## Features

- AEC-Q101 Qualified
- Low Leakage Current
- Excellent Clamping Capability
- Bi-directional Polarity
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, ±30kV(Air),±30kV (Contact)

# 4600 Watt
# TVS
# 10 to 43 Volts

## Maximum Ratings

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power Surge Current with a 10/1000μs Waveform(Note2) | $I_{PPM}$ | See Next Table | A |
| Peak Pulse Power Dissipationwith a 10/1000μs Waveform | $P_{PPM}$ | 4600 | W |
| Peak Pulse Power Dissipation with a 10/10000μs Waveform | $P_{PPM}$ | 3600 | W |
| Power Dissipation On Infinite Heatsink TL=25°C | $P_D$ | 5 | W |
| Peak Forward Surge Current Unidirectional Only(Note3) | $I_{FSM}$ | 600 | A |
| Operating Junction Temperature Range | $T_J$ | -55 to +175 | ˚C |
| Storage Temperature Range | $T_{STG}$ | -55 to +175 | ˚C |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | 1.2 | ˚C/W |

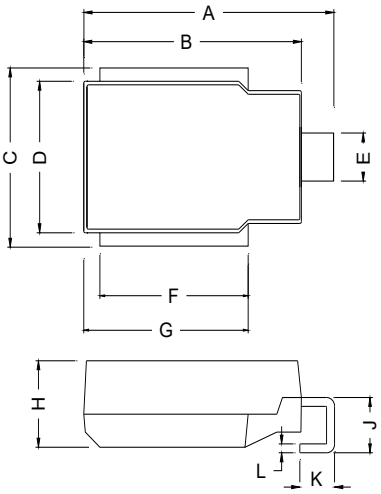
Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.
2. Non-repetitive current pulse, per Fig.2 and derated above $T_A$=25°C per Fig.3
3. 8.3 ms single half sine-wave

## Internal Structure

| Description | Simplified outline | Graphic symbol |
|---|---|---|
| Uni-directional | MCC XXXX YYWW | Cathode (1) Anode (2) |
| Bi-directional | MCC XXXX YYWW | (1) (2) |

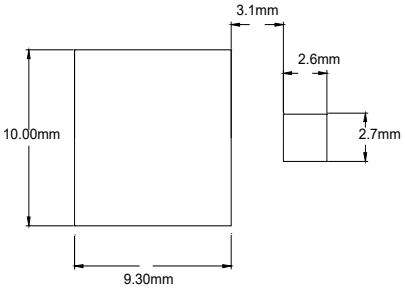
XXXX = Marking code YYWW = Date Code

## DO-218AB




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | 0.590 | 0.630 | 15.00 | 16.00 | |
| B | 0.524 | 0.539 | 13.30 | 13.70 | |
| C | 0.374 | 0.413 | 9.50 | 10.50 | |
| D | 0.323 | 0.339 | 8.20 | 8.70 | |
| E | 0.091 | 0.114 | 2.30 | 3.00 | |
| F | 0.343 | 0.366 | 8.70 | 9.50 | |
| G | 0.382 | 0.406 | 9.70 | 10.50 | |
| H | 0.189 | 0.205 | 4.70 | 5.20 | |
| J | 0.098 | 0.138 | 2.50 | 3.50 | |
| K | 0.067 | 0.106 | 1.70 | 2.80 | |
| L | 0.020 | 0.028 | 0.50 | 0.70 | |

**SUGGESTED SOLDER PAD LAYOUT**



## Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | | Working Peak Reverse Voltage VRWM (V) | Breakdown Voltage VBR @IT | | | Maximum Reverse Leakage IR @VRWM (μA) | Maximum IR @VRWM TJ=175 (μA) | Maximum Reverse Surge Current IPP (A)(1) | Maximum Clamping Voltage VC@IPP (V) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Min (V) | Max (V) | IT(mA) | | | | |
| SM6S10AHE3 | SM6S10CAHE3 | 10 | 11.1 | 12.3 | 5 | 15 | 250 | 271 | 17.0 |
| SM6S11AHE3 | SM6S11CAHE3 | 11 | 12.2 | 13.5 | 5 | 10 | 150 | 253 | 18.2 |
| SM6S12AHE3 | SM6S12CAHE3 | 12 | 13.3 | 14.7 | 5 | 10 | 150 | 231 | 19.9 |
| SM6S13AHE3 | SM6S13CAHE3 | 13 | 14.4 | 15.9 | 5 | 10 | 150 | 214 | 21.5 |
| SM6S14AHE3 | SM6S14CAHE3 | 14 | 15.6 | 17.2 | 5 | 10 | 150 | 198 | 23.2 |
| SM6S15AHE3 | SM6S15CAHE3 | 15 | 16.7 | 18.5 | 5 | 10 | 150 | 189 | 24.4 |
| SM6S16AHE3 | SM6S16CAHE3 | 16 | 17.8 | 19.7 | 5 | 10 | 150 | 177 | 26.0 |
| SM6S17AHE3 | SM6S17CAHE3 | 17 | 18.9 | 20.9 | 5 | 10 | 150 | 167 | 27.6 |
| SM6S18AHE3 | SM6S18CAHE3 | 18 | 20.0 | 22.1 | 5 | 10 | 150 | 158 | 29.2 |
| SM6S20AHE3 | SM6S20CAHE3 | 20 | 22.2 | 24.5 | 5 | 10 | 150 | 142 | 32.4 |
| SM6S22AHE3 | SM6S22CAHE3 | 22 | 24.4 | 26.9 | 5 | 10 | 150 | 130 | 35.5 |
| SM6S24AHE3 | SM6S24CAHE3 | 24 | 26.7 | 29.5 | 5 | 10 | 150 | 118 | 38.9 |
| SM6S26AHE3 | SM6S26CAHE3 | 26 | 28.9 | 31.9 | 5 | 10 | 150 | 109 | 42.1 |
| SM6S28AHE3 | SM6S28CAHE3 | 28 | 31.1 | 34.4 | 5 | 10 | 150 | 101 | 45.4 |
| SM6S30AHE3 | SM6S30CAHE3 | 30 | 33.3 | 36.8 | 5 | 10 | 150 | 95 | 48.4 |
| SM6S33AHE3 | SM6S33CAHE3 | 33 | 36.7 | 40.6 | 5 | 10 | 150 | 86 | 53.3 |
| SM6S36AHE3 | SM6S36CAHE3 | 36 | 40.0 | 44.2 | 5 | 10 | 150 | 79 | 58.1 |
| SM6S40AHE3 | SM6S40CAHE3 | 40 | 44.4 | 49.1 | 5 | 10 | 150 | 71 | 64.5 |
| SM6S43AHE3 | SM6S43CAHE3 | 43 | 47.8 | 52.8 | 5 | 10 | 150 | 66 | 69.4 |

Note: 1.Surge current waveform is defined at 10/1000us waveform
2.For all types maximum $V_F$ = 1.9V at $I_F$ = 100A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

## Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

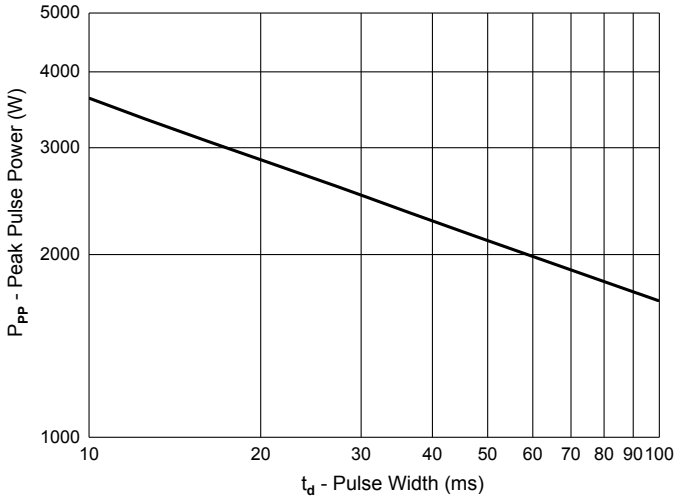



Fig. 2 - Steady State Power Derating Curve

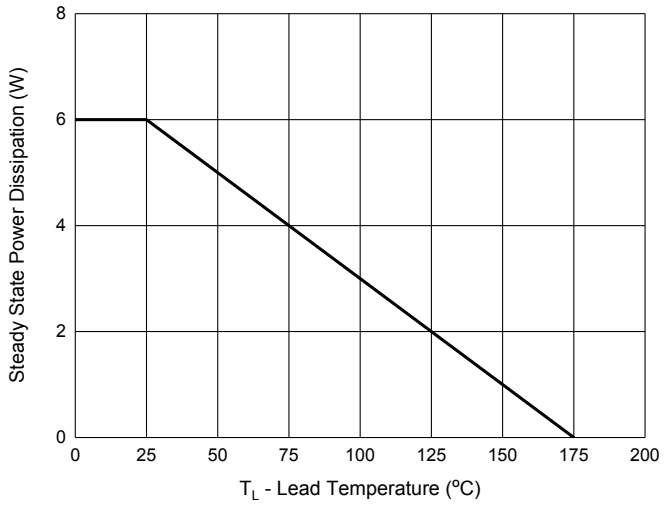



Fig. 3 - Pulse Waveform

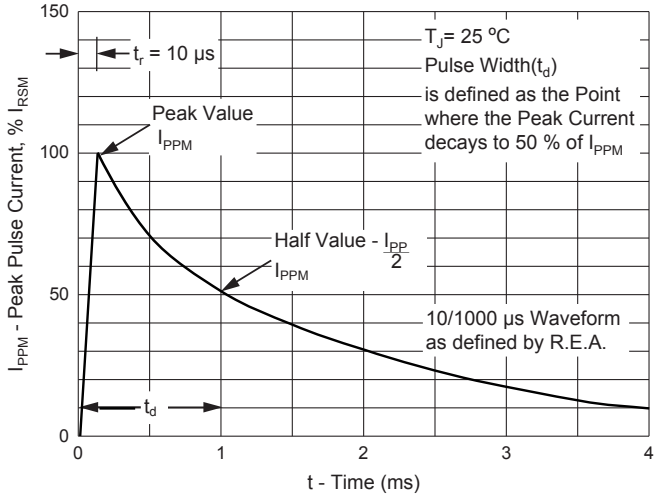
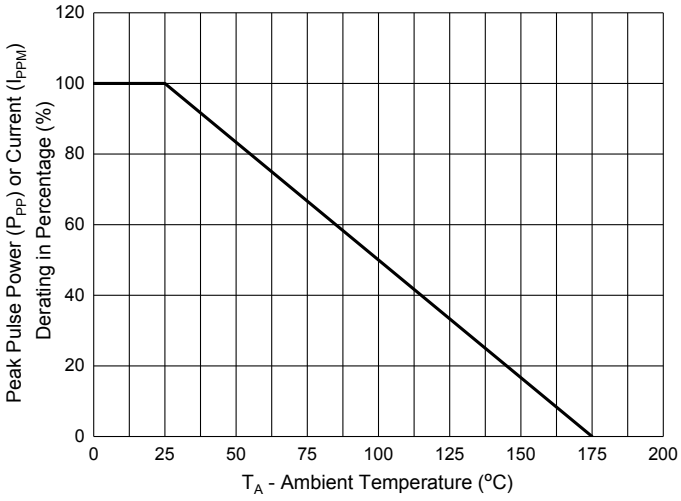



Fig. 4 - Pulse Derating Curve



## Ordering Information

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel:750pcs/Reel |