

## 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 (E3)
- Polarity Indicator: Cathode Band
- Weight: 0.064 grams (Approximate)



Top View



Bottom View

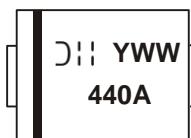
## Ordering Information (Note 4)

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

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non-repetitive current pulse derated above $T_A = +25^\circ\text{C}$ , $T_P = 1\text{ms}$ ) (Note 5)	$P_{PK}$	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Note 6)	$I_{FSM}$	40	A
Steady State Power Dissipation @ $T_L = +120^\circ\text{C}$	$PM_{(AV)}$	1.0	W
Instantaneous Forward Voltage @ $I_{PP} = 25\text{A}$ (Note 6)	$V_F$	6.5	V

Notes:

5. Non-repetitive current pulse, per Figure 4 and derated above  $T_A = +25^\circ\text{C}$ , 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)					
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.

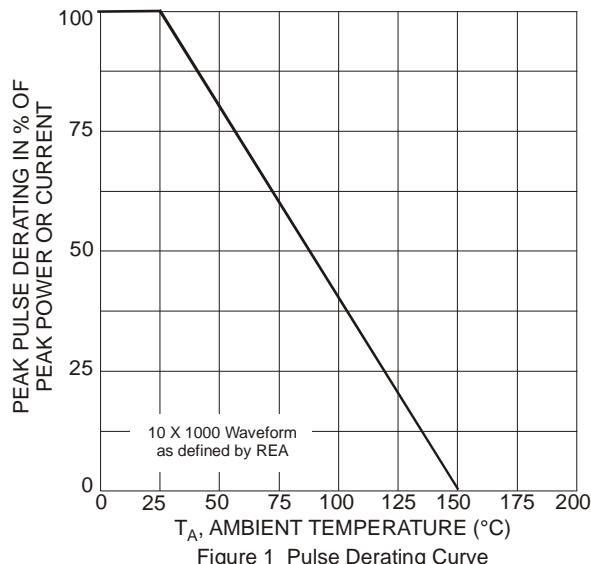


Figure 1 Pulse Derating Curve

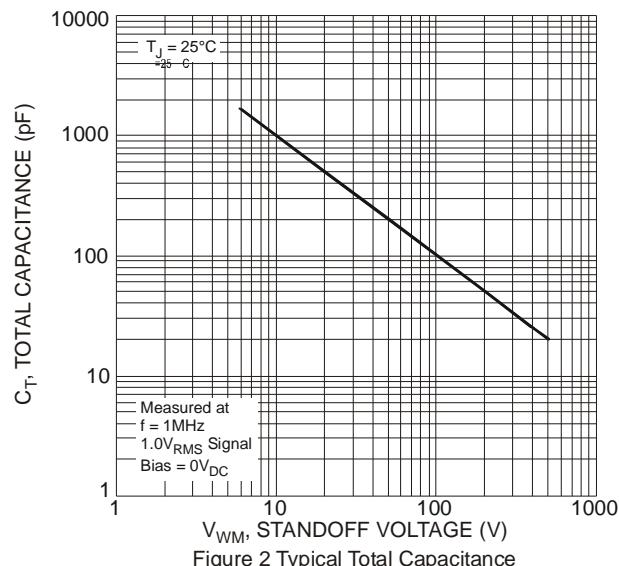


Figure 2 Typical Total Capacitance

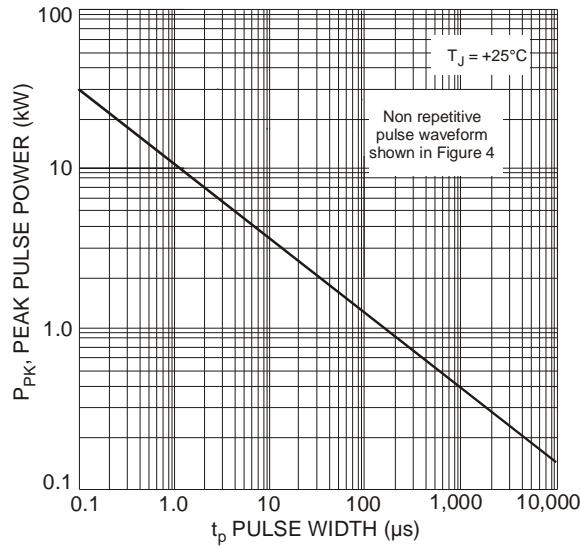


Figure 3 Pulse Rating Curve

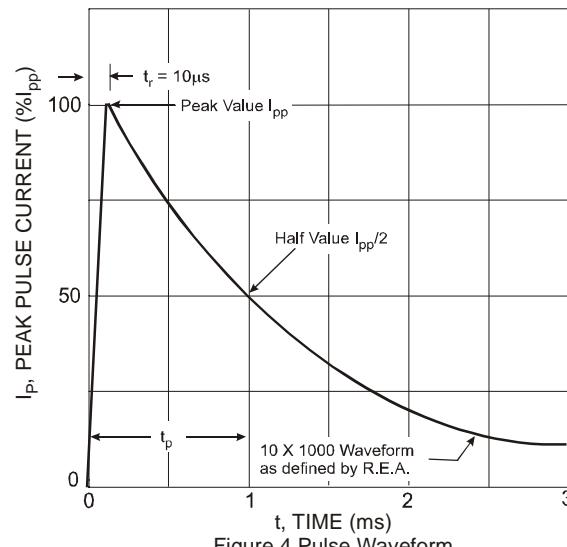


Figure 4 Pulse Waveform

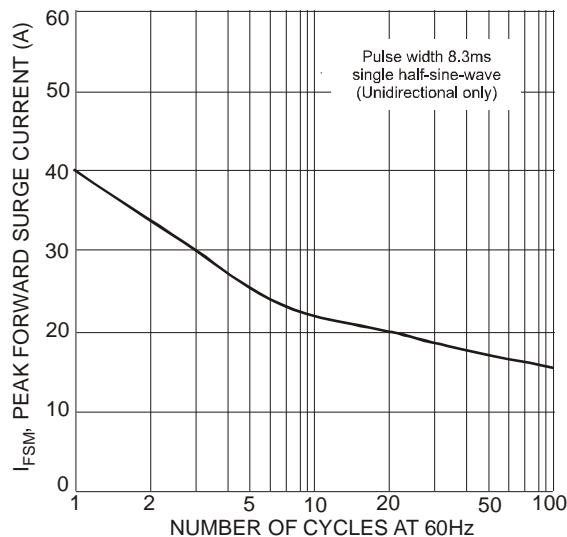


Figure 5 Maximum Non-Repetitive Surge Current

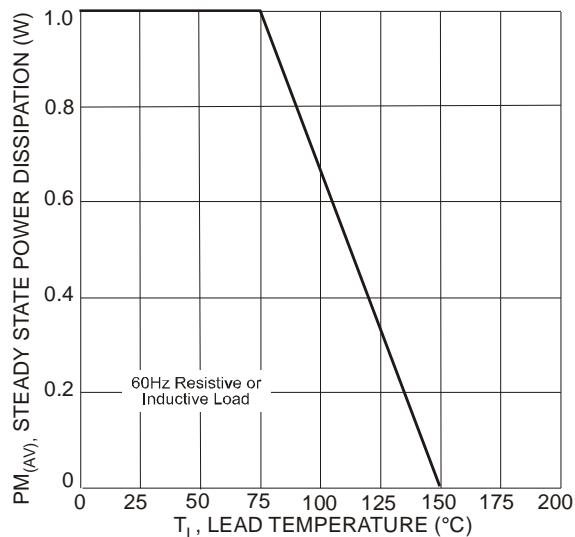
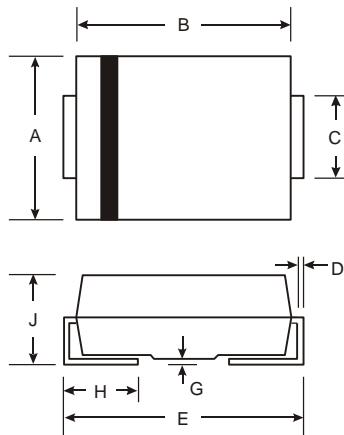


Figure 6 Steady State Power Derating Curve

## Package Outline Dimensions

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

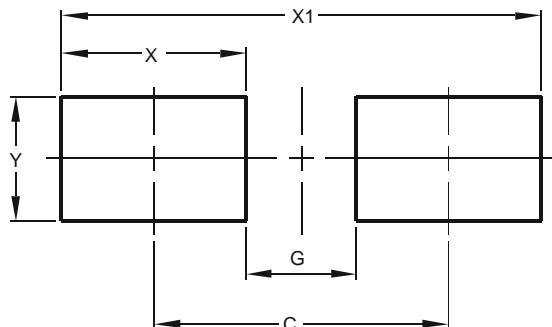


SMA		
Dim	Min	Max
<b>A</b>	2.29	2.92
<b>B</b>	4.00	4.60
<b>C</b>	1.27	1.63
<b>D</b>	0.15	0.31
<b>E</b>	4.80	5.59
<b>G</b>	0.05	0.20
<b>H</b>	0.76	1.52
<b>J</b>	2.01	2.30

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)
<b>C</b>	4.00
<b>G</b>	1.50
<b>X</b>	2.50
<b>X1</b>	6.50
<b>Y</b>	1.70

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