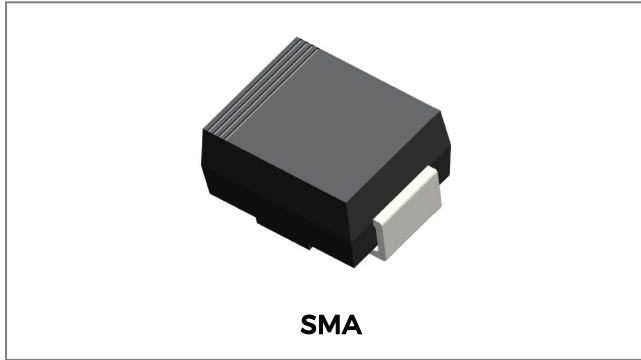


## SMAJ440A SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 400W peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Terminals finish: 100% Pure Tin
- This is a Pb - Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- Case: SMA Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Color band denotes cathode except Bipolar
- Mounting Position: Any

### Maximum Ratings and Thermal Characteristics@T<sub>A</sub>=25°C unless otherwise specified

| Parameter  | Symbol                            | Value       | Units |
|--|-----------------------------------|-------------|-------|
| Junction and Storage Temperature Range   | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C    |
| Typical Thermal Resistance Junction to Lead  | R <sub>θJL</sub>                  | 30          | °C/W  |
| Typical Thermal Resistance Junction to Ambient   | R <sub>θJA</sub>                  | 120         | °C/W  |
| Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10x1000µs Waveform (Fig.1)(Note 1) | P <sub>PPM</sub>                  | Minimum 400 | W     |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)                           | I <sub>FSM</sub>                  | 60          | A     |
| Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =75°C (Fig.5)                    | P <sub>M(AV)</sub>                | 3.3         | W     |

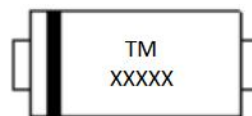
- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2.
  2. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

### Ordering Information

| Device     | Package       | Shipping       |
|------------|---------------|----------------|
| SMAJ440A   | SMA (Pb-Free) | 5000pcs / reel |
| SMAJ440ATR | SMA (Pb-Free) | 5000pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

### Marking Diagram



Where XXXXX is YYWWL

TM = Marking Code  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Electrical Characteristics @  $T_A=25^\circ\text{C}$  unless otherwise specified**

| Part Number | Marking Code | Reverse Stand off Voltage $V_R$ | Breakdown Voltage $V_{BR}$ (Volts) @ $I_T$ |      | Test Current $I_T$ | Maximum Clamping Voltage $V_C$ @ $I_{pp}$ | Maximum Peak Pulse Current $I_{pp}$ | Maximum Reverse Leakage $I_R$ @ $V_R$ |
|-------------|--------------|---------------------------------|--|------|--------------------|---|-------------------------------------|---------------------------------------|
|             |              | (Volts)                         | MIN.                                       | MAX. | (mA)               | (Volts)                                   | (A)                                 | ( $\mu\text{A}$ )                     |
| SMAJ440A    | TM           | 440.0                           | 492  | 543  | 1                  | 356                                       | 0.7                                 | 1                                     |

**Ratings and Characteristics Curves**

Figure 1 - Peak Pulse Power Rating Curve

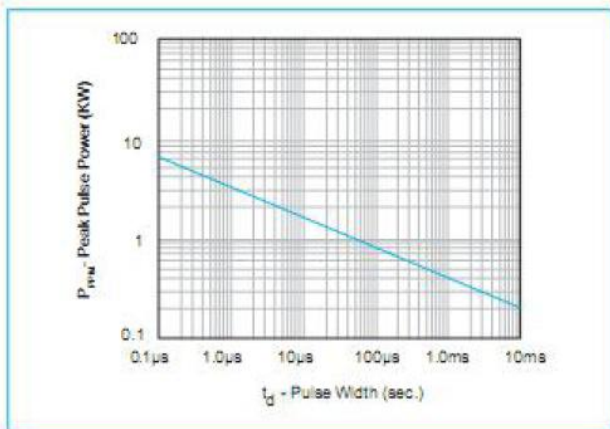


Figure 2 - Pulse Derating Curve

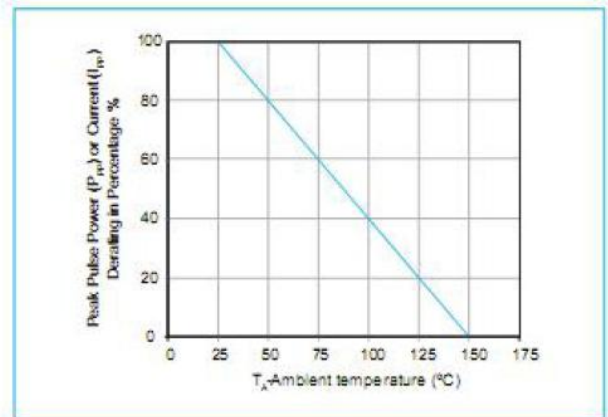


Figure 3 - Pulse Waveform

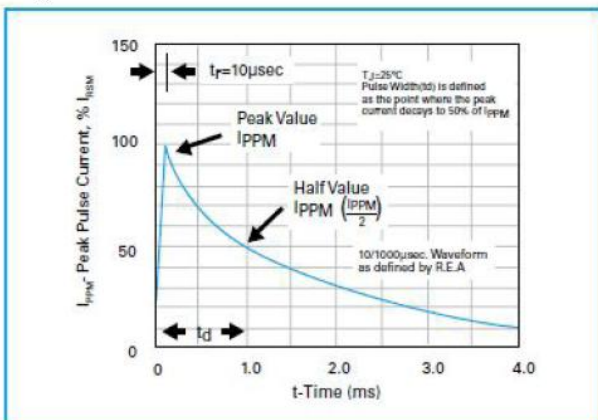


Figure 4 - Typical Junction Capacitance

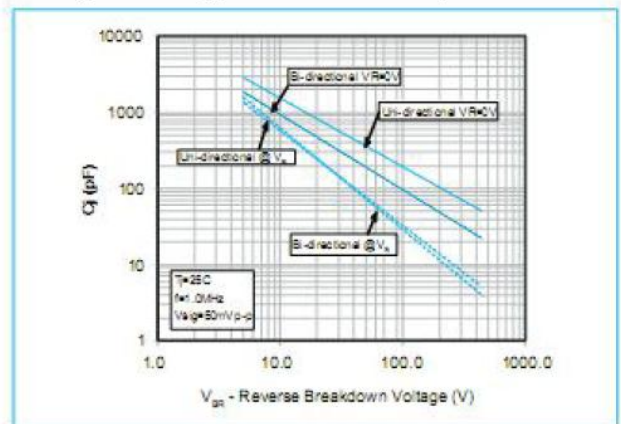




Figure 5 - Steady State Power Dissipation Derating Curve

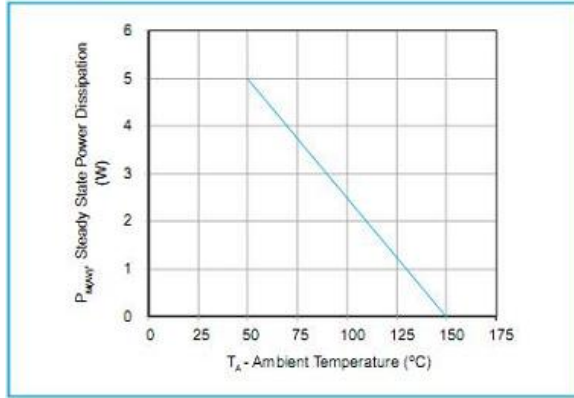
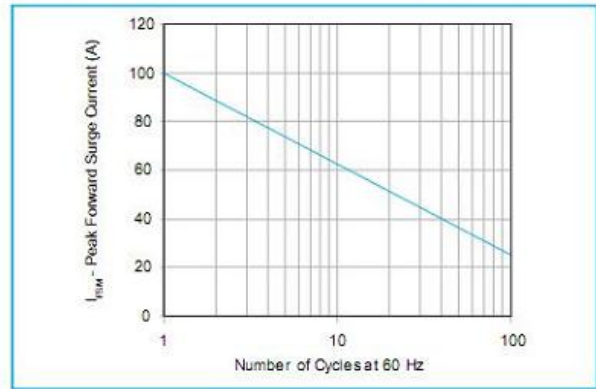
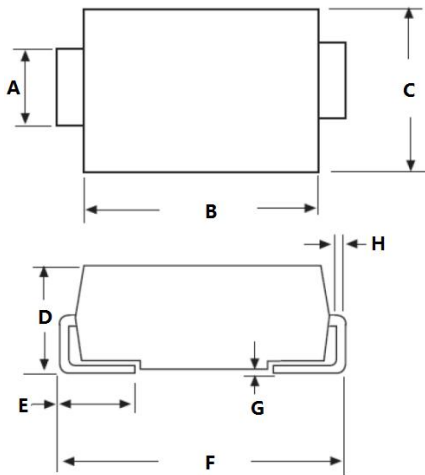


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

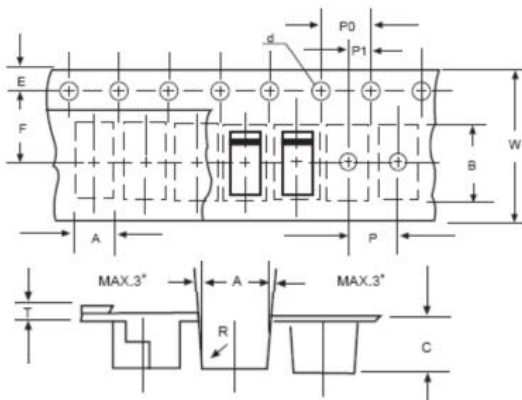


**Mechanical Dimensions SMA(Inches/Millimeters)**



| SYMBOL | Millimeters |      | Inches |       |
|--------|-------------|------|--------|-------|
|        | Min.        | Max. | Min.   | Max.  |
| A      | 1.25        | 1.65 | 0.049  | 0.065 |
| B      | 3.95        | 4.60 | 0.156  | 0.181 |
| C      | 2.25        | 2.95 | 0.089  | 0.116 |
| D      | 1.95        | 2.90 | 0.077  | 0.114 |
| E      | 0.75        | 1.60 | 0.030  | 0.063 |
| F      | 4.80        | 5.60 | 0.189  | 0.220 |
| G      | 0.05        | 0.20 | 0.002  | 0.008 |
| H      | 0.15        | 0.41 | 0.006  | 0.016 |

**Carrier Tape Specification SMA**



| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 2.97        | 3.17  |
| B      | 5.70        | 5.90  |
| C      | 2.32        | 2.52  |
| d      | 1.40        | 1.60  |
| E      | 1.40        | 1.60  |
| F      | 5.60        | 5.70  |
| P      | 3.90        | 4.10  |
| P0     | 3.90        | 4.10  |
| P1     | 1.90        | 2.10  |
| T      | 0.25        | 0.35  |
| W      | 11.80       | 12.20 |

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