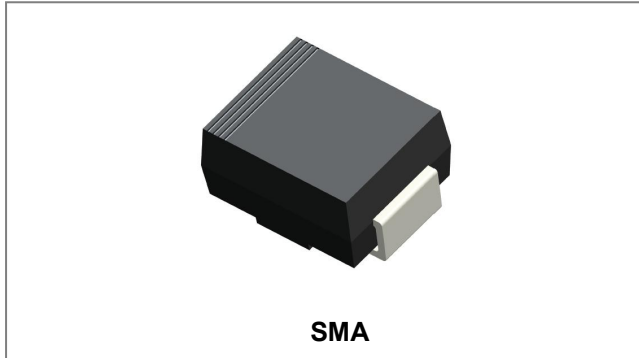


## SMAJ440A SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



### 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 @ $T_A=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Units
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	30	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	120	$^\circ\text{C/W}$
Peak Pulse Power Dissipation at $T_A=25^\circ\text{C}$ by 10x1000 $\mu\text{s}$ Waveform (Fig.1)(Note 1)	$P_{PPM}$	Minimum 400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)	$I_{FSM}$	60	A
Power Dissipation on Infinite Heat Sink at $T_L=75^\circ\text{C}$ (Fig.5)	$P_{M(AV)}$	3.3	W

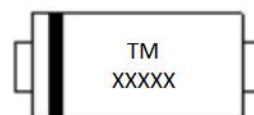
- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2.
  2. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

### 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

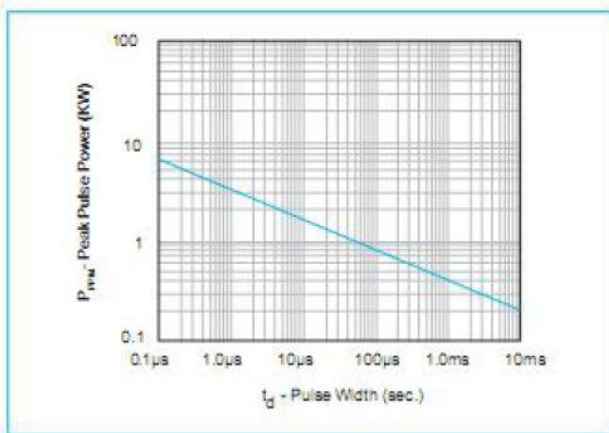


Figure 2 - Pulse Derating Curve

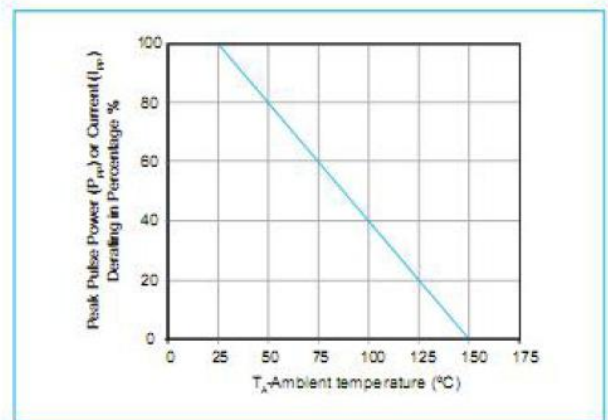


Figure 3 - Pulse Waveform

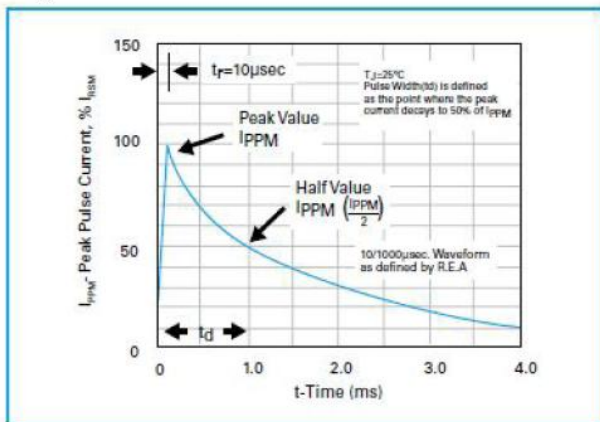


Figure 4 - Typical Junction Capacitance

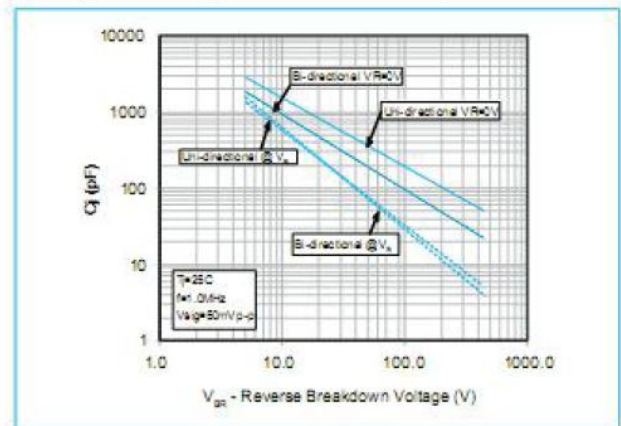


Figure 5 - Steady State Power Dissipation Derating Curve

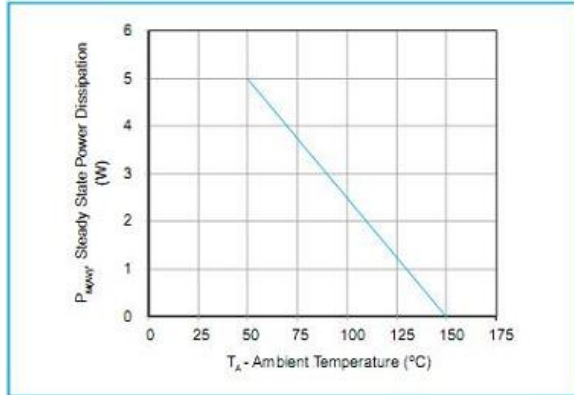
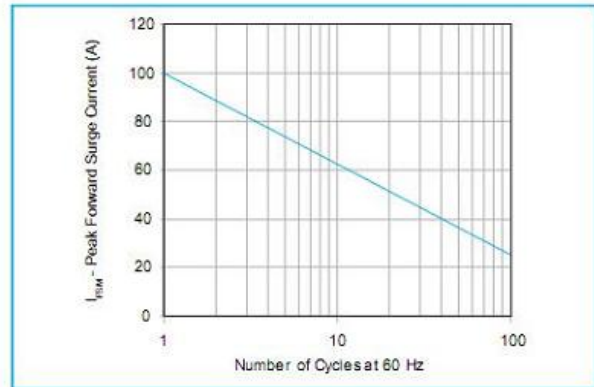
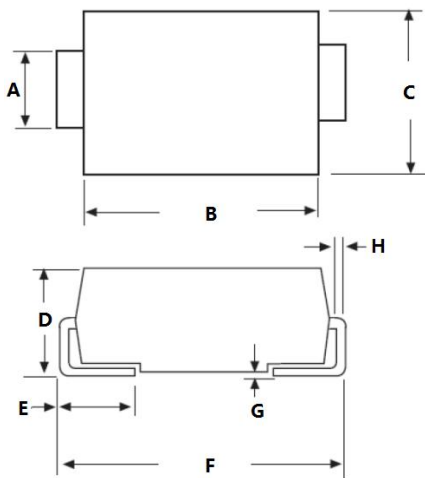


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

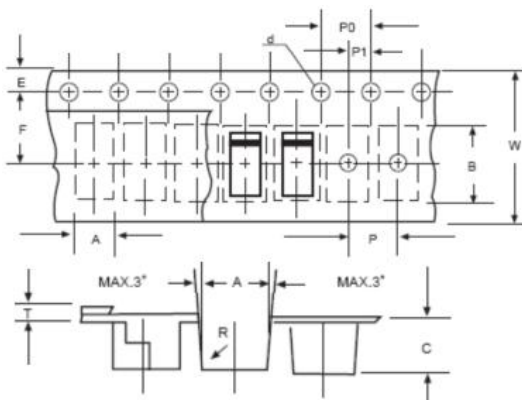


**Mechanical Dimensions SMA(Inches/Millimeters)**



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

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..