15.4 | KV | TV |
| SMA6J10A | SMA6J10CA | 11.1 | 12.3 | 1 | 1.0 | 10 | 35.3 | 17.0 | KX | TX |
| SMA6J11A | SMA6J11CA | 12.2 | 13.5 | 1 | 1.0 | 11 | 33.0 | 18.2 | KZ | TZ |
| SMA6J12A | SMA6J12CA | 13.3 | 14.7 | 1 | 1.0 | 12 | 30.2 | 19.9 | LE | UE |
| SMA6J13A | SMA6J13CA | 14.4 | 15.9 | 1 | 1.0 | 13 | 27.9 | 21.5 | LG | UG |
| SMA6J14A | SMA6J14CA | 15.6 | 17.2 | 1 | 1.0 | 14 | 25.9 | 23.2 | LK | UK |
| SMA6J15A | SMA6J15CA | 16.7 | 18.5 | 1 | 1.0 | 15 | 24.6 | 24.4 | LM | UM |
| SMA6J16A | SMA6J16CA | 17.8 | 19.7 | 1 | 1.0 | 16 | 23.1 | 26.0 | LP | UP |
| SMA6J17A | SMA6J17CA | 18.9 | 20.9 | 1 | 1.0 | 17 | 21.7 | 27.6 | LR | UR |
| SMA6J18A | SMA6J18CA | 20.0 | 22.1 | 1 | 1.0 | 18 | 20.5 | 29.2 | LT | UT |
| SMA6J19A | SMA6J19CA | 21.1 | 23.3 | 1 | 1.0 | 19 | 19.5 | 30.8 | LB | UB |
| SMA6J20A | SMA6J20CA | 22.2 | 24.5 | 1 | 1.0 | 20 | 18.5 | 32.4 | LV | UV |
| SMA6J22A | SMA6J22CA | 24.4 | 26.9 | 1 | 1.0 | 22 | 16.9 | 35.5 | LX | UX |
| SMA6J24A | SMA6J24CA | 26.7 | 29.5 | 1 | 1.0 | 24 | 15.4 | 38.9 | LZ | UZ |
| SMA6J26A | SMA6J26CA | 28.9 | 31.9 | 1 | 1.0 | 26 | 14.3 | 42.1 | ME | WE |
| SMA6J28A | SMA6J28CA | 31.1 | 34.4 | 1 | 1.0 | 28 | 13.2 | 45.4 | MG | WG |
| SMA6J30A | SMA6J30CA | 33.3 | 36.8 | 1 | 1.0 | 30 | 12.4 | 48.4 | MK | WK |
| SMA6J33A | SMA6J33CA | 36.7 | 40.6 | 1 | 1.0 | 33 | 11.3 | 53.3 | MM | WM |
| SMA6J36A | SMA6J36CA | 40.0 | 44.2 | 1 | 1.0 | 36 | 10.3 | 58.1 | MP | WP |
| SMA6J40A | SMA6J40CA | 44.4 | 49.1 | 1 | 1.0 | 40 | 9.3 | 64.5 | MR | WR |
| SMA6J43A | SMA6J43CA | 47.8 | 52.8 | 1 | 1.0 | 43 | 8.65 | 69.4 | MT | WT |
| SMA6J45A | SMA6J45CA | 50.0 | 55.3 | 1 | 1.0 | 45 | 8.25 | 72.7 | MV | WV |
| SMA6J48A | SMA6J48CA | 53.3 | 58.9 | 1 | 1.0 | 48 | 7.75 | 77.4 | MX | WX |
| SMA6J51A | SMA6J51CA | 56.7 | 62.7 | 1 | 1.0 | 51 | 7.28 | 82.4 | MZ | WZ |
| SMA6J54A | SMA6J54CA | 60.0 | 66.3 | 1 | 1.0 | 54 | 6.89 | 87.1 | NE | XE |
| SMA6J58A | SMA6J58CA | 64.4 | 71.2 | 1 | 1.0 | 58 | 6.41 | 93.6 | NG | XG |

Note:

*For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double .

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

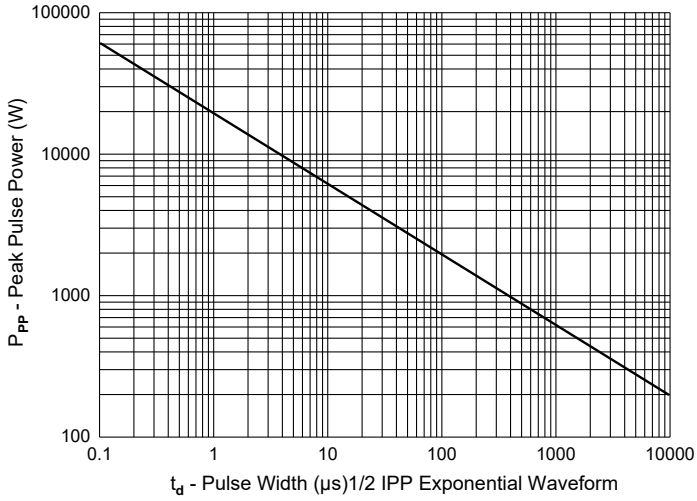


Fig. 2 - Typical Junction Capacitance

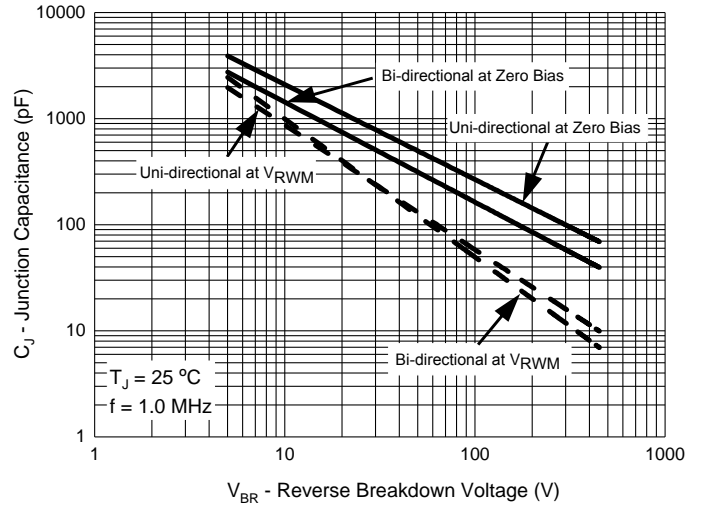


Fig. 3 - Pulse Waveform

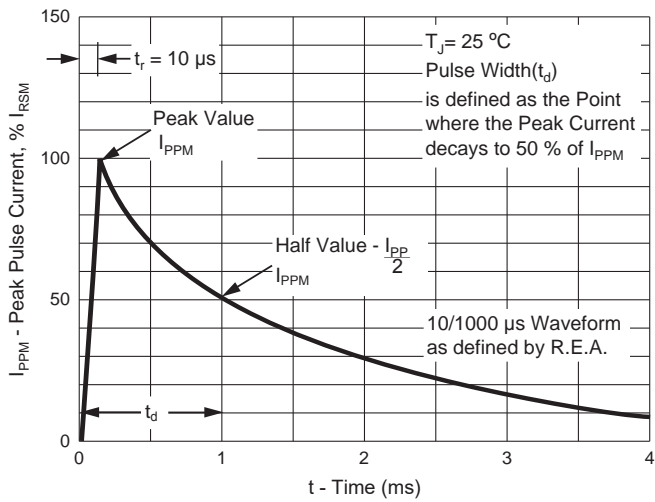


Fig. 4 - Pulse Derating Curve

