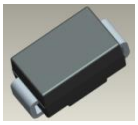
400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

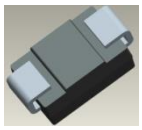
- 400W Peak Pulse Power Dissipation
- Excellent Clamping Capability
- Fast Response Time
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

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



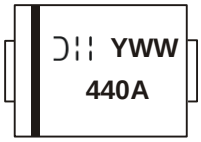
Bottom View

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 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
= 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°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non-repetitive current pulse derated above T_A = +25°C, T_P = 1ms) (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°C	$PM_{(AV)}$	1.0	W
Instantaneous Forward Voltage @ I_{PP} = 25A (Note 6)	V_F	6.5	V

Notes:
5. Non-repetitive current pulse, per Figure 4 and derated above T_A = +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°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 = 10x1000µs) (see Figure 4)	Max. Peak Pulse Current I_{pp}	Marking Code
	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (µA)	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.

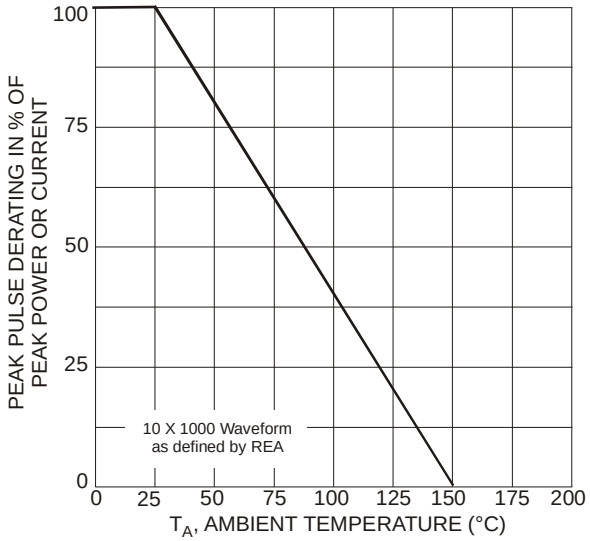


Figure 1 Pulse Derating Curve

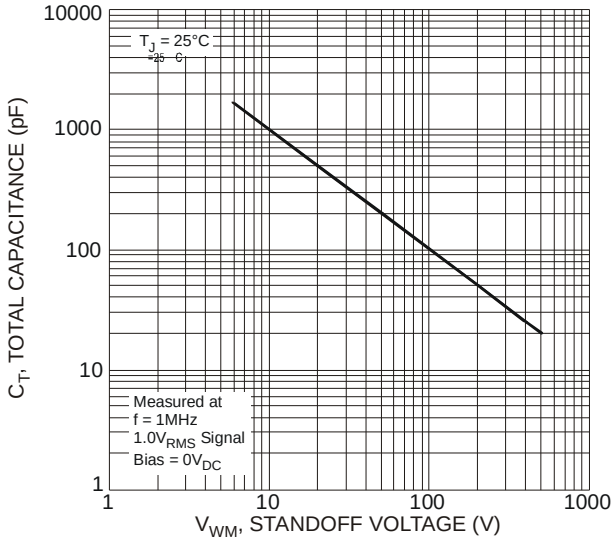


Figure 2 Typical Total Capacitance

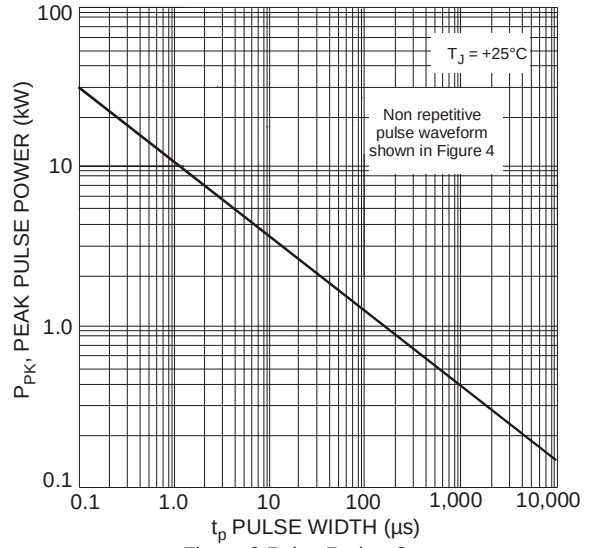


Figure 3 Pulse Rating Curve

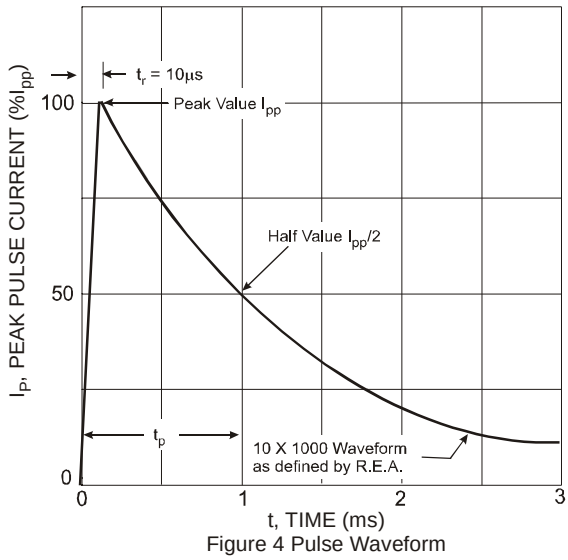


Figure 4 Pulse Waveform

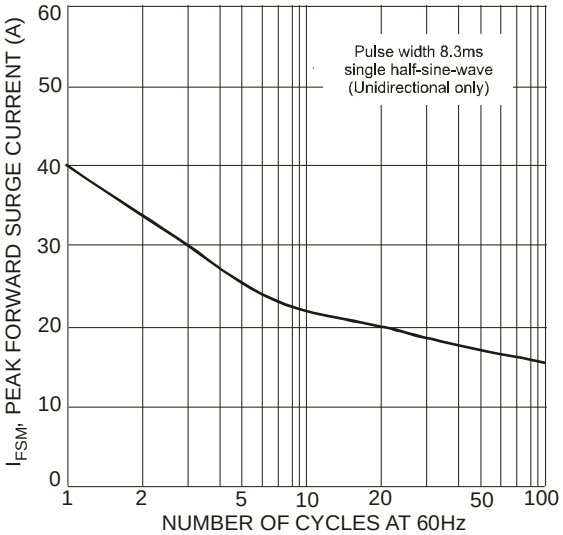


Figure 5 Maximum Non-Repetitive Surge Current

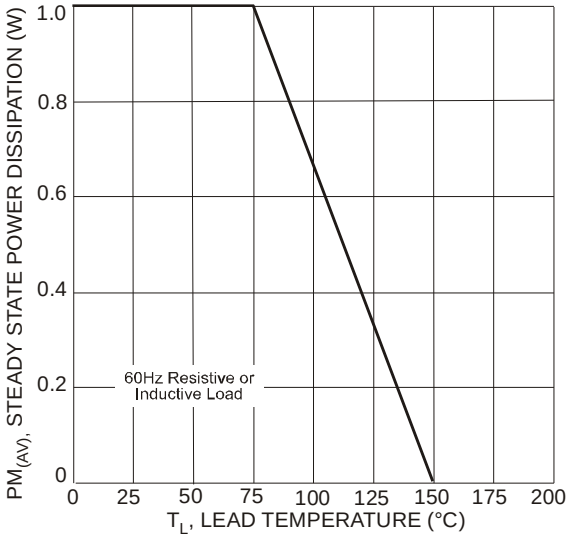
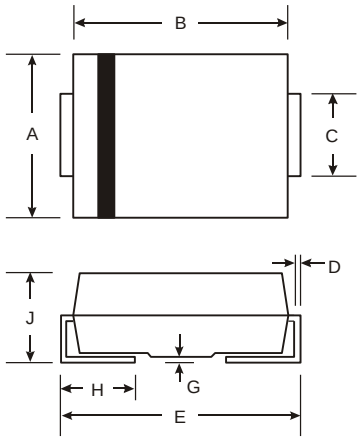


Figure 6 Steady State Power Derating Curve

Package Outline Dimensions

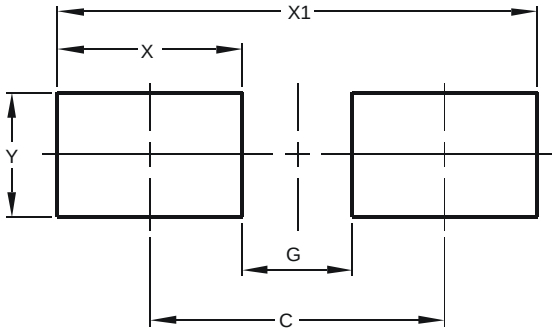
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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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