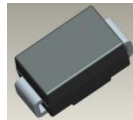


## Features

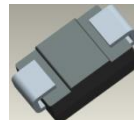
- 400W Peak Pulse Power Dissipation
- Excellent Clamping Capability
- Fast Response Time
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## 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
- Weight: 0.064 grams (Approximate)



Top View



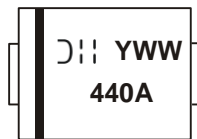
Bottom View

## Ordering Information (Note 4)

Part Number	Case	Packaging
PSMAJ440A-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



440A = Product Type Marking Code  
 DII = 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 (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 (Note 6)	I <sub>FSM</sub>	40	A
Steady State Power Dissipation @ T <sub>L</sub> = +120°C	PM <sub>(AV)</sub>	1.0	W
Instantaneous Forward Voltage @ I <sub>PP</sub> = 25A (Note 6)	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.

### 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	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 7)		Test Current	Max. Reverse Leakage @ $V_{RWM}$	Max. Clamping Voltage @ $I_{pp}$ ( $t_p = 10 \times 1000\mu\text{s}$ ) (see Figure 4)	Max. Peak Pulse Current $I_{pp}$	Marking Code
	$V_{RWM}$ (V)	Min (V)	Max (V)	$I_T$ (mA)	$I_R$ ( $\mu\text{A}$ )	$V_C$ (V)	(A)	
PSMAJ440A	376	418	462	1.0	5.0	602.0	0.66	440A

Notes: 7.  $V_{BR}$  measured with  $I_T$  current pulse = 10 ~ 15 ms.

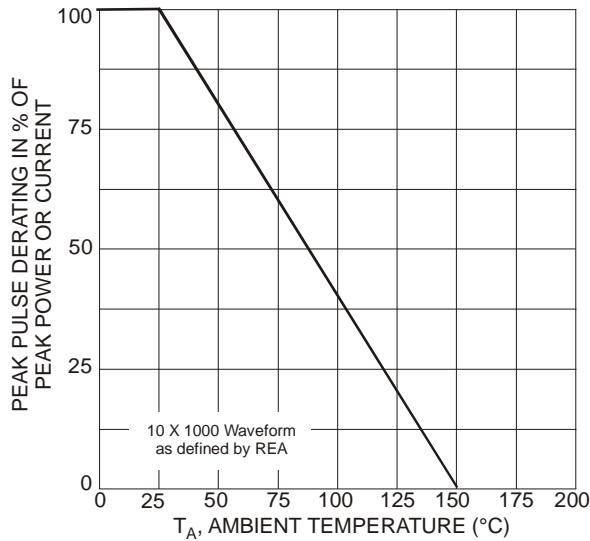


Figure 1 Pulse Derating Curve

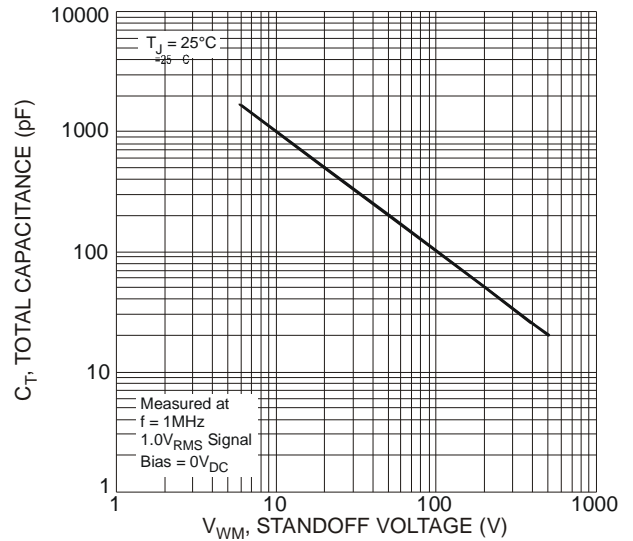


Figure 2 Typical Total Capacitance

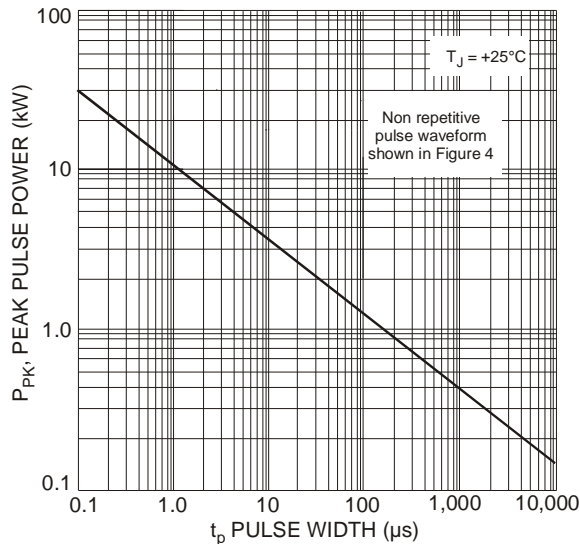


Figure 3 Pulse Rating Curve

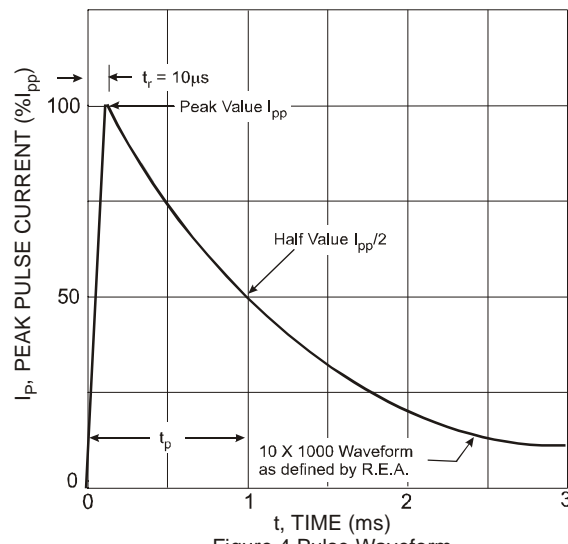


Figure 4 Pulse Waveform

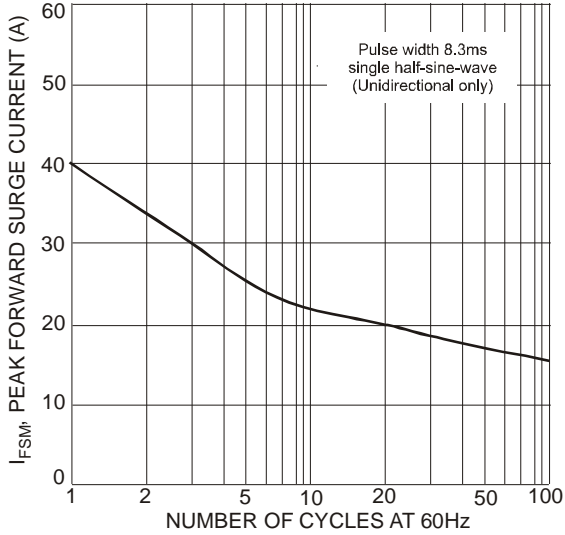


Figure 5 Maximum Non-Repetitive Surge Current

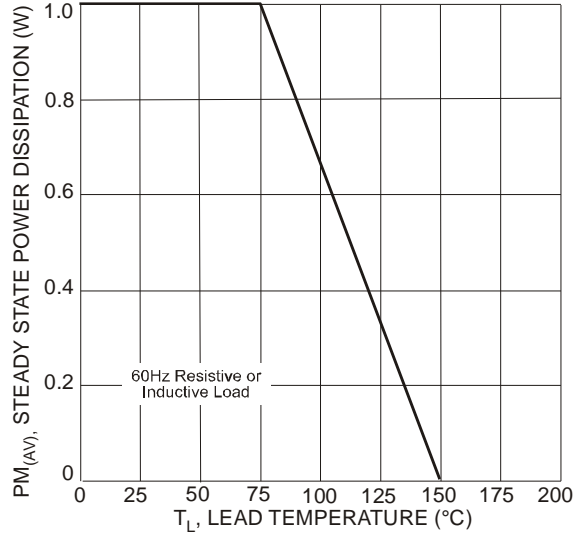
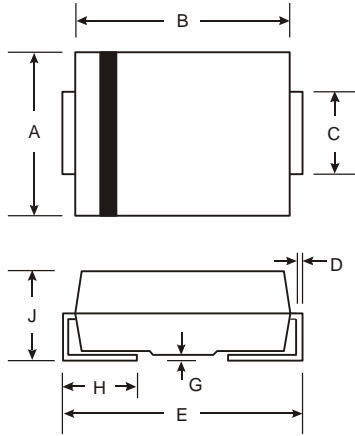


Figure 6 Steady State Power Derating Curve

**Package Outline Dimensions**

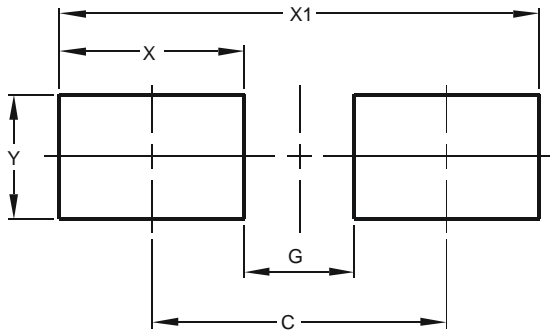
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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 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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