

**Features**

- AEC-Q101 Qualified
- Meet ISO 7637-2 5a/5b and ISO 16750 Load Dump Test (Varied by Test Condition)
- Low Leakage Current
- Glass Passivated Junction
- Excellent Clamping Capability
- Bi-directional Polarity
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant <sup>(Note1)</sup> ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, ±30kV(Air), ±30kV (Contact)

**Maximum Ratings**

| Parameter   | Symbol           | Value          | Unit |
|---|------------------|----------------|------|
| Peak Pulse Power Surge Current with a 10/1000µs Waveform <sup>(Note2)</sup> | I <sub>PPM</sub> | See Next Table | A    |
| Peak Pulse Power Dissipation with a 10/1000µs Waveform                      | P <sub>PPM</sub> | 6600           | W    |
| Peak Pulse Power Dissipation with a 10/10000µs Waveform                     | P <sub>PPM</sub> | 5200           | W    |
| Power Dissipation On Infinite Heatsink TL=25°C                              | P <sub>D</sub>   | 8.0            | W    |
| Peak Forward Surge Current Unidirectional Only <sup>(Note3)</sup>           | I <sub>FSM</sub> | 700            | A    |
| Operating Junction Temperature Range  | T <sub>J</sub>   | -55 to +175    | °C   |
| Storage Temperature Range   | T <sub>STG</sub> | -55 to +175    | °C   |
| Typical Thermal Resistance Junction to Case                                 | R <sub>θJC</sub> | 1.1            | °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<sub>A</sub>=25°C per Fig.3  
 3. 8.3 ms single half sine-wave

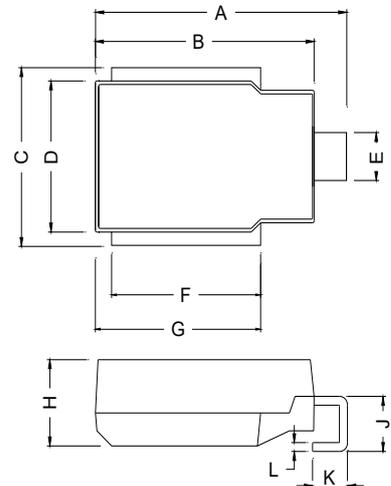
**Internal Structure**

| Description     | Simplified outline | Graphic symbol |
|-----------------|--------------------|----------------|
| Uni-directional |                    |                |
| Bi-directional  |                    |                |

XXXX = Marking code YYWW = Date Code

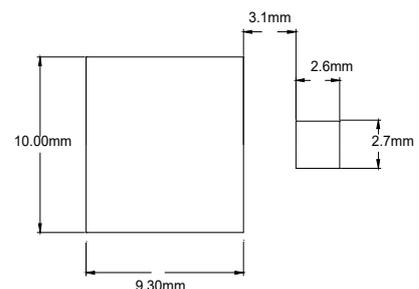
**6600 Watt  
TVS  
10 to 43 Volts**

**DO-218AB**



| 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 |                | Breakdown Voltage $V_{BR}$ @ $I_T$ |         |            | Maximum Reverse Leakage $I_R$ | Maximum $I_R$ @ $V_{RWM}$<br>$T_J=175$ | Working Peak Reverse Voltage $V_{RWM}$ | Maximum Reverse Surge Current IPP | Maximum Clamping Voltage |
|-----------------|----------------|------------------------------------|---------|------------|-------------------------------|--|--|-----------------------------------|--------------------------|
| Uni-directional | Bi-directional | Min (V)                            | Max (V) | $I_T$ (mA) | @ $V_{RWM}$ ( $\mu A$ )       | ( $\mu A$ )                            | (V)                                    | (A) <sup>(1)</sup>                | $V_C$ @ $I_{PP}$ (V)     |
| SM8S10AHE3      |                | 11.10                              | 12.30   | 5          | 15                            | 250                                    | 10                                     | 388.0                             | 17.0                     |
| SM8S11AHE3      |                | 12.20                              | 13.50   | 5          | 10                            | 150                                    | 11                                     | 363.0                             | 18.2                     |
| SM8S12AHE3      |                | 13.30                              | 14.70   | 5          | 10                            | 150                                    | 12                                     | 332.0                             | 19.9                     |
| SM8S13AHE3      |                | 14.40                              | 15.90   | 5          | 10                            | 150                                    | 13                                     | 307.0                             | 21.5                     |
| SM8S14AHE3      | SM8S14CAHE3    | 15.60                              | 17.20   | 5          | 10                            | 150                                    | 14                                     | 284.0                             | 23.2                     |
| SM8S15AHE3      | SM8S15CAHE3    | 16.70                              | 18.50   | 5          | 10                            | 150                                    | 15                                     | 270.0                             | 24.4                     |
| SM8S16AHE3      | SM8S16CAHE3    | 17.80                              | 19.70   | 5          | 10                            | 150                                    | 16                                     | 254.0                             | 26.0                     |
| SM8S17AHE3      | SM8S17CAHE3    | 18.90                              | 20.90   | 5          | 10                            | 150                                    | 17                                     | 239.0                             | 27.6                     |
| SM8S18AHE3      | SM8S18CAHE3    | 20.00                              | 22.10   | 5          | 10                            | 150                                    | 18                                     | 226.0                             | 29.2                     |
| SM8S20AHE3      | SM8S20CAHE3    | 22.20                              | 24.50   | 5          | 10                            | 150                                    | 20                                     | 204.0                             | 32.4                     |
| SM8S22AHE3      | SM8S22CAHE3    | 24.40                              | 26.90   | 5          | 10                            | 150                                    | 22                                     | 186.0                             | 35.5                     |
| SM8S24AHE3      | SM8S24CAHE3    | 26.70                              | 29.50   | 5          | 10                            | 150                                    | 24                                     | 170.0                             | 38.9                     |
| SM8S26AHE3      | SM8S26CAHE3    | 28.90                              | 31.90   | 5          | 10                            | 150                                    | 26                                     | 157.0                             | 42.1                     |
| SM8S28AHE3      | SM8S28CAHE3    | 31.10                              | 34.40   | 5          | 10                            | 150                                    | 28                                     | 145.0                             | 45.4                     |
| SM8S30AHE3      | SM8S30CAHE3    | 33.30                              | 36.80   | 5          | 10                            | 150                                    | 30                                     | 136.0                             | 48.4                     |
| SM8S33AHE3      | SM8S33CAHE3    | 36.70                              | 40.60   | 5          | 10                            | 150                                    | 33                                     | 124.0                             | 53.3                     |
| SM8S36AHE3      | SM8S36CAHE3    | 40.00                              | 44.20   | 5          | 10                            | 150                                    | 36                                     | 114.0                             | 58.1                     |
| SM8S40AHE3      | SM8S40CAHE3    | 44.40                              | 49.10   | 5          | 10                            | 150                                    | 40                                     | 102.0                             | 64.5                     |
| SM8S43AHE3      | SM8S43CAHE3    | 47.80                              | 52.80   | 5          | 10                            | 150                                    | 43                                     | 95.1                              | 69.4                     |

Note: 1. Surge current waveform is defined at 10/1000us waveform

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

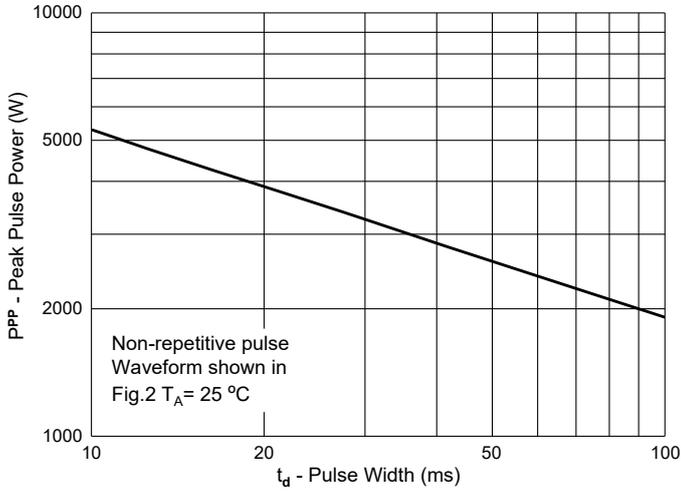


Fig. 2 - Pulse Waveform

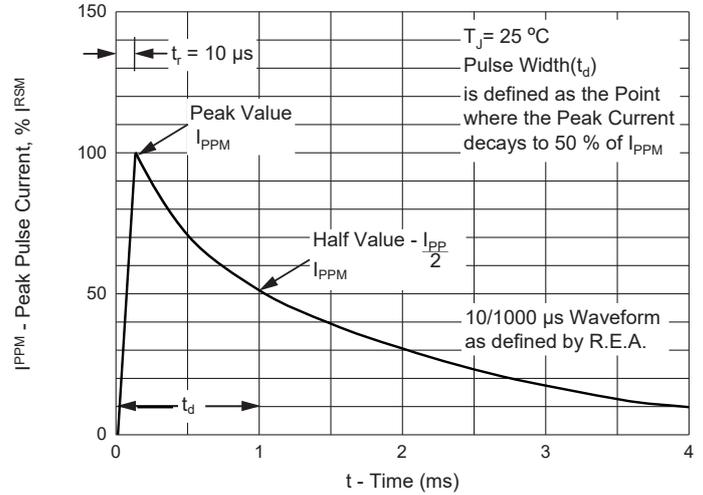


Fig. 3 - Pulse Derating Curve

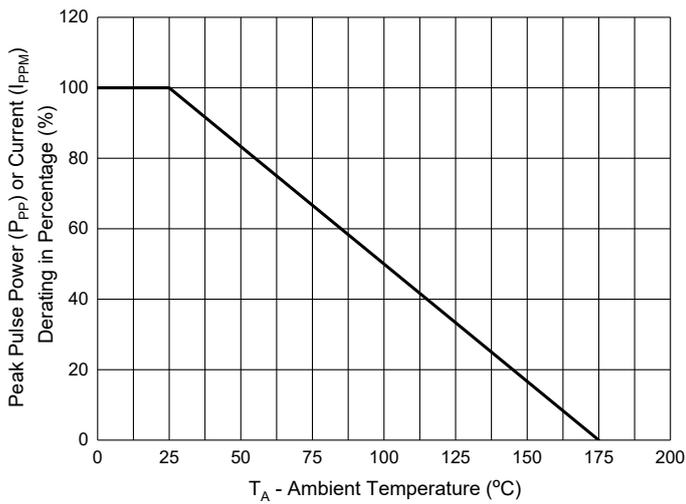
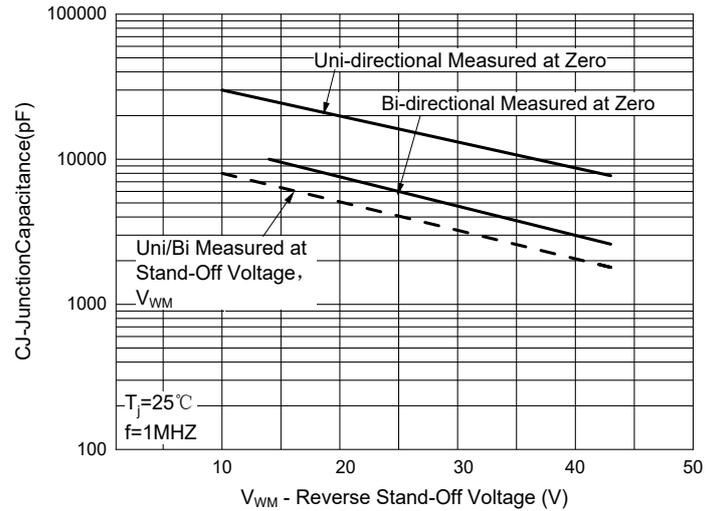


Fig. 4 - Typical Junction Capacitance



## Ordering Information

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

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