

|   |                |
|---|----------------|
|  | <b>E480232</b> |
|---|----------------|

**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:**

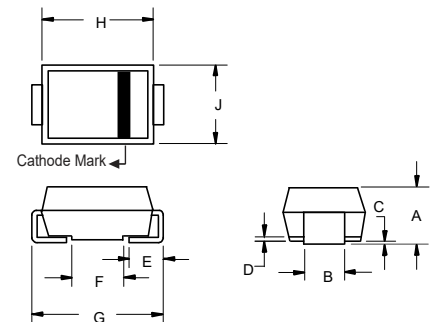
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.4.
4. Mounted on 5.0mm<sup>2</sup> 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:**



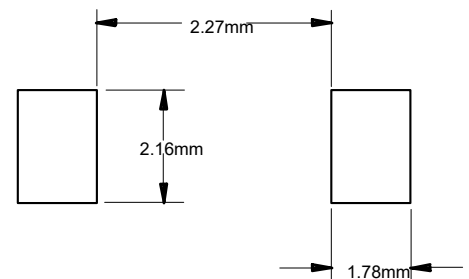
**600 Watt TVS  
5.0 to 58 Volts**

**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 $I_D$ ( $\mu$ 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

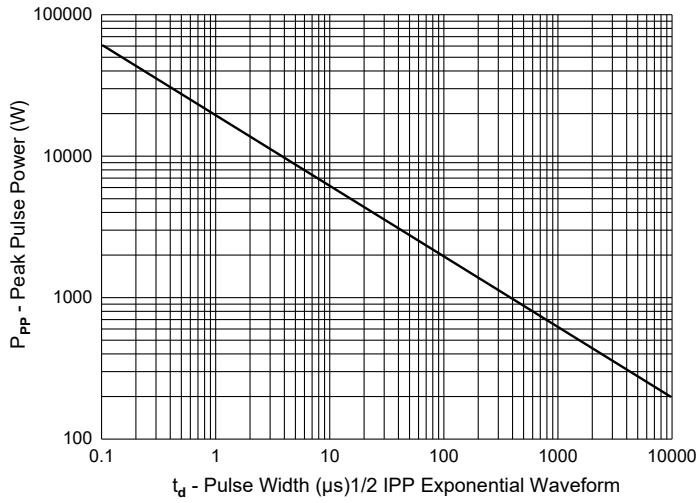


Fig. 2 - Typical Junction Capacitance

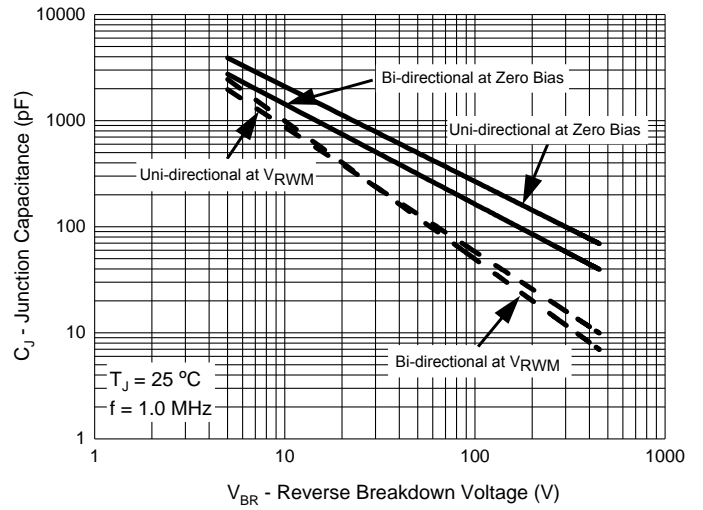


Fig. 3 - Pulse Waveform

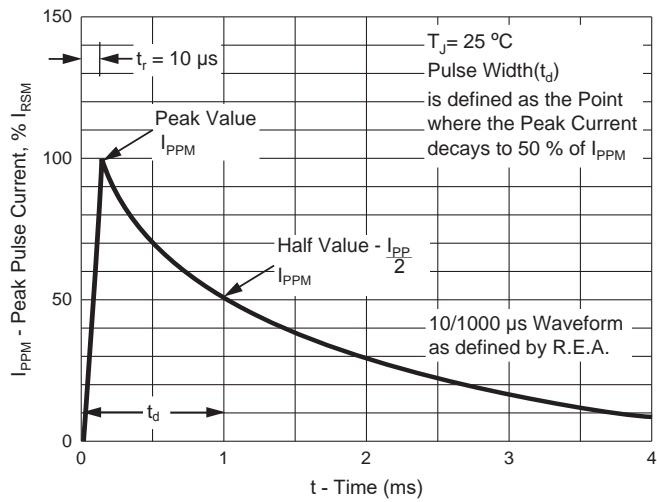
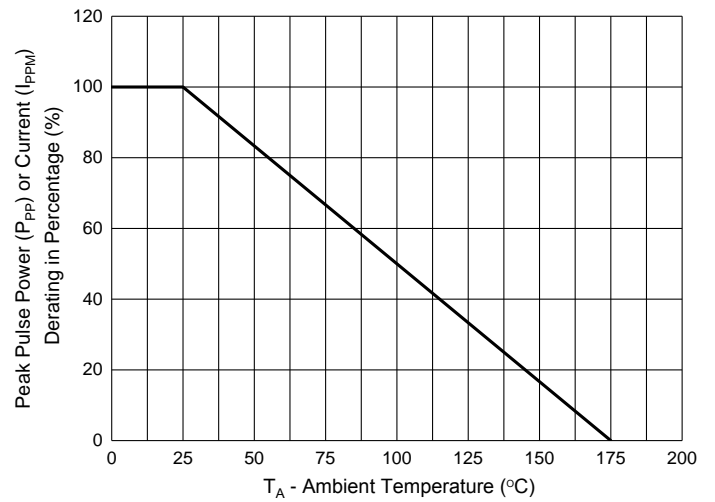


Fig. 4 - Pulse Derating Curve



## Ordering Information

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:5Kpcs/Reel |

**\*\*\*IMPORTANT NOTICE\*\*\***

*Micro Commercial Components Corp.* reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

**\*\*\*LIFE SUPPORT\*\*\***

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

**\*\*\*CUSTOMER AWARENESS\*\*\***

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.