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

Features

- AEC-Q101 Qualified
- For Surface Mount Application in Order to Optimize Board Space
- Low Profile Package
- Low Inductance
- Excellent Clamping Capability
- Fast Response Time: Typical Less Than 1.0ps From 0 Volts to V_{BR} Minimum
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMCJ1.5KE12CAHE3 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: Color Band Denotes Positive End(cathode) Except Bi-Directional Types
- Maximum Soldering Temperature: 260°C/10 Seconds at Terminals
- Manufacturing Code Added for Better Tracking
- Terminals: Solderable Per MIL-STD-750, Method 2026

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

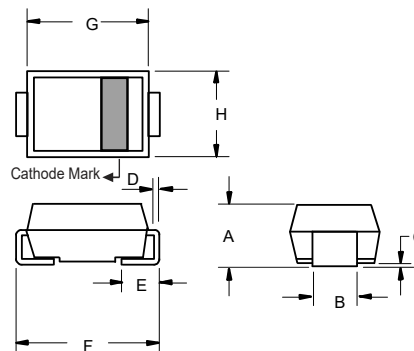
| | | | |
|--|----------|---------------|----------|
| Peak Pulse Power Surge Current on 10/1000µs Waveform | I_{PP} | See the Table | Note 3 |
| Peak Pulse Power Dissipation | P_{PP} | 1500W(Min) | Note 3,4 |

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.1.
4. Mounted on 8.0mm² copper pads to each terminal.

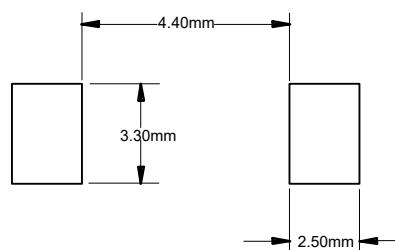
1500 Watt TVS
12 to 91 Volts

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 |
|------------------|---------------------------|-------------------------------|-------|--------------|----------------------------------|--------------------|------------------------------------|--------------|
| | $V_{WM}(V)$ | Min | Max | $I_T(mA)$ | $V_C(V)$ | $I_{PP}(A)$ | $I_D(\mu A)$ | |
| SMCJ1.5KE12AHE3 | 10.20 | 11.40 | 12.60 | 1 | 16.7 | 91.0 | 5 | 12A |
| SMCJ1.5KE13AHE3 | 11.10 | 12.40 | 13.70 | 1 | 18.2 | 83.5 | 1 | 13A |
| SMCJ1.5KE15AHE3 | 12.80 | 14.30 | 15.80 | 1 | 21.2 | 71.7 | 1 | 15A |
| SMCJ1.5KE16AHE3 | 13.60 | 15.20 | 16.80 | 1 | 22.5 | 67.6 | 1 | 16A |
| SMCJ1.5KE18AHE3 | 15.30 | 17.10 | 18.90 | 1 | 25.5 | 60.3 | 1 | 18A |
| SMCJ1.5KE20AHE3 | 17.10 | 19.00 | 21.00 | 1 | 27.7 | 54.9 | 1 | 20A |
| SMCJ1.5KE22AHE3 | 18.80 | 20.90 | 23.10 | 1 | 30.6 | 49.7 | 1 | 22A |
| SMCJ1.5KE24AHE3 | 20.50 | 22.80 | 25.20 | 1 | 33.2 | 45.8 | 1 | 24A |
| SMCJ1.5KE27AHE3 | 23.10 | 25.70 | 28.40 | 1 | 37.5 | 40.5 | 1 | 27A |
| SMCJ1.5KE30AHE3 | 25.60 | 28.50 | 31.50 | 1 | 41.4 | 36.7 | 1 | 30A |
| SMCJ1.5KE33AHE3 | 28.20 | 31.40 | 34.70 | 1 | 45.7 | 33.3 | 1 | 33A |
| SMCJ1.5KE36AHE3 | 30.80 | 34.20 | 37.80 | 1 | 49.9 | 30.5 | 1 | 36A |
| SMCJ1.5KE39AHE3 | 33.30 | 37.10 | 41.00 | 1 | 53.9 | 28.2 | 1 | 39A |
| SMCJ1.5KE43AHE3 | 36.80 | 40.90 | 45.20 | 1 | 59.3 | 25.6 | 1 | 43A |
| SMCJ1.5KE47AHE3 | 40.20 | 44.70 | 49.40 | 1 | 64.8 | 23.5 | 1 | 47A |
| SMCJ1.5KE51AHE3 | 43.60 | 48.50 | 53.60 | 1 | 70.1 | 21.7 | 1 | 51A |
| SMCJ1.5KE56AHE3 | 47.80 | 53.20 | 58.80 | 1 | 77.0 | 19.7 | 1 | 56A |
| SMCJ1.5KE62AHE3 | 53.00 | 58.90 | 65.10 | 1 | 85.0 | 17.9 | 1 | 62A |
| SMCJ1.5KE68AHE3 | 58.10 | 64.60 | 71.40 | 1 | 92.0 | 16.5 | 1 | 68A |
| SMCJ1.5KE75AHE3 | 64.10 | 71.30 | 78.80 | 1 | 103.0 | 14.8 | 1 | 75A |
| SMCJ1.5KE82AHE3 | 70.10 | 77.90 | 86.10 | 1 | 113.0 | 13.5 | 1 | 82A |
| SMCJ1.5KE91AHE3 | 77.80 | 86.50 | 95.50 | 1 | 125.0 | 12.2 | 1 | 91A |
| SMCJ1.5KE12CAHE3 | 10.20 | 11.40 | 12.60 | 1 | 16.7 | 91.0 | 5 | 12C |
| SMCJ1.5KE13CAHE3 | 11.10 | 12.40 | 13.70 | 1 | 18.2 | 83.5 | 1 | 13C |
| SMCJ1.5KE15CAHE3 | 12.80 | 14.30 | 15.80 | 1 | 21.2 | 70.8 | 1 | 15C |
| SMCJ1.5KE16CAHE3 | 13.60 | 15.20 | 16.80 | 1 | 22.5 | 66.7 | 1 | 16C |
| SMCJ1.5KE18CAHE3 | 15.30 | 17.10 | 18.90 | 1 | 25.5 | 60.3 | 1 | 18C |
| SMCJ1.5KE20CAHE3 | 17.10 | 19.00 | 21.00 | 1 | 27.7 | 54.9 | 1 | 20C |
| SMCJ1.5KE22CAHE3 | 18.80 | 20.90 | 23.10 | 1 | 30.6 | 49.7 | 1 | 22C |
| SMCJ1.5KE24CAHE3 | 20.50 | 22.80 | 25.20 | 1 | 33.2 | 45.8 | 1 | 24C |
| SMCJ1.5KE27CAHE3 | 23.10 | 25.70 | 28.40 | 1 | 37.5 | 40.5 | 1 | 27C |
| SMCJ1.5KE30CAHE3 | 25.60 | 28.50 | 31.50 | 1 | 41.4 | 36.7 | 1 | 30C |
| SMCJ1.5KE33CAHE3 | 28.20 | 31.40 | 34.70 | 1 | 45.7 | 33.3 | 1 | 33C |
| SMCJ1.5KE36CAHE3 | 30.80 | 34.20 | 37.80 | 1 | 49.9 | 30.5 | 1 | 36C |
| SMCJ1.5KE39CAHE3 | 33.30 | 37.10 | 41.00 | 1 | 53.9 | 28.2 | 1 | 39C |
| SMCJ1.5KE43CAHE3 | 36.80 | 40.90 | 45.20 | 1 | 59.3 | 25.6 | 1 | 43C |
| SMCJ1.5KE47CAHE3 | 40.20 | 44.70 | 49.40 | 1 | 64.8 | 23.5 | 1 | 47C |
| SMCJ1.5KE51CAHE3 | 43.60 | 48.50 | 53.60 | 1 | 70.1 | 21.7 | 1 | 51C |
| SMCJ1.5KE56CAHE3 | 47.80 | 53.20 | 58.80 | 1 | 77.0 | 19.7 | 1 | 56C |
| SMCJ1.5KE62CAHE3 | 53.00 | 58.90 | 65.10 | 1 | 85.0 | 17.9 | 1 | 62C |
| SMCJ1.5KE68CAHE3 | 58.10 | 64.60 | 71.40 | 1 | 92.0 | 16.5 | 1 | 68C |
| SMCJ1.5KE75CAHE3 | 64.10 | 71.30 | 78.80 | 1 | 103.0 | 14.8 | 1 | 75C |
| SMCJ1.5KE82CAHE3 | 70.10 | 77.90 | 86.10 | 1 | 113.0 | 13.5 | 1 | 82C |
| SMCJ1.5KE91CAHE3 | 77.80 | 86.50 | 95.50 | 1 | 125.0 | 12.2 | 1 | 91C |

For bi-directional type having V_{WM} of 10 volts and less, the I_R limit is double.
The available parts are "A" type only, the parts without A (V_{BR} is $\pm 10\%$) is not available.

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

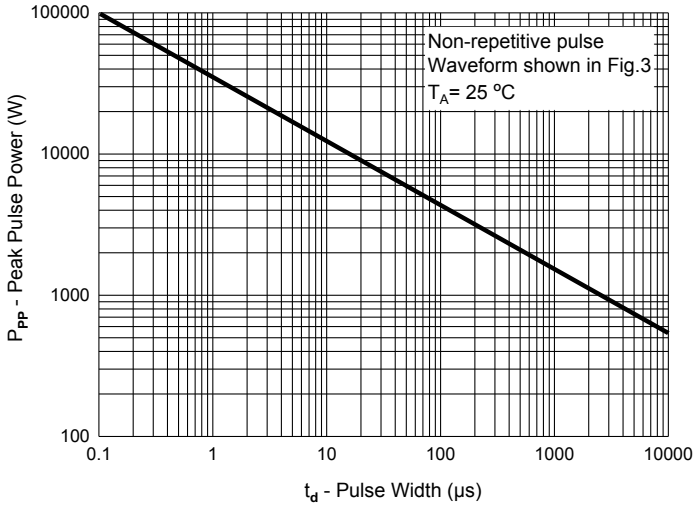


Fig. 2 - Typical Junction Capacitance

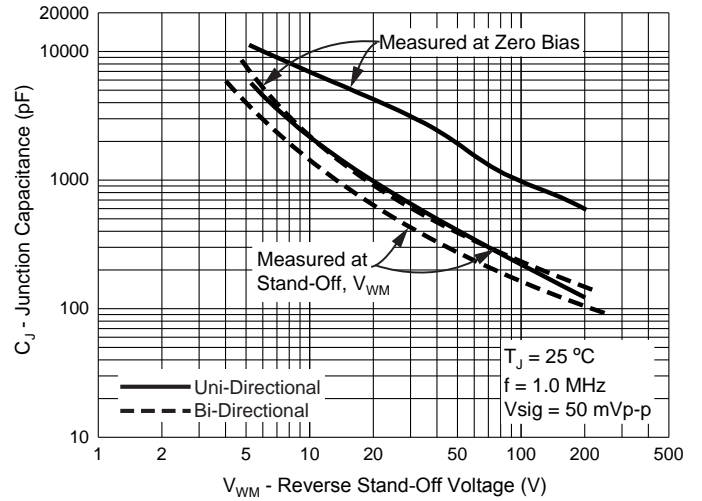


Fig. 3 - Pulse Waveform

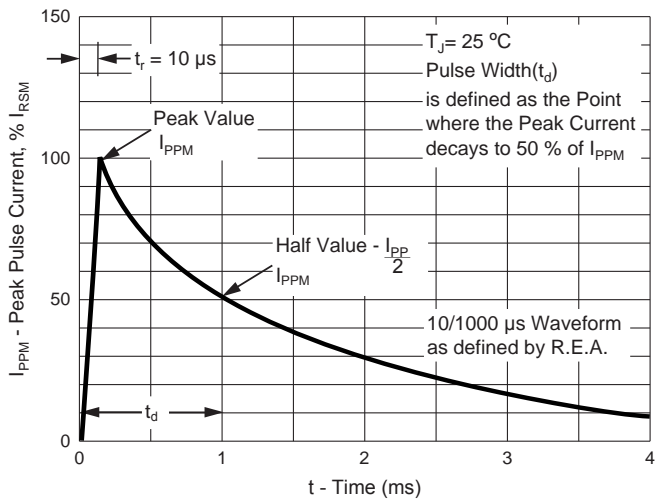
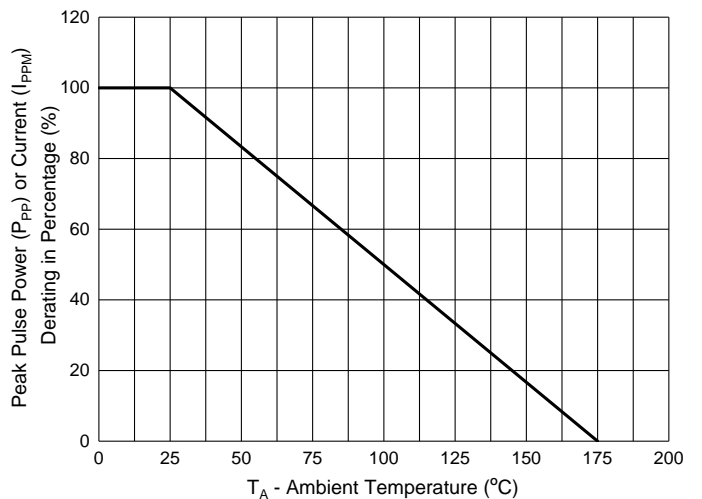


Fig. 4 - Pulse Derating Curve



Ordering Information

| Device | Packing |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

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