

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

Features

- For Surface Mount Application in Order to Optimize Board Space
- Built-in Strain Relief
- Glass Passivated Junction
- Plastic Package Has Underwrites Laboratory Flammability
- Temperature Coefficient, Typical Value is 0.1%
- Fast Response Time: Typical Less than 1ps from 0V to BV Min
- Typical I_D Less than 1μA Above 10V
- High Temperature Soldering: 260°C/10 Seconds at Terminals
- 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 Compliant. See Ordering Information)

Mechanical Data

- Polarity: Color Band Denotes Positive End(Cathode) Except Bi-directional Types(Note4)
- IEC-61000-4-2 ESD 15kV(Air), 8kV(Contact)

Maximum Ratings

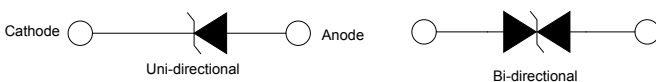
- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Typical Thermal Resistance: 15°C/W Junction to Lead
- Typical Thermal Resistance: 75°C/W Junction to Ambient

Electrical Characteristics @ 25°C Unless Otherwise Specified

| | | | |
|--|------------------|-----------------------------------|------------------------|
| Peak Pulse Power Surge Current on 10/1000μs Waveform | I _{PPM} | See the Table | Note 3 |
| Peak Pulse Power Dissipation on 10/1000μs Waveform | P _{PPM} | 1500W | Note 3,4, Fig1 |
| Power Dissipation on infinite heat sink | P _D | 6.5W | T _L = 75°C. |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only | I _{FSM} | 200A | |
| Maximum instantaneous forward voltage at 100A for unidirectional only | V _F | 3.5V MAX 1.7 TYP /5V MAX 4 TYP | Note 6 |

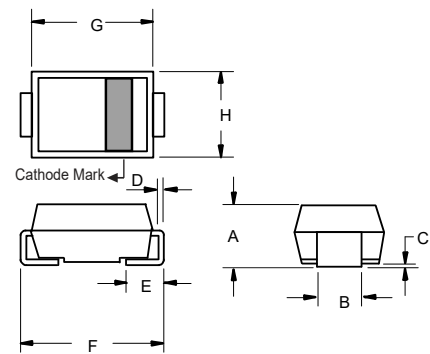
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.4.
4. Mounted on 8.0mm²copper pads to each terminal.
5. Unidirectional and bidirectional available, for bidirectional devices add "C" suffix to the pn#SMCJ5.0CA
6. V_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

Pin Configuration:



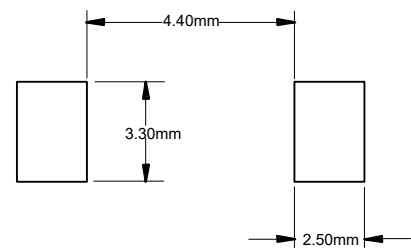
**1500 Watt TVS
5.0 to 440 Volts**

**SMC (DO-214AB)
(LEAD FRAME)**



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.079 | 0.103 | 2.00 | 2.62 | |
| B | 0.108 | 0.128 | 2.75 | 3.25 | |
| C | 0.002 | 0.008 | 0.051 | 0.203 | |
| D | 0.006 | 0.012 | 0.152 | 0.305 | |
| E | 0.030 | 0.060 | 0.76 | 1.52 | |
| F | 0.305 | 0.320 | 7.75 | 8.13 | |
| G | 0.260 | 0.280 | 6.60 | 7.11 | |
| H | 0.220 | 0.245 | 5.59 | 6.22 | |

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | | Reverse Stand-Off Voltage | Breakdown Voltage $V_{BR}(V)$ | | Test Current | Max. Clamping Voltage @ I_{PP} | Peak Pulse Current | Reverse Leakage Current@ V_{WM} | Marking Code | |
|-----------------|-----------|---------------------------|-------------------------------|-------|--------------|----------------------------------|--------------------|-----------------------------------|--------------|-----|
| Uni-Polar | Bi-Polar | $V_{WM}(V)$ | Min | Max | $I_T(mA)$ | $V_C(V)$ | $I_{PP}(A)$ | $I_D(\mu A)$ | UNI | BI |
| SMCJ5.0A | SMCJ5.0CA | 5 | 6.4 | 7.0 | 10 | 9.2 | 163.0 | 800 | GDE | BDE |
| SMCJ6.0A | SMCJ6.0CA | 6 | 6.7 | 7.4 | 10 | 10.3 | 145.7 | 800 | GDG | BDG |
| SMCJ6.5A | SMCJ6.5CA | 6.5 | 7.2 | 8.0 | 10 | 11.2 | 134.0 | 500 | GDK | BDK |
| SMCJ7.0A | SMCJ7.0CA | 7 | 7.8 | 8.6 | 10 | 12.0 | 125.0 | 200 | GDM | BDM |
| SMCJ7.5A | SMCJ7.5CA | 7.5 | 8.3 | 9.2 | 1 | 12.9 | 116.3 | 100 | GDP | BDP |
| SMCJ8.0A | SMCJ8.0CA | 8 | 8.9 | 9.8 | 1 | 13.6 | 110.3 | 50 | GDR | BDR |
| SMCJ8.5A | SMCJ8.5CA | 8.5 | 9.4 | 10.4 | 1 | 14.4 | 104.2 | 20 | GDT | BDT |
| SMCJ9.0A | SMCJ9.0CA | 9 | 10.0 | 11.1 | 1 | 15.4 | 97.4 | 10 | GDV | BDV |
| SMCJ10A | SMCJ10CA | 10 | 11.1 | 12.3 | 1 | 17.0 | 88.3 | 5 | GDY | BDY |
| SMCJ11A | SMCJ11CA | 11 | 12.2 | 13.5 | 1 | 18.2 | 82.5 | 1 | GDZ | BDZ |
| SMCJ12A | SMCJ12CA | 12 | 13.3 | 14.7 | 1 | 19.9 | 75.4 | 1 | GEE | BEE |
| SMCJ13A | SMCJ13CA | 13 | 14.4 | 15.9 | 1 | 21.5 | 69.8 | 1 | GEG | BEG |
| SMCJ14A | SMCJ14CA | 14 | 15.6 | 17.2 | 1 | 23.2 | 64.7 | 1 | GEK | BEK |
| SMCJ15A | SMCJ15CA | 15 | 16.7 | 18.5 | 1 | 24.4 | 61.5 | 1 | GEM | BEM |
| SMCJ16A | SMCJ16CA | 16 | 17.8 | 19.7 | 1 | 26.0 | 57.7 | 1 | GEP | BEP |
| SMCJ17A | SMCJ17CA | 17 | 18.9 | 20.9 | 1 | 27.6 | 54.4 | 1 | GER | BER |
| SMCJ18A | SMCJ18CA | 18 | 20.0 | 22.1 | 1 | 29.2 | 51.4 | 1 | GET | BET |
| SMCJ20A | SMCJ20CA | 20 | 22.2 | 24.5 | 1 | 32.4 | 46.3 | 1 | GEV | BEV |
| SMCJ22A | SMCJ22CA | 22 | 24.4 | 26.9 | 1 | 35.5 | 42.3 | 1 | GEX | BEX |
| SMCJ24A | SMCJ24CA | 24 | 26.7 | 29.5 | 1 | 38.9 | 38.6 | 1 | GEZ | BEZ |
| SMCJ26A | SMCJ26CA | 26 | 28.9 | 31.9 | 1 | 42.1 | 35.7 | 1 | GFE | BFE |
| SMCJ28A | SMCJ28CA | 28 | 31.1 | 34.4 | 1 | 45.4 | 33.1 | 1 | GFG | BFG |
| SMCJ30A | SMCJ30CA | 30 | 33.3 | 36.8 | 1 | 48.4 | 31.0 | 1 | GFK | BFK |
| SMCJ33A | SMCJ33CA | 33 | 36.7 | 40.6 | 1 | 53.3 | 28.2 | 1 | GFM | BFM |
| SMCJ36A | SMCJ36CA | 36 | 40.0 | 44.2 | 1 | 58.1 | 25.9 | 1 | GFP | BFP |
| SMCJ40A | SMCJ40CA | 40 | 44.4 | 49.1 | 1 | 64.5 | 23.3 | 1 | GFR | BFR |
| SMCJ43A | SMCJ43CA | 43 | 47.8 | 52.8 | 1 | 69.4 | 21.7 | 1 | GFT | BFT |
| SMCJ45A | SMCJ45CA | 45 | 50.0 | 55.3 | 1 | 72.7 | 20.6 | 1 | GFV | BFV |
| SMCJ48A | SMCJ48CA | 48 | 53.3 | 58.9 | 1 | 77.4 | 19.4 | 1 | GFX | BFX |
| SMCJ51A | SMCJ51CA | 51 | 56.7 | 62.7 | 1 | 82.4 | 18.2 | 1 | GFZ | BFZ |
| SMCJ54A | SMCJ54CA | 54 | 60.0 | 66.3 | 1 | 87.1 | 17.3 | 1 | GGE | BGE |
| SMCJ58A | SMCJ58CA | 58 | 64.4 | 71.2 | 1 | 93.6 | 16.1 | 1 | GGG | BGG |
| SMCJ60A | SMCJ60CA | 60 | 66.7 | 73.7 | 1 | 96.8 | 15.5 | 1 | GGK | BGK |
| SMCJ64A | SMCJ64CA | 64 | 71.1 | 78.6 | 1 | 103.0 | 14.6 | 1 | GGM | BGM |
| SMCJ70A | SMCJ70CA | 70 | 77.8 | 86.0 | 1 | 113.0 | 13.3 | 1 | GGP | BGP |
| SMCJ75A | SMCJ75CA | 75 | 83.3 | 92.1 | 1 | 121.0 | 12.4 | 1 | GGR | BGR |
| SMCJ78A | SMCJ78CA | 78 | 86.7 | 95.8 | 1 | 126.0 | 11.9 | 1 | GGT | BGT |
| SMCJ85A | SMCJ85CA | 85 | 94.4 | 104.0 | 1 | 137.0 | 11.0 | 1 | GGV | BGV |
| SMCJ90A | SMCJ90CA | 90 | 100.0 | 111.0 | 1 | 146.0 | 10.3 | 1 | GGX | BGX |
| SMCJ100A | SMCJ100CA | 100 | 111.0 | 123.0 | 1 | 162.0 | 9.3 | 1 | GGZ | BGZ |
| SMCJ110A | SMCJ110CA | 110 | 122.0 | 135.0 | 1 | 177 | 8.5 | 1 | GHE | BHE |
| SMCJ120A | SMCJ120CA | 120 | 133.0 | 147.0 | 1 | 193 | 7.8 | 1 | GHG | BHG |
| SMCJ130A | SMCJ130CA | 130 | 144.0 | 159.0 | 1 | 209 | 7.2 | 1 | GHK | BHK |
| SMCJ150A | SMCJ150CA | 150 | 167.0 | 185.0 | 1 | 243 | 6.2 | 1 | GHM | BHM |
| SMCJ160A | SMCJ160CA | 160 | 178.0 | 197.0 | 1 | 259 | 5.8 | 1 | GHP | BHP |
| SMCJ170A | SMCJ170CA | 170 | 189.0 | 209.0 | 1 | 275 | 5.5 | 1 | GHR | BHR |
| SMCJ180A | SMCJ180CA | 180 | 201.0 | 222.0 | 1 | 292 | 5.1 | 1 | GHT | BHT |
| SMCJ200A | SMCJ200CA | 200 | 224.0 | 247.0 | 1 | 324 | 4.6 | 1 | GHV | BHV |

For bi-directional type having V_{WM} of 10volts and less, the I_R limit is double. For parts without A, the V_{BR} is $\pm 10\%$

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | | Reverse Stand-Off Voltage | Breakdown Voltage $V_{BR}(V)$ | | Test Current | Max. Clamping Voltage @ I_{PP} | Peak Pulse Current | Reverse Leakage Current @ V_{WM} | Marking Code | |
|-----------------|-----------|---------------------------|-------------------------------|-------|--------------|----------------------------------|--------------------|------------------------------------|--------------|-----|
| SMCJ220A | SMCJ220CA | 220 | 246.0 | 272.0 | 1 | 356 | 4.2 | 1 | GHX | BHX |
| SMCJ250A | SMCJ250CA | 250 | 279.0 | 309.0 | 1 | 405 | 3.7 | 1 | GHZ | BHZ |
| SMCJ300A | SMCJ300CA | 300 | 335.0 | 371.0 | 1 | 486 | 3.1 | 1 | GJE | BJE |
| SMCJ350A | SMCJ350CA | 350 | 391.0 | 432.0 | 1 | 567 | 2.6 | 1 | GJG | BJG |
| SMCJ400A | SMCJ400CA | 400 | 447.0 | 494.0 | 1 | 648 | 2.3 | 1 | GJK | BJK |
| SMCJ440A | SMCJ440CA | 440 | 492.0 | 543.0 | 1 | 713 | 2.1 | 1 | GJM | BJM |

For bi-directional type having V_{WM} of 10volts and less, the I_R limit is double. For parts without A, the V_{BR} is $\pm 10\%$

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

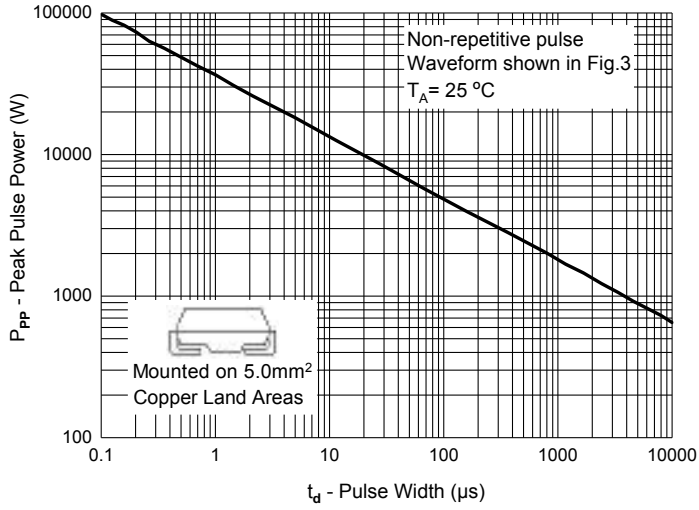


Fig. 2 - Typical Junction Capacitance

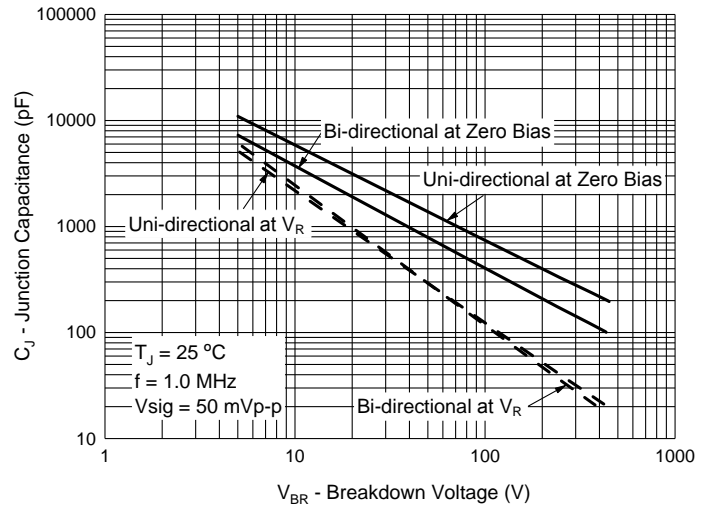


Fig. 3 - Pulse Waveform

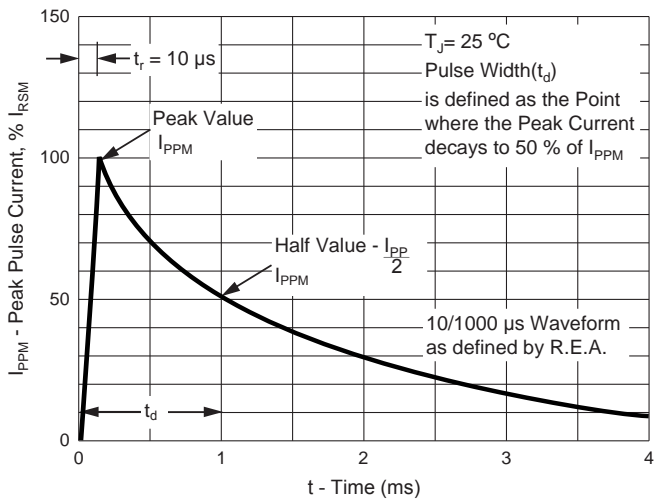
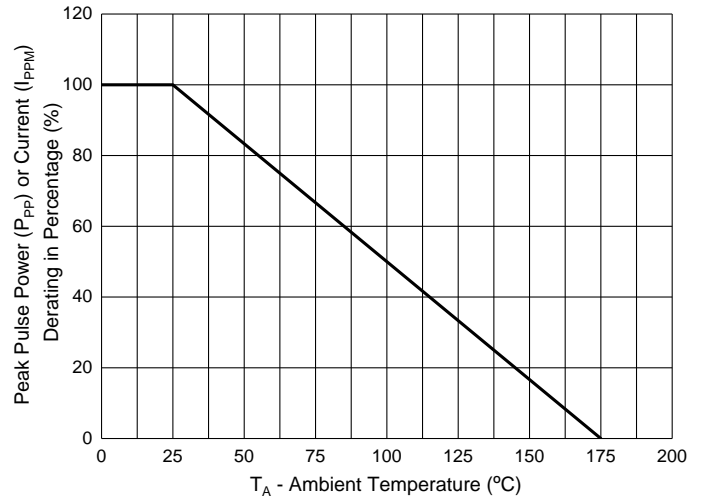


Fig. 4 - Pulse Derating Curve



Ordering Information

| Device | Packing |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/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. *Micro Commercial Components Corp.* products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

*****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.

单击下面可查看定价，库存，交付和生命周期等信息

[>>MCC\(美微科\)](#)