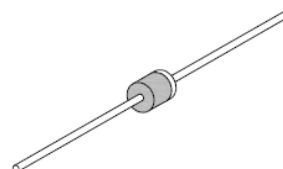


## 400W Transient Voltage Suppressor

### Features

- 400W peak pulse power capability on 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- High temperature soldering guaranteed:  
260°C/10 seconds, 0.375" (9.5mm) lead length at 5lbs. (2.3kg) tension
- RoHS Compliant



R-1



### Mechanical Data

|                   |                                                     |
|-------------------|-----------------------------------------------------|
| <b>Case:</b>      | Molded plastic over a passivated junction           |
| <b>Epoxy:</b>     | Meets UL 94V-0 flammability rating                  |
| <b>Terminals:</b> | Axial leads, solderable per MIL-STD-202, Method 208 |
| <b>Polarity:</b>  | Color band denoted cathode except bipolar           |
| <b>Weight:</b>    | 0.0064 ounce, 0.181 gram                            |

### Maximum Ratings ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

| Symbol                                | Description                                                                                       | Value       | Unit | Conditions   |
|---------------------------------------|---------------------------------------------------------------------------------------------------|-------------|------|--------------|
| <b>V<sub>BR</sub></b>                 | Breakdown Voltage                                                                                 | 6.8 to 43   | V    |              |
| <b>PPPM</b>                           | Peak Power Dissipation with a 10/1000μs Waveform                                                  | Minimum 400 | W    | Note (1)     |
| <b>IPPM</b>                           | Peak Pulse Power Current with a 10/1000 us Waveform                                               | See Table   | A    | Note (1) (2) |
| <b>P<sub>M(AV)</sub></b>              | Power Dissipation at T <sub>L</sub> =75° C, Lead Lengths 0.375" (9.5mm)                           | 1.0         | W    | Note (2)     |
| <b>I<sub>FSM</sub></b>                | Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method) | 40          | A    | Note (3)     |
| <b>V<sub>F</sub></b>                  | Maximum Instantaneous Forward Voltage at 25A                                                      | 3.5         | V    | Note (3)     |
| <b>T<sub>J</sub>, T<sub>STG</sub></b> | Operating Junction and Storage Temperature Range                                                  | -55 to 175  | ° C  |              |

# 400W Transient Voltage Suppressor

## MP4KE6.8A - MP4KE43CA

- Notes:** (1) Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig. 2  
 (2) Mounted on copper pads area of 1.6×1.6" (40×40mm)  
 (3) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

### Electrical Characteristics (*T<sub>Ambient</sub>*=25°C unless noted otherwise)

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| P/N       |            | Stand-Off Voltage | Breakdown Voltage @ Test Current (note1) |      |          | Max. Reverse Leakage Current @ V WM | Max. Clamping Voltage @ I PPM | Max. Peak Pulse Current | Max. Temperature coefficient of V BR (%/° C) |
|-----------|------------|-------------------|------------------------------------------|------|----------|-------------------------------------|-------------------------------|-------------------------|----------------------------------------------|
|           |            |                   | V BR                                     |      | I T (mA) |                                     |                               |                         |                                              |
| Uni-Polar | Bi-Polar   | V WM (V)          | Min.                                     | Max. |          |                                     | ID (μA) (note2)               | V C (V)                 | I PPM (A) (note1)                            |
| MP4KE6.8A | MP4KE6.8CA | 5.8               | 6.45                                     | 7.14 | 10       | 300                                 | 10.5                          | 28.6                    | 0.057                                        |
| MP4KE7.5A | MP4KE7.5CA | 6.4               | 7.13                                     | 7.88 | 10       | 150                                 | 11.3                          | 26.5                    | 0.061                                        |
| MP4KE8.2A | MP4KE8.2CA | 7.02              | 7.79                                     | 8.61 | 10       | 50                                  | 12.1                          | 24.8                    | 0.065                                        |
| MP4KE9.1A | MP4KE9.1CA | 7.78              | 8.65                                     | 9.55 | 1.0      | 10                                  | 13.4                          | 22.4                    | 0.068                                        |
| MP4KE10A  | MP4KE10CA  | 8.55              | 9.5                                      | 10.5 | 1.0      | 5.0                                 | 14.5                          | 27.6                    | 0.073                                        |
| MP4KE11A  | MP4KE11CA  | 9.40              | 10.5                                     | 11.6 | 1.0      | 2.0                                 | 15.6                          | 25.6                    | 0.075                                        |
| MP4KE12A  | MP4KE12CA  | 10.2              | 11.4                                     | 12.6 | 1.0      | 1.0                                 | 16.7                          | 24.0                    | 0.078                                        |
| MP4KE13A  | MP4KE13CA  | 11.1              | 12.4                                     | 13.7 | 1.0      | 1.0                                 | 18.2                          | 22.0                    | 0.081                                        |
| MP4KE15A  | MP4KE15CA  | 12.8              | 14.3                                     | 15.8 | 1.0      | 1.0                                 | 21.2                          | 18.9                    | 0.084                                        |
| MP4KE16A  | MP4KE16CA  | 13.6              | 15.2                                     | 16.8 | 1.0      | 1.0                                 | 22.5                          | 17.8                    | 0.086                                        |
| MP4KE18A  | MP4KE18CA  | 15.3              | 17.1                                     | 18.9 | 1.0      | 1.0                                 | 25.5                          | 15.9                    | 0.088                                        |
| MP4KE20A  | MP4KE20CA  | 17.1              | 19.0                                     | 21.0 | 1.0      | 1.0                                 | 27.7                          | 14.4                    | 0.090                                        |
| MP4KE22A  | MP4KE22CA  | 18.8              | 20.9                                     | 23.1 | 1.0      | 1.0                                 | 30.6                          | 13.1                    | 0.092                                        |
| MP4KE24A  | MP4KE24CA  | 20.5              | 22.8                                     | 25.2 | 1.0      | 1.0                                 | 33.2                          | 12.0                    | 0.094                                        |
| MP4KE27A  | MP4KE27CA  | 23.1              | 25.7                                     | 28.4 | 1.0      | 1.0                                 | 37.5                          | 10.7                    | 0.096                                        |
| MP4KE30A  | MP4KE30CA  | 25.6              | 28.5                                     | 31.5 | 1.0      | 1.0                                 | 41.4                          | 9.7                     | 0.097                                        |
| MP4KE33A  | MP4KE33CA  | 28.2              | 31.4                                     | 34.7 | 1.0      | 1.0                                 | 45.7                          | 8.8                     | 0.098                                        |
| MP4KE36A  | MP4KE36CA  | 30.8              | 34.2                                     | 37.8 | 1.0      | 1.0                                 | 49.9                          | 8.0                     | 0.099                                        |
| MP4KE39A  | MP4KE39CA  | 33.3              | 37.1                                     | 41.0 | 1.0      | 1.0                                 | 53.9                          | 7.4                     | 0.100                                        |
| MP4KE43A  | MP4KE43CA  | 36.8              | 40.9                                     | 45.2 | 1.0      | 1.0                                 | 59.3                          | 6.7                     | 0.101                                        |

- Note:** 1. V(BR) measured after IT applied for 300μs, IT=square wave pulse or equivalent.  
 2. Surge current waveform per Fig. 3 and derated per Fig. 2

# 400W Transient Voltage Suppressor

## MP4KE6.8A - MP4KE43CA

### Typical Characteristics Curves

Fig.1- Peak Pulse Power Rating Curve

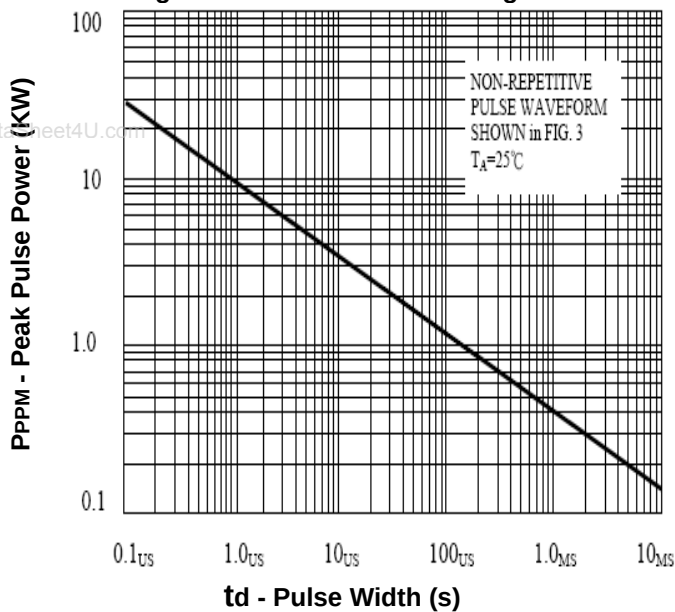


Fig.2- Pulse Derating Curve

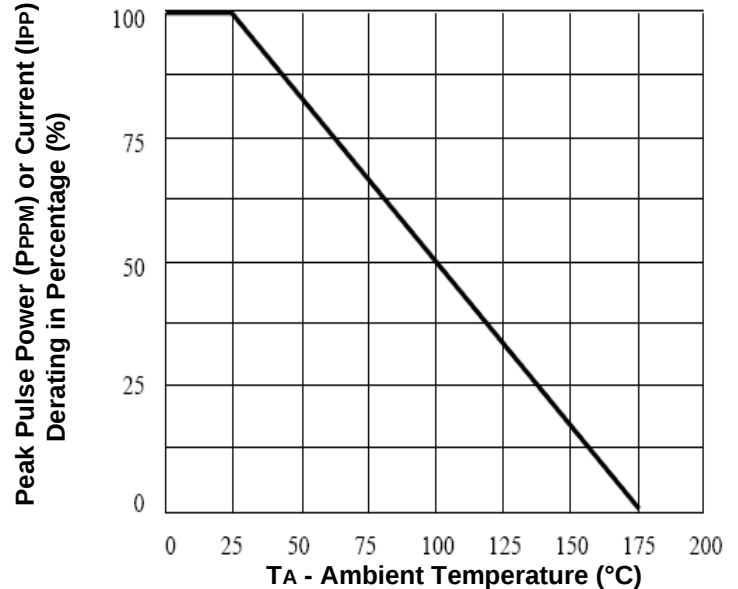


Fig.3- Pulse Waveform

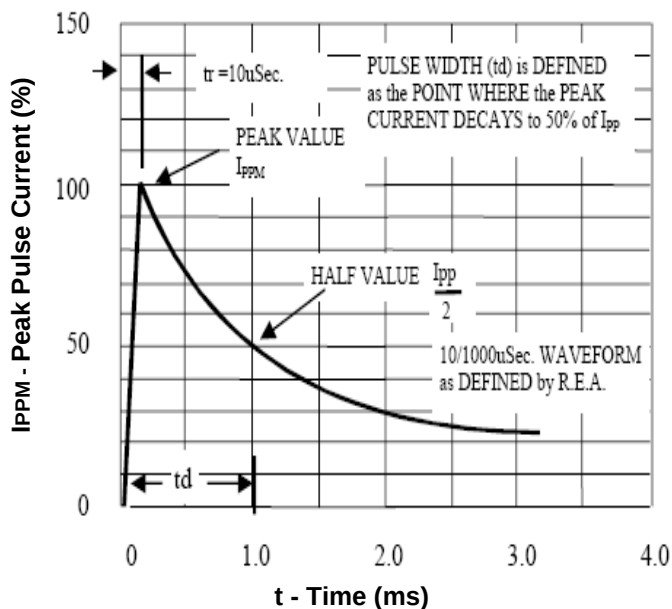
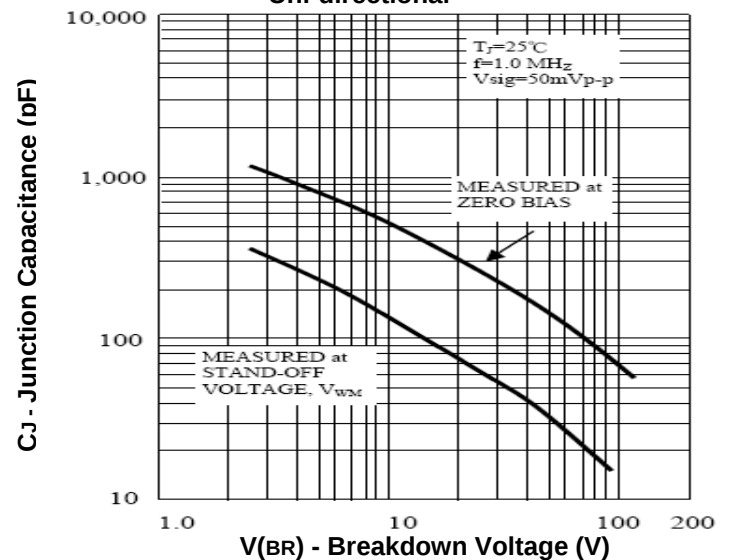


Fig.4- Typical Junction Capacitance Uni-directional



# 400W Transient Voltage Suppressor

## MP4KE6.8A - MP4KE43CA

Fig.5- Power Derating Curve

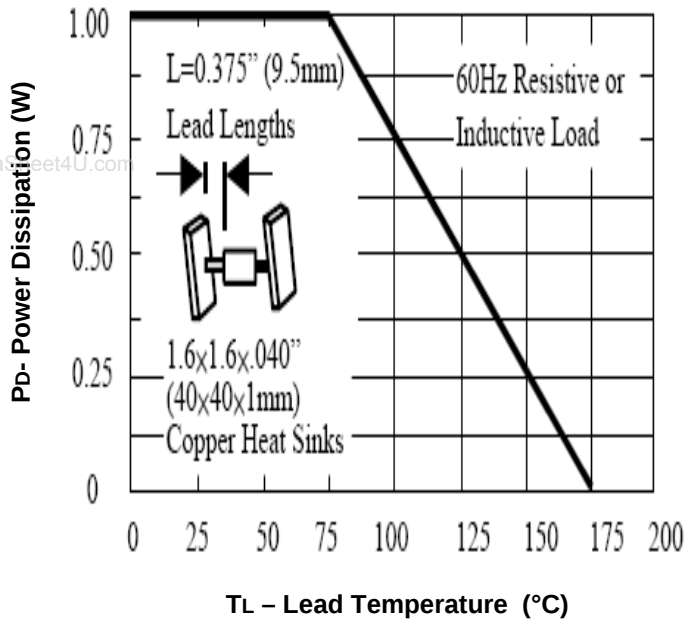
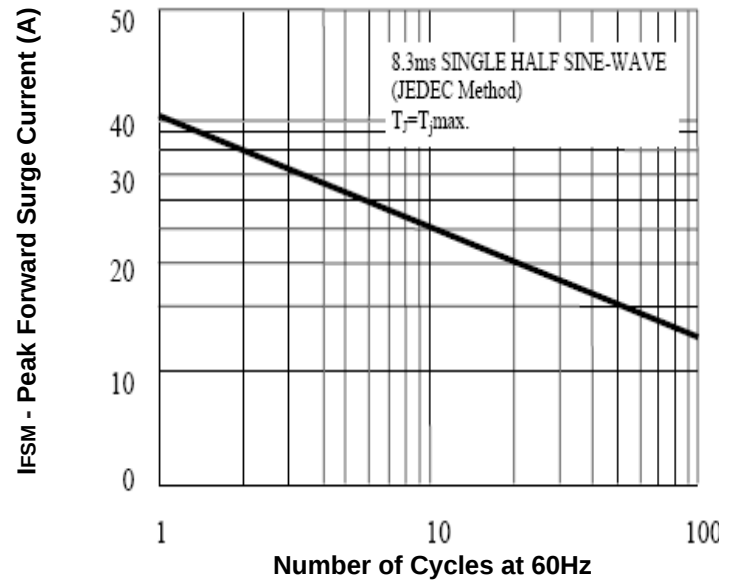
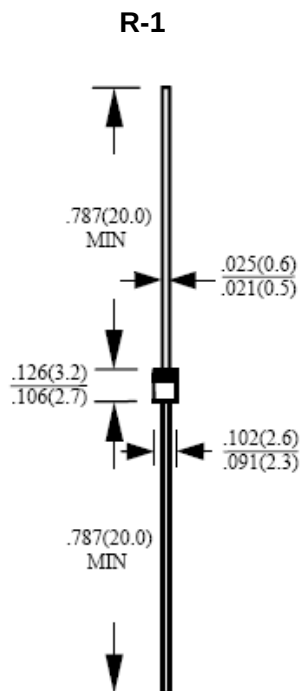


Fig.6- Max. Non-Repetitive Forward Surge Current  
Uni-directional only



### Dimensions in inches (mm)



# 400W Transient Voltage Suppressor

## MP4KE6.8A - MP4KE43CA

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