

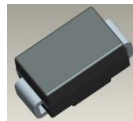
**400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR**
**Features**

- 400W Peak Pulse Power Dissipation
- Unidirectional and Bidirectional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

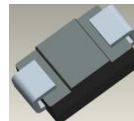
**Mechanical Data**

- Case: SMA
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead-Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 Ⓔ3
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Weight: 0.064 grams (Approximate)

SMA



Top View

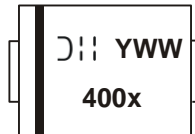


Bottom View

**Ordering Information** (Note 4)

| Part Number     | Case | Packaging        |
|-----------------|------|------------------|
| PSMAJ400(C)A-13 | SMA  | 5000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**


400x = Product Type Marking Code  
 400C – BI  
 400A – UNI  
 J11 = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 2 for 2012)  
 WW = Week Code (01 to 53)

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic   | Symbol           | Value | Unit |
|--|------------------|-------|------|
| Peak Pulse Power Dissipation<br>(Non-repetitive current pulse derated above T <sub>A</sub> = +25°C, T <sub>P</sub> = 1ms) (Note 5) | P <sub>PK</sub>  | 400   | W    |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 6 & 7)                                   | I <sub>FSM</sub> | 40    | A    |
| Steady State Power Dissipation @ T <sub>L</sub> = +120°C   | PM(AV)           | 1.0   | W    |
| Instantaneous Forward Voltage @ I <sub>FP</sub> = 25A (Notes 6 & 7)  | V <sub>F</sub>   | 6.5   | V    |

- Notes:
5. Non-repetitive current pulse, per Figure 4 and derated above T<sub>A</sub> = +25°C, per Figure 1.
  6. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
  7. Unidirectional units only.

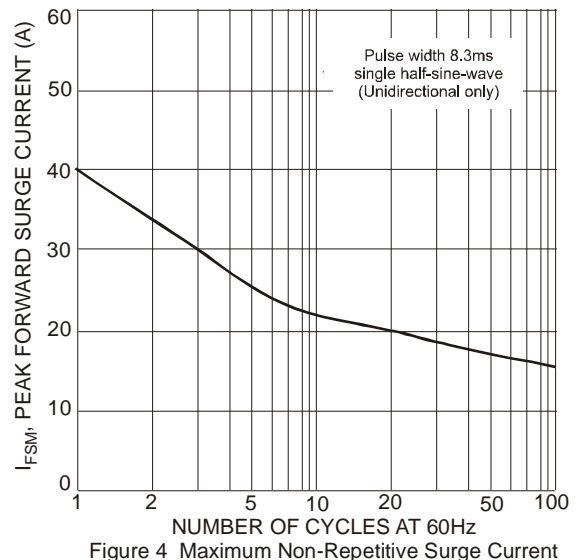
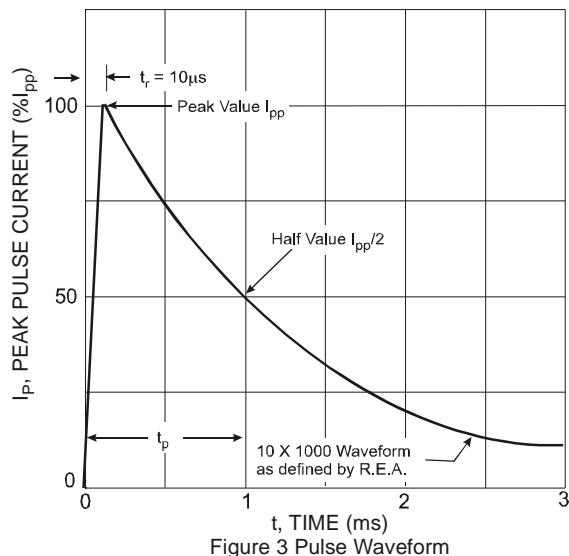
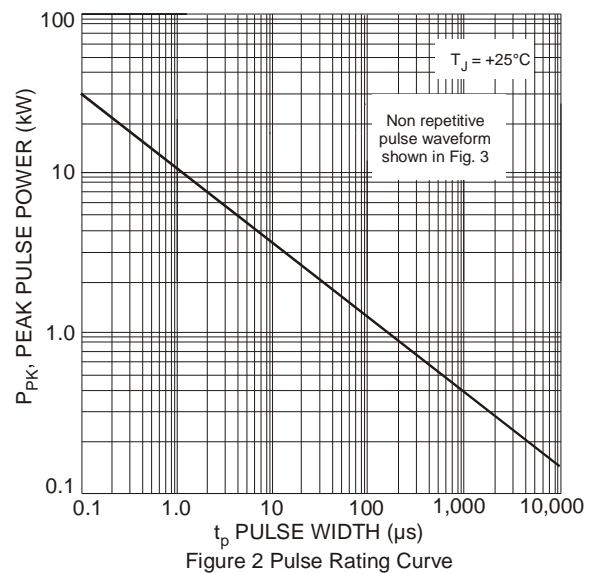
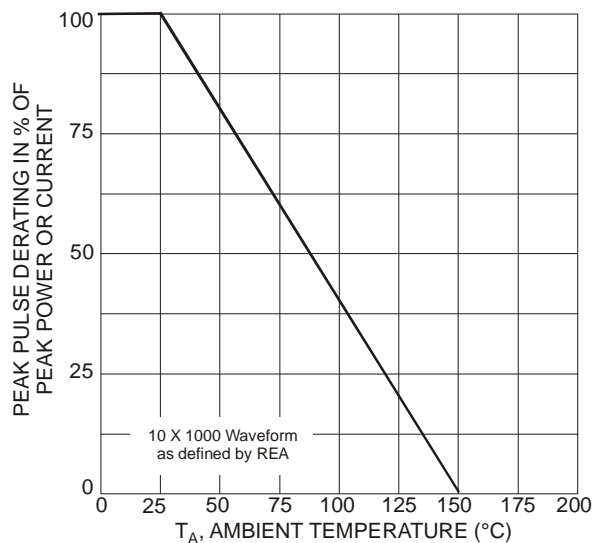
## Thermal Characteristics

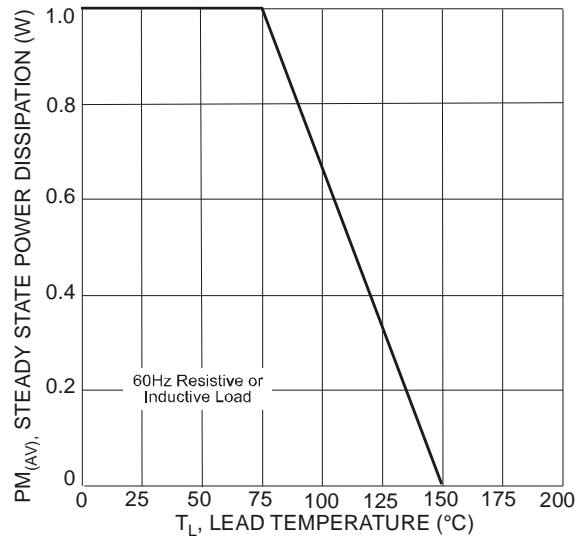
| Characteristic              | Symbol    | Value       | Unit |
|-----------------------------|-----------|-------------|------|
| Operating Temperature Range | $T_J$     | -55 to +150 | °C   |
| Storage Temperature Range   | $T_{STG}$ | -55 to +175 | °C   |

## Electrical Characteristics (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Part Number<br>Add C for<br>Bidirectional<br>(Note 8) | Reverse<br>Standoff<br>Voltage<br>$V_{RWM}$ (V) | Breakdown<br>Voltage<br>$V_{BR}$ @ $I_T$ (Note 9) |         | Test<br>Current<br>$I_T$ (mA) | Max. Reverse<br>Leakage @ $V_{RWM}$<br>$I_R$ ( $\mu\text{A}$ ) | Max. Clamping<br>Voltage @ $I_{pp}$<br>$V_C$ (V) | Max. Peak Pulse<br>Current<br>$I_{pp}$<br>(A) | Marking Code |      |
|---|---|---|---------|-------------------------------|--|--|---|--------------|------|
|   |   | Min (V)   | Max (V) |                               |  |  |   | BI-          | UNI- |
| PSMAJ400(C)A  | 342   | 380   | 420     | 1.0                           | 5.0  | 548.0  | 0.73  | 400C         | 400A |

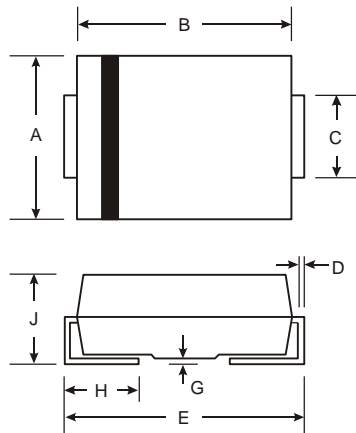
- Notes: 8. Suffix C denotes Bi-directional device.  
9.  $V_{BR}$  measured with  $I_T$  current pulse = 10 ~ 15 ms.





## Package Outline Dimensions

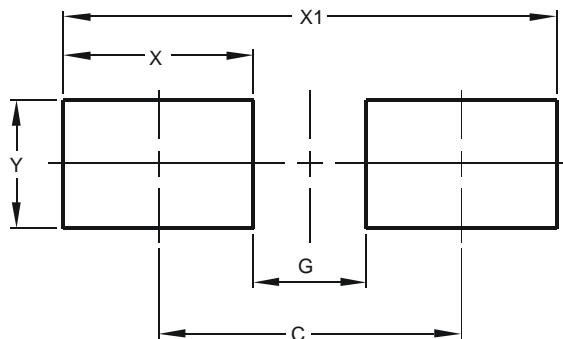
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| SMA                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.29 | 2.92 |
| B                    | 4.00 | 4.60 |
| C                    | 1.27 | 1.63 |
| D                    | 0.15 | 0.31 |
| E                    | 4.80 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.01 | 2.30 |
| All Dimensions in mm |      |      |

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.00          |
| G          | 1.50          |
| X          | 2.50          |
| X1         | 6.50          |
| Y          | 1.70          |

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