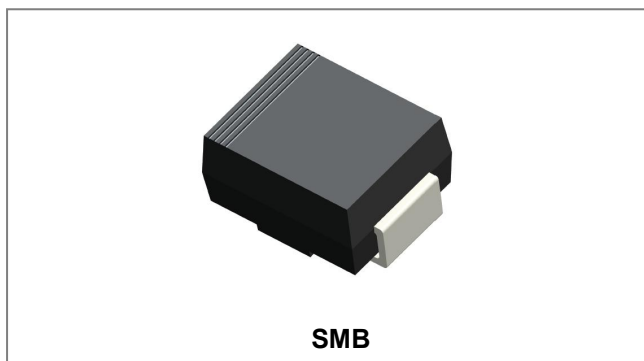


SMBJ5.0A-L THRU SMBJ440CA-L SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



Features

- Glass Passivated Die Construction
- 600W Peak Pulse Power Dissipation
- 5.0V- 400V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- RoHS Compliant
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

Circuit Diagram



Mechanical Data

- Case: SMB Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight:0.093 grams(approx.)

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

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation at T _A =25°C by 10x1000µs Waveform (Fig.1)(Note 1), (Note 2)	P _{PPM}	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2),(Note 3)	I _{FSM}	100	A
Typical Thermal Resistance Junction to Lead	R _{θJL}	20	°C/W
Typical Thermal Resistance Junction to Ambient	R _{θJA}	100	°C/W
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55 to 150	°C

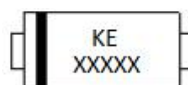
- Notes:**
1. Non-repetitive current pulse , per Fig. 4 and derated above T_L = 25°C per Fig. 3.
 2. Mounted on 5.0mm² (0.013mm thick) land areas.
 3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Ordering Information

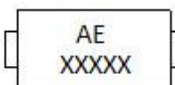
Device	Package	Shipping
SMBJ5.0A-L THRU SMBJ440CA-L	SMB (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Marking Diagram



SMBJ5.0A-L



SMBJ5.0CA-L

Where XXXXX is YYWWL

KE/AE = Marking code
 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 •

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

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_R (μA)	Maximum Reverse Leakage I_R @ V_R (μA) $T_J=150^{\circ}\text{C}$
		UNI	BI		MIN	MAX					
SMBJ5.0A-L	SMBJ5.0CA-L	KE	AE	5.0	6.40	700	10	9.2	65.3	800	2500
SMBJ6.0A-L	SMBJ6.0CA-L	KG	AG	6.0	6.67	737	10	10.3	58.3	800	2500
SMBJ6.5A-L	SMBJ6.5CA-L	KK	AK	6.5	722	798	10	11.2	53.6	500	1500
SMBJ7.0A-L	SMBJ7.0CA-L	KM	AM	7.0	778	8.60	10	12.0	50.0	200	800
SMBJ7.5A-L	SMBJ7.5CA-L	KP	AP	7.5	8.33	9.21	1	12.9	46.6	100	500
SMBJ8.0A-L	SMBJ8.0CA-L	KR	AR	8.0	8.89	9.83	1	13.6	44.2	50	200
SMBJ8.5A-L	SMBJ8.5CA-L	KT	AT	8.5	9.44	10.40	1	14.4	41.7	20	100
SMBJ9.0A-L	SMBJ9.0CA-L	KV	AV	9.0	10.00	11.10	1	15.4	39.0	10	50
SMBJ10A-L	SMBJ10CA-L	KX	AX	10.0	11.10	12.30	1	17.0	35.3	5	10
SMBJ11A-L	SMBJ11CA-L	KZ	AZ	11.0	12.20	13.50	1	18.2	33.0	1	5
SMBJ12A-L	SMBJ12CA-L	LE	BE	12.0	13.30	14.70	1	19.9	30.2	1	5
SMBJ13A-L	SMBJ13CA-L	LG	BG	13.0	14.40	15.90	1	21.5	28.0	1	5
SMBJ14A-L	SMBJ14CA-L	LK	BK	14.0	15.60	17.20	1	23.2	25.9	1	5
SMBJ15A-L	SMBJ15CA-L	LM	BM	15.0	16.70	18.50	1	24.4	24.6	1	5
SMBJ16A-L	SMBJ16CA-L	LP	BP	16.0	17.80	19.70	1	26.0	23.1	1	5
SMBJ17A-L	SMBJ17CA-L	LR	BR	17.0	18.90	20.90	1	27.6	21.8	1	5
SMBJ18A-L	SMBJ18CA-L	LT	BT	18.0	20.00	22.10	1	29.2	20.6	1	5
SMBJ20A-L	SMBJ20CA-L	LV	BV	20.0	22.20	24.50	1	32.4	18.6	1	5
SMBJ22A-L	SMBJ22CA-L	LX	BX	22.0	24.40	26.90	1	35.5	16.9	1	5
SMBJ24A-L	SMBJ24CA-L	LZ	BZ	24.0	26.70	29.50	1	38.9	15.5	1	5
SMBJ26A-L	SMBJ26CA-L	ME	CE	26.0	28.90	31.90	1	42.1	14.3	1	5
SMBJ28A-L	SMBJ28CA-L	MG	CG	28.0	31.10	34.40	1	45.4	13.3	1	5
SMBJ30A-L	SMBJ30CA-L	MK	CK	30.0	33.30	36.80	1	48.4	12.4	1	5
SMBJ33A-L	SMBJ33CA-L	MM	CM	33.0	36.70	40.60	1	53.3	11.3	1	5
SMBJ36A-L	SMBJ36CA-L	MP	CP	36.0	40.00	44.20	1	58.1	10.4	1	5
SMBJ40A-L	SMBJ40CA-L	MR	CR	40.0	44.40	49.10	1	64.5	9.3	1	5
SMBJ43A-L	SMBJ43CA-L	MT	CT	43.0	47.80	52.80	1	69.4	8.7	1	5
SMBJ45A-L	SMBJ45CA-L	MV	CV	45.0	50.00	55.30	1	72.7	8.3	1	5
SMBJ48A-L	SMBJ48CA-L	MX	CX	48.0	53.30	58.90	1	77.4	7.8	1	5
SMBJ51A-L	SMBJ51CA-L	MZ	CZ	51.0	56.70	62.70	1	82.4	7.3	1	5
SMBJ54A-L	SMBJ54CA-L	NE	DE	54.0	60.00	66.30	1	87.1	6.9	1	5
SMBJ58A-L	SMBJ58CA-L	NG	DG	58.0	64.40	71.20	1	93.6	6.5	1	5
SMBJ60A-L	SMBJ60CA-L	NK	DK	60.0	66.70	73.70	1	96.8	6.2	1	5
SMBJ64A-L	SMBJ64CA-L	NM	DM	64.0	71.10	78.60	1	103.0	5.9	1	5
SMBJ70A-L	SMBJ70CA-L	NP	DP	70.0	77.80	86.00	1	113.0	5.3	1	5
SMBJ75A-L	SMBJ75CA-L	NR	DR	75.0	83.30	92.10	1	121.0	5.0	1	5
SMBJ78A-L	SMBJ78CA-L	NT	DT	78.0	86.70	95.80	1	126.0	4.8	1	5
SMBJ85A-L	SMBJ85CA-L	NV	DV	85.0	94.40	104.00	1	137.0	4.4	1	5
SMBJ90A-L	SMBJ90CA-L	NX	DX	90.0	100.00	111.00	1	146.0	4.1	1	5
SMBJ100A-L	SMBJ100CA-L	NZ	DZ	100.0	111.00	123.00	1	162.0	3.7	1	5
SMBJ110A-L	SMBJ110CA-L	PE	EE	110.0	122.00	135.00	1	177.0	3.4	1	5
SMBJ120A-L	SMBJ120CA-L	PG	EG	120.0	133.00	147.00	1	193.0	3.1	1	5
SMBJ130A-L	SMBJ130CA-L	PK	EK	130.0	144.00	159.00	1	209.0	2.9	1	5
SMBJ150A-L	SMBJ150CA-L	PM	EM	150.0	167.00	185.00	1	243.0	2.5	1	5
SMBJ160A-L	SMBJ160CA-L	PP	EP	160.0	178.00	197.00	1	259.0	2.3	1	5
SMBJ170A-L	SMBJ170CA-L	PR	ER	170.0	189.00	209.00	1	275.0	2.2	1	5
SMBJ180A-L	SMBJ180CA-L	PT	ET	180.0	201.00	222.00	1	292.0	2.1	1	5
SMBJ200A-L	SMBJ200CA-L	PV	EV	200.0	224.00	247.00	1	324.0	1.9	1	5
SMBJ220A-L	SMBJ220CA-L	PX	EX	220.0	246.00	272.00	1	356.0	1.7	1	5
SMBJ250A-L	SMBJ250CA-L	PZ	EZ	250.0	279.00	309.00	1	405.0	1.5	1	5
SMBJ300A-L	SMBJ300CA-L	QE	FE	300.0	335.00	371.00	1	486.0	1.3	1	5
SMBJ350A-L	SMBJ350CA-L	QG	FG	350.0	391.00	432.00	1	567.0	1.1	1	5
SMBJ400A-L	SMBJ400CA-L	QK	FK	400.0	447.00	494.00	1	648.0	0.9	1	5
SMBJ440A-L	SMBJ440CA-L	QM	FM	440.0	492.00	543.00	1	713.0	0.9	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 $\pm 10\%$

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

Ratings and Characteristics Curves

Figure 1 - TVS Transients Clamping Waveform

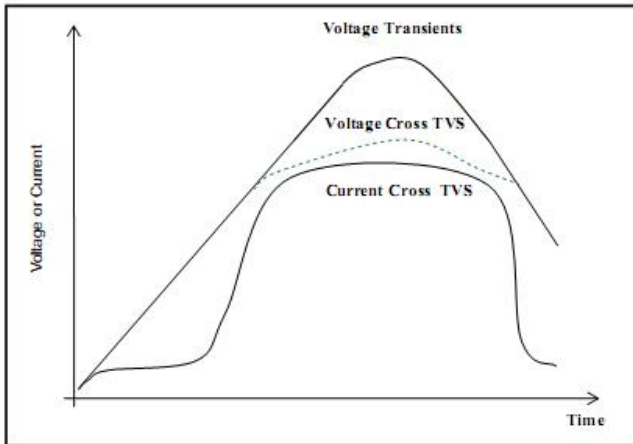


Figure 2 - Peak Pulse Power Rating

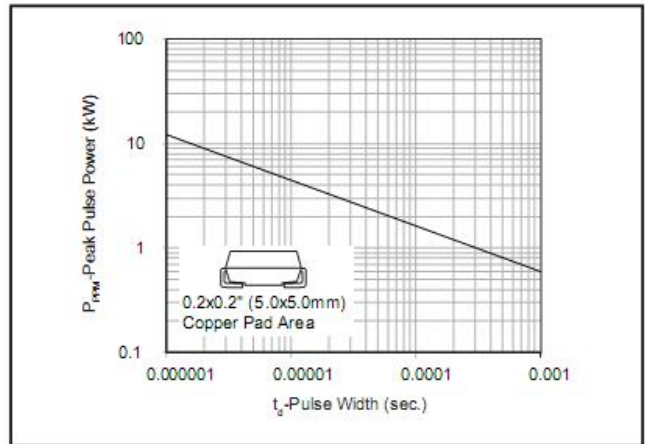


Figure 3 - Pulse Derating Curve

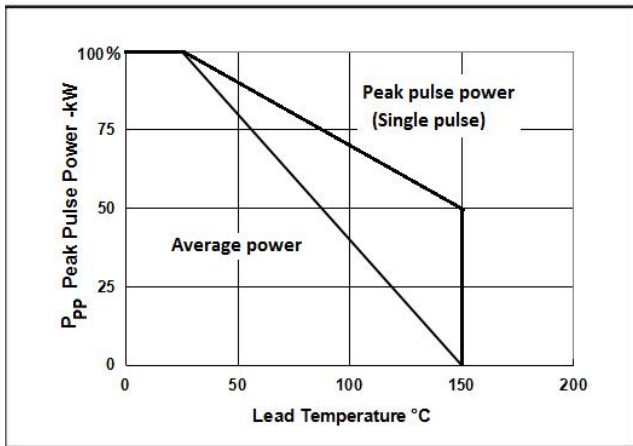


Figure 4 - Pulse Waveform

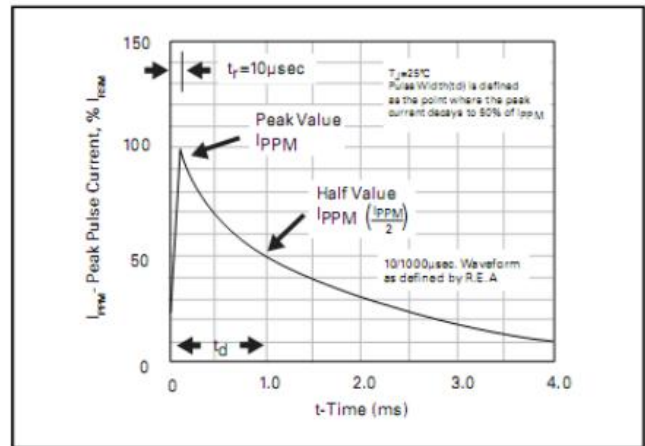


Figure 5 - Typical Junction Capacitance

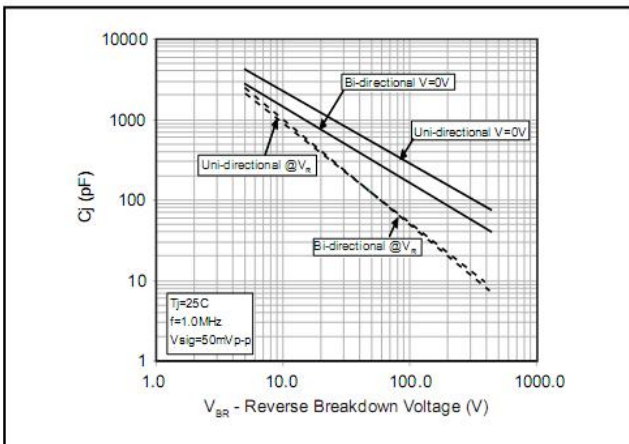


Figure 6 - Steady State Power Dissipation Derating Curve

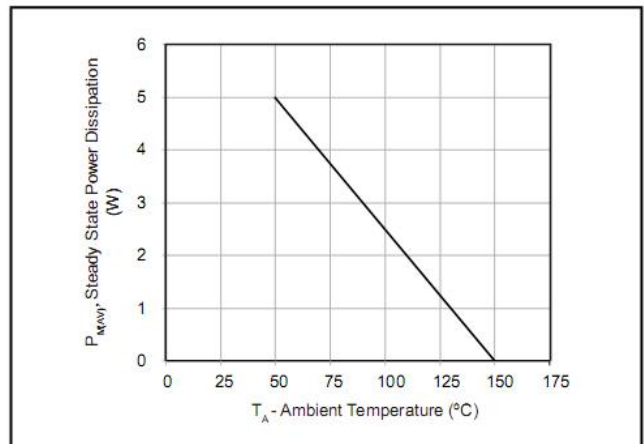
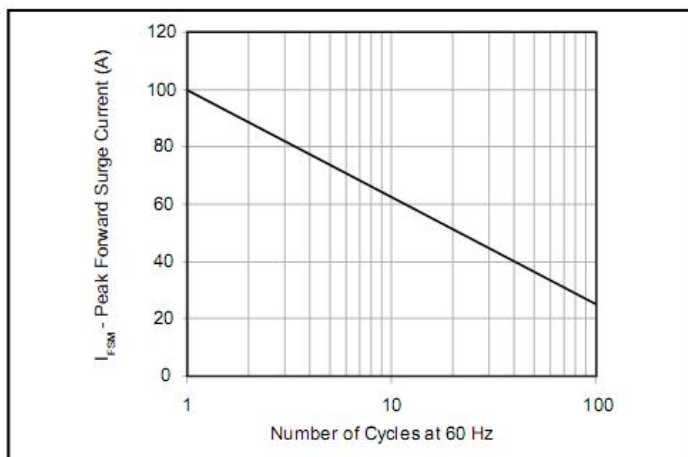
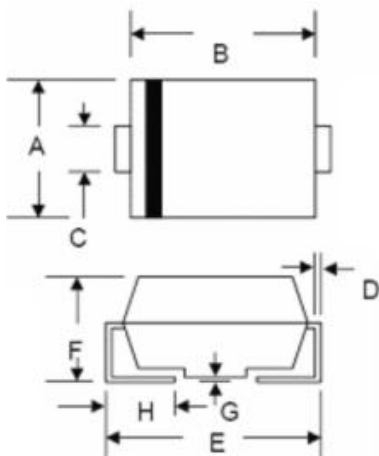




Figure 7 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

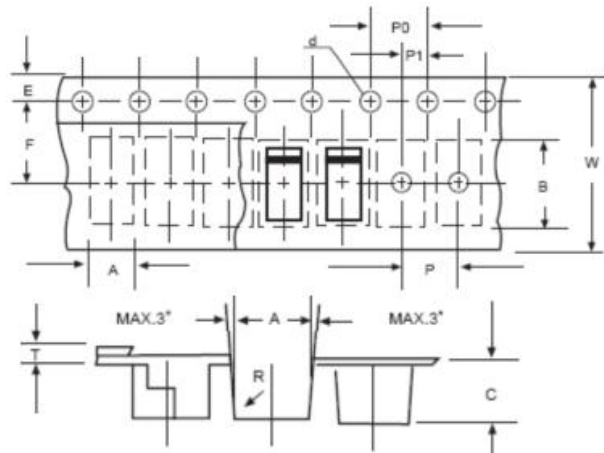


Mechanical Dimensions SMB



Dim.	SMB/DO-214AA			
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.06	4.70	0.160	0.185
C	1.80	2.20	0.071	0.087
D	0.152	0.305	0.006	0.012
E	4.80	5.59	0.189	0.220
F	2.10	2.60	0.083	0.102
G	0.051	0.203	0.002	0.008
H	0.76	1.52	0.030	0.060
			In Millimeters	In inches

Carrier Tape Specification SMB



SYMBOL	Millimeters	
	Min.	Max.
A	3.99	4.19
B	5.72	5.92
C	3.23	3.43
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	7.90	8.10
P0	3.90	4.10
P1	1.90	2.10
T	-	0.60
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 - Sangdest Microelectronics (Nanjing) Co., Ltd 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 - Sangdest Microelectronics (Nanjing) Co., Ltd 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 - Sangdest Microelectronics (Nanjing) Co., Ltd 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 - Sangdest Microelectronics (Nanjing) Co., Ltd 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 - Sangdest Microelectronics (Nanjing) Co., Ltd.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.

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..