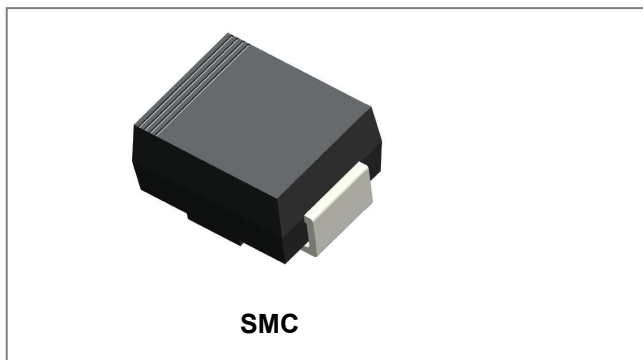




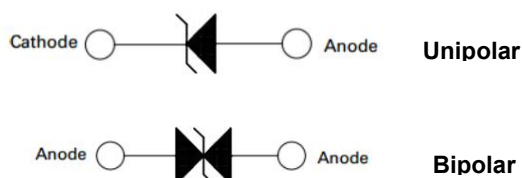
SMCJ5.0A-L THRU SMCJ440CA-L SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



Features

- Glass Passivated Die Construction
- 1500W Peak Pulse Power Dissipation
- 5.0V- 440V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- 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: SMC Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch

Maximum Ratings and Thermal Characteristics@T_A=25°C unless otherwise specified

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000us waveform (NOTE 1, 2, Fig.1)	P _{PPM}	1500	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2),(Note 3)	I _{FSM}	200	A
Typical Thermal Resistance Junction to Lead	R _{θJL}	15	°C/W
Typical Thermal Resistance Junction to Ambient	R _{θJA}	75	°C/W
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55 to 150	°C

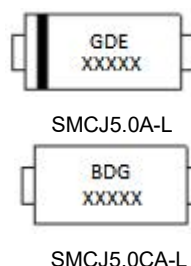
- Notes:**
1. Non-repetitive current pulse , per Fig. 4 and derated above T_A = 25°C per Fig. 3.
 2. Mounted on 8.0mm² copper pads to each terminal
 3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Ordering Information

Device	Package	Shipping
SMCJ5.0A-L THRU SMCJ440CA-L	SMC (Pb-Free)	3000pcs / reel
SMCJ5.0A-LTR THRU SMCJ440CA-LTR	SMC (Pb-Free)	3000pcs / 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

GDE/BDE = Part Name
YY = Year
WW = Week
L = Lot Number

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

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

Technical Data
Data Sheet N1930 Rev. -



Electrical Characteristics@T_A=25°C unless otherwise specified

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) @IT		TEST CURRENT IT(MA)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(µA)	
		UNI	BI		MIN.	MAX.				T _J =25°C	T _J =125°C
SMCJ5.0A-L	SMCJ5.0CA-L	GDE	BDE	5	6.4	7	10	9.2	163	800	2500
SMCJ6.0A-L	SMCJ6.0CA-L	GDG	BDG	6	6.67	7.37	10	10.3	145.7	800	2500
SMCJ6.5A-L	SMCJ6.5CA-L	GDK	BDK	6.5	7.22	7.98	10	11.2	134	500	1500
SMCJ7.0A-L	SMCJ7.0CA-L	GDM	BDM	7	7.78	8.6	10	12	125	200	800
SMCJ7.5A-L	SMCJ7.5CA-L	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100	500
SMCJ8.0A-L	SMCJ8.0CA-L	GDR	BDR	8	8.89	9.83	1	13.6	110.3	50	200
SMCJ8.5A-L	SMCJ8.5CA-L	GDT	BDT	8.5	9.44	10.4	1	14.4	104.2	20	100
SMCJ9.0A-L	SMCJ9.0CA-L	GDV	BDV	9	10	11.1	1	15.4	97.4	10	50
SMCJ10A-L	SMCJ10CA-L	GDY	BDY	10	11.1	12.3	1	17	88.3	5	10
SMCJ11A-L	SMCJ11CA-L	GDZ	BDZ	11	12.2	13.5	1	18.2	82.5	1	5
SMCJ12A-L	SMCJ12CA-L	GEE	BEE	12	13.3	14.7	1	19.9	75.4	1	5
SMCJ13A-L	SMCJ13CA-L	GEG	BEG	13	14.4	15.9	1	21.5	69.8	1	5
SMCJ14A-L	SMCJ14CA-L	GEK	BEK	14	15.6	17.2	1	23.2	64.7	1	5
SMCJ15A-L	SMCJ15CA-L	GEM	BEM	15	16.7	18.5	1	24.4	61.5	1	5
SMCJ16A-L	SMCJ16CA-L	GEP	BEP	16	17.8	19.7	1	26	57.7	1	5
SMCJ17A-L	SMCJ17CA-L	GER	BER	17	18.9	20.9	1	27.6	54.4	1	5
SMCJ18A-L	SMCJ18CA-L	GET	BET	18	20	22.1	1	29.2	51.4	1	5
SMCJ20A-L	SMCJ20CA-L	GEV	BEV	20	22.2	24.5	1	32.4	46.3	1	5
SMCJ22A-L	SMCJ22CA-L	GEX	BEX	22	24.4	26.9	1	35.5	42.3	1	5
SMCJ24A-L	SMCJ24CA-L	GEZ	BEZ	24	26.7	29.5	1	38.9	38.6	1	5
SMCJ26A-L	SMCJ26CA-L	GFE	BFE	26	28.9	31.9	1	42.1	35.7	1	5
SMCJ28A-L	SMCJ28CA-L	GFG	BFG	28	31.1	34.4	1	45.4	33.1	1	5
SMCJ30A-L	SMCJ30CA-L	GFK	BFK	30	33.3	36.8	1	48.4	31	1	5
SMCJ33A-L	SMCJ33CA-L	GFM	BFM	33	36.7	40.6	1	53.3	28.2	1	5
SMCJ36A-L	SMCJ36CA-L	GFP	BFP	36	40	44.2	1	58.1	25.9	1	5
SMCJ40A-L	SMCJ40CA-L	GFR	BFR	40	44.4	49.1	1	64.5	23.3	1	5
SMCJ43A-L	SMCJ43CA-L	GFT	BFT	43	47.8	52.8	1	69.4	21.7	1	5
SMCJ45A-L	SMCJ45CA-L	GFV	BFV	45	50	55.3	1	72.7	20.6	1	5
SMCJ48A-L	SMCJ48CA-L	GFX	BFX	48	53.3	58.9	1	77.4	19.4	1	5
SMCJ51A-L	SMCJ51CA-L	GFZ	BFZ	51	56.7	62.7	1	82.4	18.2	1	5
SMCJ54A-L	SMCJ54CA-L	GGE	BGE	54	60	66.3	1	87.1	17.3	1	5
SMCJ58A-L	SMCJ58CA-L	GGG	BGG	58	64.4	71.2	1	93.6	16.1	1	5
SMCJ60A-L	SMCJ60CA-L	GGK	BGK	60	66.7	73.7	1	96.8	15.5	1	5
SMCJ64A-L	SMCJ64CA-L	GGM	BGM	64	71.1	78.6	1	103	14.6	1	5
SMCJ70A-L	SMCJ70CA-L	GGP	BGP	70	77.8	86	1	113	13.3	1	5
SMCJ75A-L	SMCJ75CA-L	GGR	BGR	75	83.3	92.1	1	121	12.4	1	5
SMCJ78A-L	SMCJ78CA-L	GGT	BGT	78	86.7	95.8	1	126	11.9	1	5
SMCJ85A-L	SMCJ85CA-L	GGV	BGV	85	94.4	104	1	137	11	1	5
SMCJ90A-L	SMCJ90CA-L	GGX	BGX	90	100	111	1	146	10.3	1	5
SMCJ100A-L	SMCJ100CA-L	GGZ	BGZ	100	111	123	1	162	9.3	1	5
SMCJ110A-L	SMCJ110CA-L	GHE	BHE	110	122	135	1	177	8.5	1	5
SMCJ120A-L	SMCJ120CA-L	GHG	BHG	120	133	147	1	193	7.8	1	5
SMCJ130A-L	SMCJ130CA-L	GHK	BHK	130	144	159	1	209	7.2	1	5
SMCJ150A-L	SMCJ150CA-L	GHM	BHM	150	167	185	1	243	6.2	1	5
SMCJ160A-L	SMCJ160CA-L	GHP	BHP	160	178	197	1	259	5.8	1	5
SMCJ170A-L	SMCJ170CA-L	GHR	BHR	170	189	209	1	275	5.5	1	5
SMCJ180A-L	SMCJ180CA-L	GHT	BHT	180	201	222	1	292	5.1	1	5
SMCJ200A-L	SMCJ200CA-L	GHV	BHV	200	224	247	1	324	4.6	1	5

For bidirectional type having V_{RWM} of 20 volts and less, the IR limit is double.
For parts without A, the VBR is ± 10%

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

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) @IT		TEST CURRENT IT(MA)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(μA)	
		UNI	BI		MIN.	MAX.				$T_J=25^{\circ}\text{C}$	$T_J=125^{\circ}\text{C}$
SMCJ220A-L	SMCJ220CA-L	GHX	BHX	220	246	272	1	356	4.2	1	5
SMCJ250A-L	SMCJ250CA-L	GHZ	BHZ	250	279	309	1	405	3.7	1	5
SMCJ300A-L	SMCJ300CA-L	GJE	BJE	300	335	371	1	486	3.1	1	5
SMCJ350A-L	SMCJ350CA-L	GJG	BJG	350	391	432	1	567	2.6	1	5
SMCJ400A-L	SMCJ400CA-L	GJK	BJK	400	447	494	1	648	2.3	1	5
SMCJ440A-L	SMCJ440CA-L	GJM	BJM	440	492	543	1	713	2.1	1	5

Ratings and Characteristics Curves

Figure 1 - TVS Transients Clamping Waveform

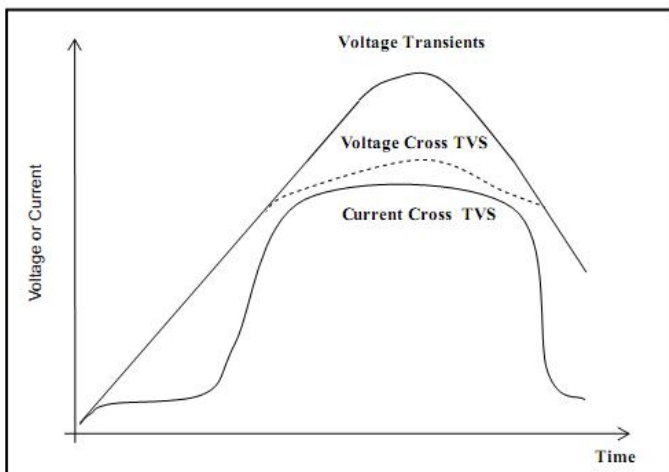


Figure 2 - Peak Pulse Power Rating

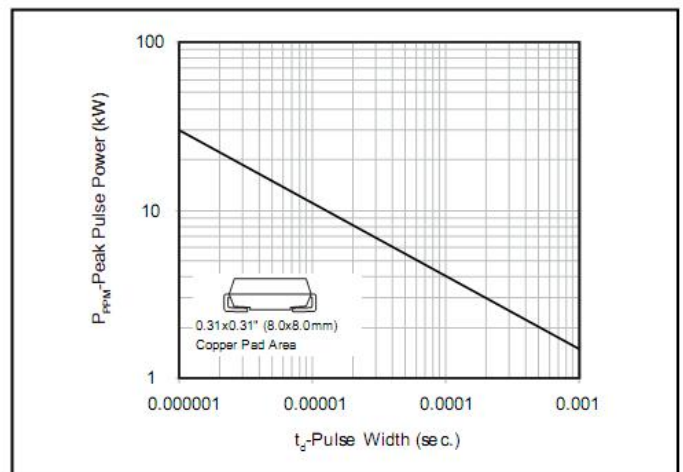


Figure 3 - Pulse Derating Curve

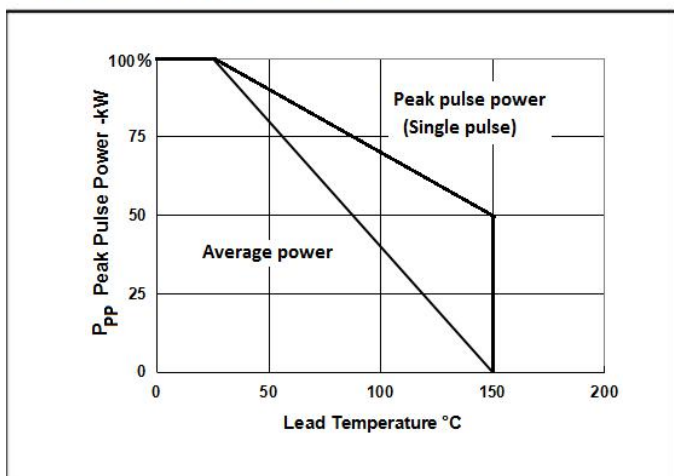


Figure 4 - Pulse Waveform

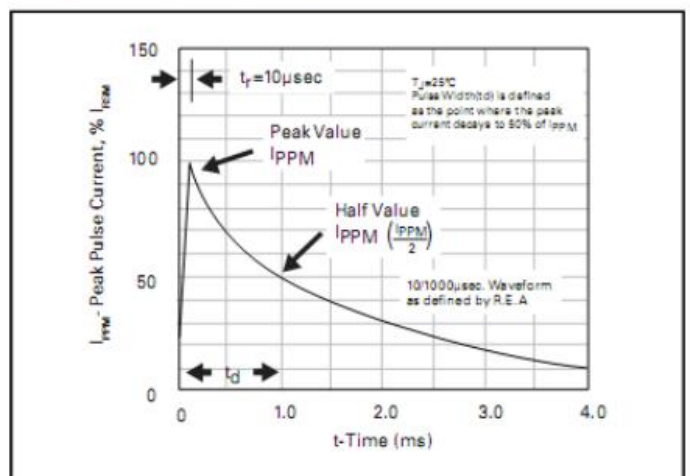




Figure 5 - Typical Junction Capacitance

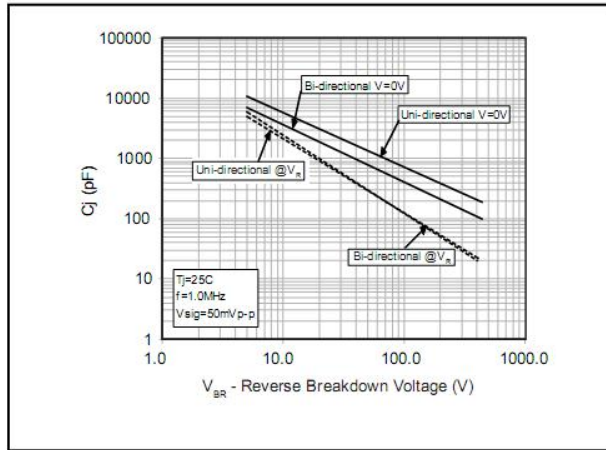


Figure 6 - Steady State Power Dissipation Derating Curve

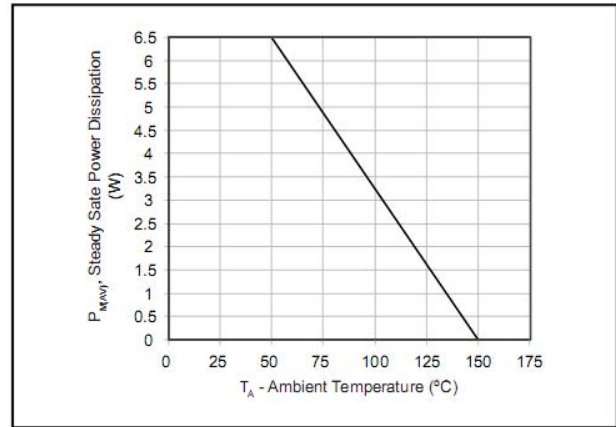
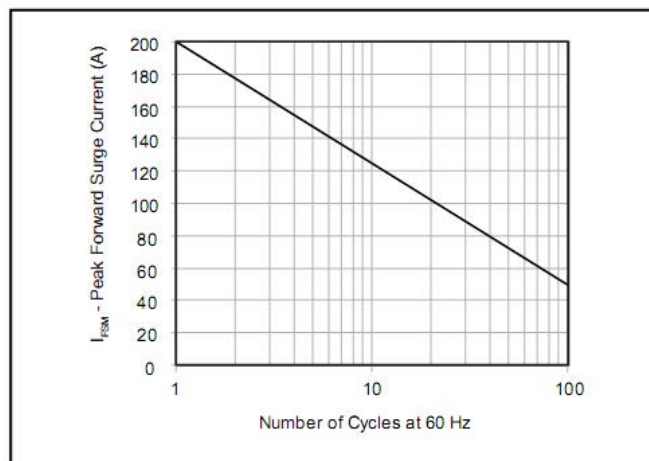
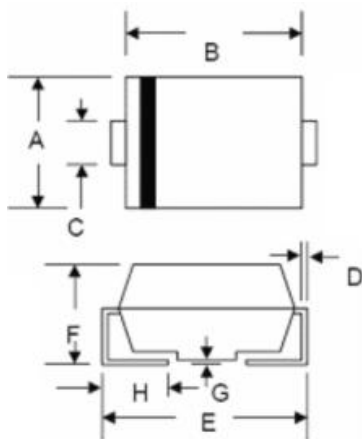


Figure 7 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

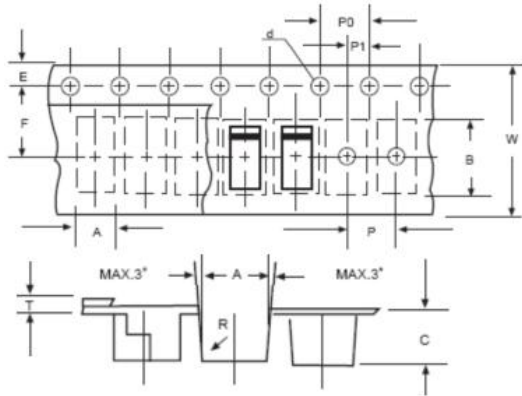


Mechanical Dimensions SMC



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.75	3.25	0.108	0.128
D	0.152	0.305	0.006	0.012
E	7.75	8.25	0.305	0.325
F	2.00	2.95	0.079	0.116
G	0.051	0.203	0.002	0.008
H	0.76	1.60	0.030	0.063

Carrier Tape Specification SMC



SYMBOL	Millimeters	
	Min.	Max.
A	5.90	6.10
B	8.20	8.40
C	2.40	2.60
d	1.40	1.60
E	1.40	1.60
F	7.60	7.70
P	7.90	8.10
P0	3.90	4.10
P1	3.90	4.10
T	-	0.600
W	15.80	16.20

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..