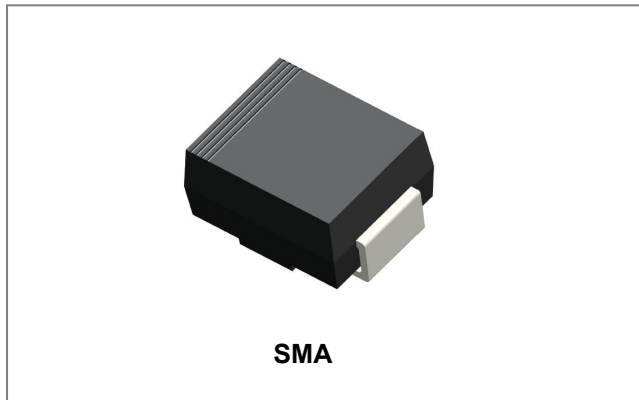


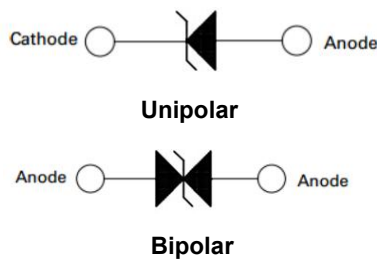
## SMAJ5.0A THRU SMAJ300CA SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 400W Peak Pulse Power Dissipation
- 5.0V- 300V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- ROHS Compliant
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request
- “-A” suffix is for Automotive qualified

### 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
- Weight:0.064 grams(approx.)

### Maximum Ratings and Thermal Characteristics@T<sub>A</sub>=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10x1000µs Waveform (Fig.2)(Note 1, 2)	P <sub>PPM</sub>	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave ( Fig.7),(Note 3)	I <sub>FSM</sub>	40	A
Power Dissipation on Infinite Heat Sink at T <sub>A</sub> =50°C	P <sub>M(AV)</sub>	3.3	W
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	°C
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	30	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	120	°C/W

- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2.
  2. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal.
  3. Measured on 8.3ms single half sine wave or equivalent square wavefor unidirectional device only.

**Electrical Characteristics@T<sub>A</sub>=25° C unless otherwise specified**

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(MA)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(uA)
		UNI	BI							
SMAJ5.0A	SMAJ5.0CA	HE	TE	5	6.4	7	10	9.2	43.5	800
SMAJ6.0A	SMAJ6.0CA	HG	TG	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	SMAJ6.5CA	HK	TK	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0A	SMAJ7.0CA	HM	TM	7	7.78	8.6	10	12	33.3	200
SMAJ7.5A	SMAJ7.5CA	HP	TP	7.5	8.33	9.21	1	12.9	31	100
SMAJ8.0A	SMAJ8.0CA	HR	TR	8	8.89	9.83	1	13.6	29.4	50
SMAJ8.5A	SMAJ8.5CA	HT	TT	8.5	9.44	10.4	1	14.4	27.8	20
SMAJ9.0A	SMAJ9.0CA	HV	TV	9	10	11.1	1	15.4	26	10
SMAJ10A	SMAJ10CA	HX	TX	10	11.1	12.3	1	17	23.5	5
SMAJ11A	SMAJ11CA	HZ	TZ	11	12.2	13.5	1	18.2	22	5
SMAJ12A	SMAJ12CA	IE	UE	12	13.3	14.7	1	19.9	20.1	5
SMAJ13A	SMAJ13CA	IG	UG	13	14.4	15.9	1	21.5	18.6	5
SMAJ14A	SMAJ14CA	IK	UK	14	15.6	17.2	1	23.2	17.2	5
SMAJ15A	SMAJ15CA	IM	UM	15	16.7	18.5	1	24.4	16.4	5
SMAJ16A	SMAJ16CA	IP	UP	16	17.8	19.7	1	26	15.4	5
SMAJ17A	SMAJ17CA	IR	UR	17	18.9	20.9	1	27.6	14.5	5
SMAJ18A	SMAJ18CA	IT	UT	18	20	22.1	1	29.2	13.7	5
SMAJ20A	SMAJ20CA	IV	UV	20	22.2	24.5	1	32.4	12.3	5
SMAJ22A	SMAJ22CA	IX	UX	22	24.4	26.9	1	35.5	11.3	5
SMAJ24A	SMAJ24CA	IZ	UZ	24	26.7	29.5	1	38.9	10.3	5
SMAJ26A	SMAJ26CA	JE	VE	26	28.9	31.9	1	42.1	9.5	5
SMAJ28A	SMAJ28CA	JG	VG	28	31.1	34.4	1	45.4	8.8	5
SMAJ30A	SMAJ30CA	JK	VK	30	33.3	36.8	1	48.4	8.3	5
SMAJ33A	SMAJ33CA	JM	VM	33	36.7	40.6	1	53.3	7.5	5
SMAJ36A	SMAJ36CA	JP	VP	36	40	44.2	1	58.1	6.9	5
SMAJ40A	SMAJ40CA	JR	VR	40	44.4	49.1	1	64.5	6.2	5
SMAJ43A	SMAJ43CA	JT	VT	43	47.8	52.8	1	69.4	5.8	5
SMAJ45A	SMAJ45CA	JV	VV	45	50	55.3	1	72.7	5.5	5
SMAJ48A	SMAJ48CA	JX	VX	48	53.3	58.9	1	77.4	5.2	5
SMAJ51A	SMAJ51CA	JZ	VZ	51	56.7	62.7	1	82.4	4.9	5
SMAJ54A	SMAJ54CA	RE	WE	54	60	66.3	1	87.1	4.6	5
SMAJ58A	SMAJ58CA	RG	WG	58	64.4	71.2	1	93.6	4.3	5
SMAJ60A	SMAJ60CA	RK	WK	60	66.7	73.7	1	96.8	4.1	5
SMAJ64A	SMAJ64CA	RM	WM	64	71.1	78.6	1	103	3.9	5
SMAJ70A	SMAJ70CA	RP	WP	70	77.8	86	1	113	3.5	5
SMAJ75A	SMAJ75CA	RR	WR	75	83.3	92.1	1	121	3.3	5
SMAJ78A	SMAJ78CA	RT	WT	78	86.7	95.8	1	126	3.2	5
SMAJ85A	SMAJ85CA	RV	WV	85	94.4	104	1	137	2.9	5
SMAJ90A	SMAJ90CA	RX	WX	90	100	111	1	146	2.7	5
SMAJ100A	SMAJ100CA	RZ	WZ	100	111	123	1	162	2.5	5
SMAJ110A	SMAJ110CA	SE	XE	110	122	135	1	177	2.3	5
SMAJ120A	SMAJ120CA	SG	XG	120	133	147	1	193	2.1	5
SMAJ130A	SMAJ130CA	SK	XK	130	144	159	1	209	1.9	5
SMAJ150A	SMAJ150CA	SM	XM	150	167	185	1	243	1.6	5
SMAJ160A	SMAJ160CA	SP	XP	160	178	197	1	259	1.5	5
SMAJ170A	SMAJ170CA	SR	XR	170	189	209	1	275	1.5	5
SMAJ180A	SMAJ180CA	ST	XT	180	201	222	1	292	1.4	5
SMAJ220A	SMAJ220CA	SX	XX	220	246	272	1	356	1.1	5
SMAJ300A	SMAJ300CA	TE	UE	300	335	371	1	486	0.8	5

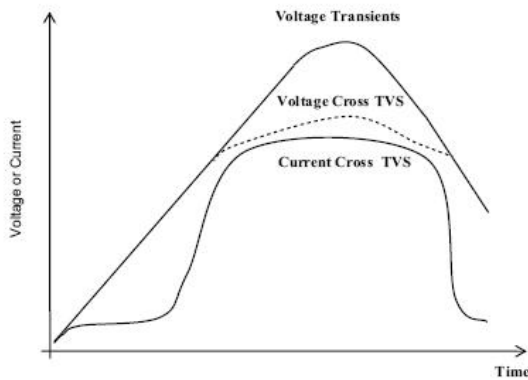
**Technical Data**  
**Data Sheet N0223, Rev. C**

*Automotive qualified*

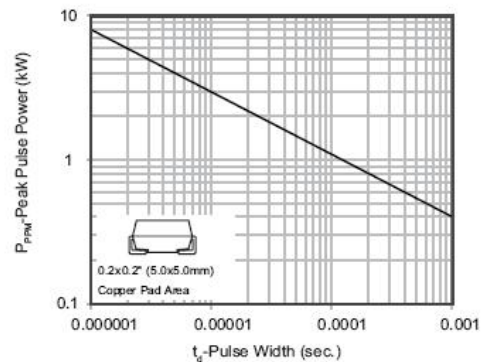
For bidirectional type having VRWM of 10 volts and less, the IR limit is double.  
For parts without A (VBR is + 10% and VC is 5% higher than with A parts).

**Ratings and Characteristics Curves**

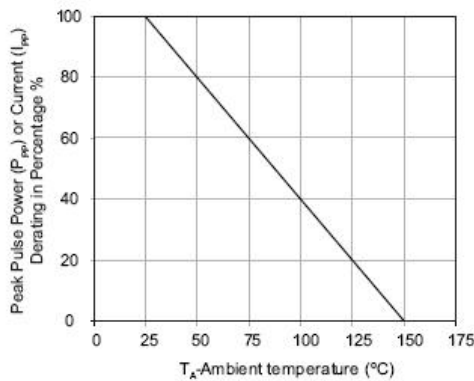
**Figure 1 - TVS Transients Clamping Waveform**



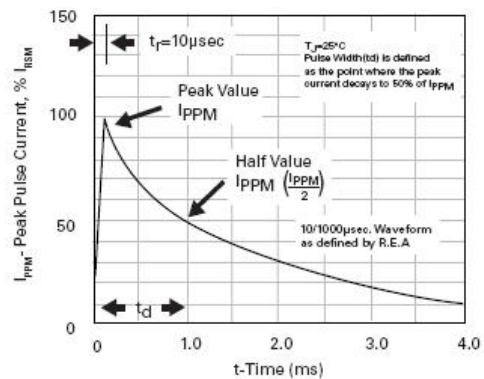
**Figure 2 - Peak Pulse Power Rating Curve**



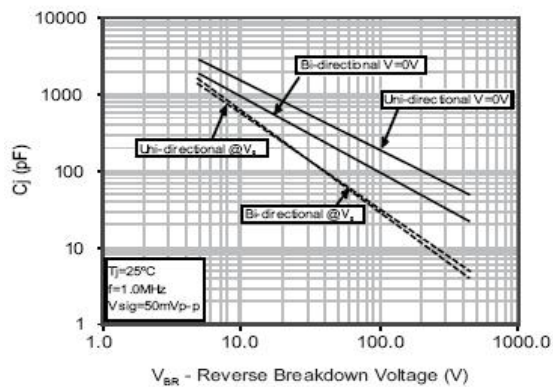
**Figure 3 - Pulse Derating Curve**



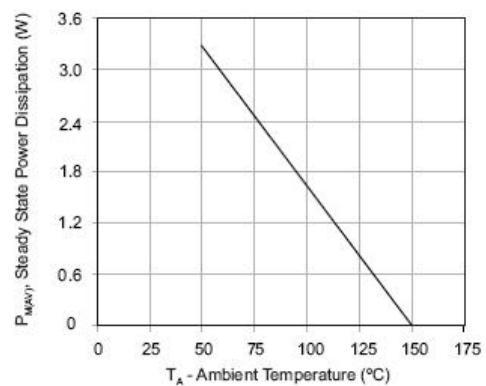
**Figure 4 - Pulse Waveform**



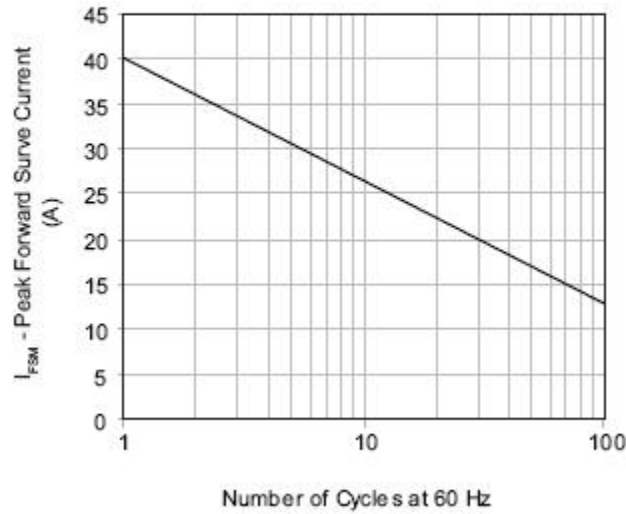
**Figure 5 - Typical Junction Capacitance**



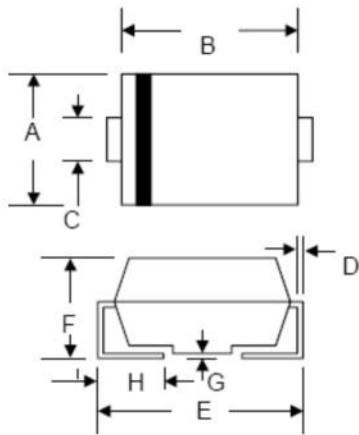
**Figure 6 - Steady State Power Dissipation Derating Curve**



**Figure 7 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only**



**Mechanical Dimensions SMA**

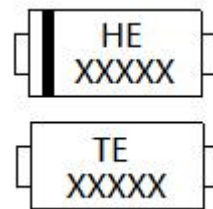


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.84	0.094	0.112
B	3.99	4.75	0.157	0.187
C	1.05	1.70	0.041	0.067
D	0.15	0.51	0.006	0.020
E	4.80	5.28	0.189	0.208
F	2.00	2.44	0.078	0.098
G	0.05	0.203	0.002	0.008
H	0.76	1.52	0.030	0.600

**Ordering Information**

Device	Package	Shipping
SMAJ5.0A THRU SMAJ300CA	SMA (Pb-Free)	5000pcs / reel
SMAJ5.0ATR THRU SMAJ300CATR	SMA (Pb-Free)	5000pcs / reel

**Marking Diagram**



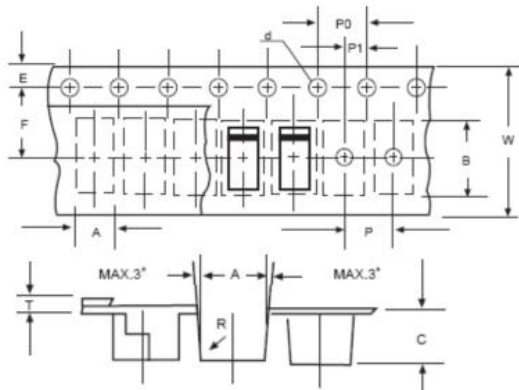
Where XXXXX is YYWWL

- HE/TE = Marking code
- YY = Year
- WW = Week
- L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**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..

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [Sangdest Microelectronic](#) manufacturer:*

Other Similar products are found below :

[NTE4902](#) [P4SMAJ15A](#) [P4SMAJ26A](#) [SMAJ400CA-TP](#) [TGL34-47CA](#) [ESDAULC45-1BF4](#) [SM1605E3/TR13](#) [SMF20A-TP](#) [P4SMAJ12A](#)  
[CPDUR24V-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [MPLAD30KP45CAE3](#) [MMBZ27VCLQ-7-F](#) [MMAD1108/TR13](#) [MPLAD30KP24A](#)  
[ACPDQC5V0R-HF](#) [DFLT170A-7](#) [NTE4900](#) [NTE4926](#) [NTE4938](#) [SMF22A-TP](#) [SMF12A-TP](#) [SLVU2.8-TP](#) [SMLJ6.5CA-TP](#) [SMAJ6.5CA-](#)  
[TP](#) [MMAD1108E3/TR13](#) [D5V0M1U2LP3-7](#) [SMAJ400A-TP](#) [AOZ8811DT-03](#) [AOZ8831DI-05](#) [AOZ8831DT-03](#) [SMAJ188CA](#) [3SMC33CA](#)  
[BK](#) [CPDQC3V3C-HF](#) [CPDQC12VE-HF](#) [MPLAD30KP170CA](#) [82357120100](#) [5.0SMLJ15CA-TP](#) [5KP18A-TP](#) [P6KE8.2A-TP](#)  
[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D5V0F6U8LP33-7](#) [TVS5501V10MUT5G](#) [5.0SMLJ24CA-TP](#) [SMAJ110CA-TP](#) [MPLAD15KP75CAE3](#)  
[MMAD1103e3/TR13](#) [DFLT40AQ-7](#)