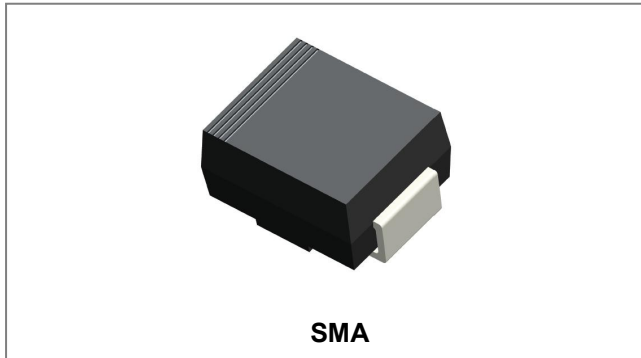


SMAJ5.0A-L THRU SMAJ440CA-L
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR


Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 400W peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0v to V(BR) for unidirectional and 5.0ns for bidirectional types
- 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°C unless otherwise specified

Parameter	Symbol	Value	Units
Junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	R _{θJL}	30	°C/W
Typical Thermal Resistance Junction to Ambient	R _{θJA}	120	°C/W
Peak Pulse Power Dissipation at T _A =25°C by 10x1000µs Waveform (Fig.2)(Note 1), (Note 2)	P _{PPM}	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I _{FSM}	40	A
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)	V _F	3.5/6.5	V
Power Dissipation on Infinite Heat Sink at T _A =50°C	P _{M(AV)}	3.3	W

- Notes:** 1. Non-repetitive current pulse , per Fig. 4 and derated above T_L = 25°C per Fig. 3.
 2. Mounted on 5.0x5.0mm copper pad to each terminal.
 3. Measured on 8.3ms single half sine wave or equivalent square wave, for unidirectional device only.
 4. V_F < 3.5V for V_{BR-} < 200V and V_F < 6.5V for V_{BR-} > 201V.

Ordering Information

Device	Package	Shipping
SMAJ5.0A-L THRU SMAJ440CA-L	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

AE/WE = 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 •



Electrical Characteristics@T_A=25° 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°C
		UNI	BI		MIN	MAX					
SMAJ5.0A-L	SMAJ5.0CA-L	AE	WE	5.0	6.40	7.00	10	9.2	43.5	800	2500
SMAJ6.0A-L	SMAJ6.0CA-L	AG	WG	6.0	6.67	7.37	10	10.3	38.8	800	2500
SMAJ6.5A-L	SMAJ6.5CA-L	AK	WK	6.5	7.22	7.98	10	11.2	35.7	500	1500
SMAJ7.0A-L	SMAJ7.0CA-L	AM	WM	7.0	7.78	8.60	10	12.0	33.3	200	800
SMAJ7.5A-L	SMAJ7.5CA-L	AP	WP	7.5	8.33	9.21	1	12.9	31.0	100	500
SMAJ8.0A-L	SMAJ8.0CA-L	AR	WR	8.0	8.89	9.83	1	13.6	29.4	50	200
SMAJ8.5A-L	SMAJ8.5CA-L	AT	WT	8.5	9.44	10.40	1	14.4	27.8	20	100
SMAJ9.0A-L	SMAJ9.0CA-L	AV	WV	9.0	10.00	11.10	1	15.4	26.0	10	50
SMAJ10A-L	SMAJ10CA-L	AX	WX	10.0	11.10	12.30	1	17.0	23.5	5	10
SMAJ11A-L	SMAJ11CA-L	AZ	WZ	11.0	12.20	13.50	1	18.2	22.0	1	5
SMAJ12A-L	SMAJ12CA-L	BE	XE	12.0	13.30	14.70	1	19.9	20.1	1	5
SMAJ13A-L	SMAJ13CA-L	BG	XG	13.0	14.40	15.90	1	21.5	18.6	1	5
SMAJ14A-L	SMAJ14CA-L	BK	XK	14.0	15.60	17.20	1	23.2	17.2	1	5
SMAJ15A-L	SMAJ15CA-L	BM	XM	15.0	16.70	18.50	1	24.4	16.4	1	5
SMAJ16A-L	SMAJ16CA-L	BP	XP	16.0	17.80	19.70	1	26.0	15.4	1	5
SMAJ17A-L	SMAJ17CA-L	BR	XR	17.0	18.90	20.90	1	27.6	14.5	1	5
SMAJ18A-L	SMAJ18CA-L	BT	XT	18.0	20.00	22.10	1	29.2	13.7	1	5
SMAJ20A-L	SMAJ20CA-L	BV	XV	20.0	22.20	24.50	1	32.4	12.3	1	5
SMAJ22A-L	SMAJ22CA-L	BX	XX	22.0	24.40	26.90	1	35.5	11.3	1	5
SMAJ24A-L	SMAJ24CA-L	BZ	XZ	24.0	26.70	29.50	1	38.9	10.3	1	5
SMAJ26A-L	SMAJ26CA-L	CE	YE	26.0	28.90	31.90	1	42.1	9.5	1	5
SMAJ28A-L	SMAJ28CA-L	CG	YG	28.0	31.10	34.40	1	45.4	8.8	1	5
SMAJ30A-L	SMAJ30CA-L	CK	YK	30.0	33.30	36.80	1	48.4	8.3	1	5
SMAJ33A-L	SMAJ33CA-L	CM	YM	33.0	36.70	40.60	1	53.3	7.5	1	5
SMAJ36A-L	SMAJ36CA-L	CP	YP	36.0	40.00	44.20	1	58.1	6.9	1	5
SMAJ40A-L	SMAJ40CA-L	CR	YR	40.0	44.40	49.10	1	64.5	6.2	1	5
SMAJ43A-L	SMAJ43CA-L	CT	YT	43.0	47.80	52.80	1	69.4	5.8	1	5
SMAJ45A-L	SMAJ45CA-L	CV	YV	45.0	50.00	55.30	1	72.7	5.5	1	5
SMAJ48A-L	SMAJ48CA-L	CX	YX	48.0	53.30	58.90	1	77.4	5.2	1	5
SMAJ51A-L	SMAJ51CA-L	CZ	YZ	51.0	56.70	62.70	1	82.4	4.9	1	5
SMAJ54A-L	SMAJ54CA-L	RE	ZE	54.0	60.00	66.30	1	87.1	4.6	1	5
SMAJ58A-L	SMAJ58CA-L	RG	ZG	58.0	64.40	71.20	1	93.6	4.3	1	5
SMAJ60A-L	SMAJ60CA-L	RK	ZK	60.0	66.70	73.70	1	96.8	4.1	1	5
SMAJ64A-L	SMAJ64CA-L	RM	ZM	64.0	71.10	78.60	1	103.0	3.9	1	5
SMAJ70A-L	SMAJ70CA-L	RP	ZP	70.0	77.80	86.00	1	113.0	3.5	1	5
SMAJ75A-L	SMAJ75CA-L	RR	ZR	75.0	83.30	92.10	1	121.0	3.3	1	5
SMAJ78A-L	SMAJ78CA-L	RT	ZT	78.0	86.70	95.80	1	126.0	3.2	1	5
SMAJ85A-L	SMAJ85CA-L	RV	ZV	85.0	94.40	104.00	1	137.0	2.9	1	5
SMAJ90A-L	SMAJ90CA-L	RX	ZX	90.0	100.00	111.00	1	146.0	2.7	1	5
SMAJ100A-L	SMAJ100CA-L	RZ	ZZ	100.0	111.00	123.00	1	162.0	2.5	1	5
SMAJ110A-L	SMAJ110CA-L	SE	VE	110.0	122.00	135.00	1	177.0	2.3	1	5
SMAJ120A-L	SMAJ120CA-L	SG	VG	120.0	133.00	147.00	1	193.0	2.1	1	5
SMAJ130A-L	SMAJ130CA-L	SK	VK	130.0	144.00	159.00	1	209.0	1.9	1	5
SMAJ150A-L	SMAJ150CA-L	SM	VM	150.0	167.00	185.00	1	243.0	1.6	1	5
SMAJ160A-L	SMAJ160CA-L	SP	VP	160.0	178.00	197.00	1	259.0	1.5	1	5
SMAJ170A-L	SMAJ170CA-L	SR	VR	170.0	189.00	209.00	1	275.0	1.5	1	5
SMAJ180A-L	SMAJ180CA-L	ST	VT	180.0	201.00	222.00	1	292.0	1.4	1	5
SMAJ200A-L	SMAJ200CA-L	SV	VV	200.0	224.00	247.00	1	324.0	1.2	1	5
SMAJ220A-L	SMAJ220CA-L	SX	VX	220.0	246.00	272.00	1	356.0	1.1	1	5
SMAJ250A-L	SMAJ250CA-L	SZ	VZ	250.0	279.00	309.00	1	405.0	1.0	1	5
SMAJ300A-L	SMAJ300CA-L	TE	UE	300.0	335.00	371.00	1	486.0	0.8	1	5
SMAJ350A-L	SMAJ350CA-L	TG	UG	350.0	391.00	432.00	1	567.0	0.7	1	5
SMAJ400A-L	SMAJ400CA-L	TK	UK	400.0	447.00	494.00	1	648.0	0.6	1	5
SMAJ440A-L	SMAJ440CA-L	TM	UM	440.0	492.00	543.00	1	713.0	0.6	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%

Ratings and Characteristics Curves

Figure 1 - TVS Transients Clamping Waveform

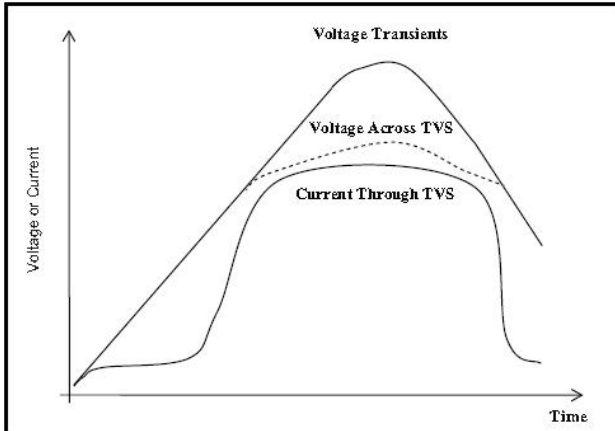


Figure 2 - Peak Pulse Power Rating Curve

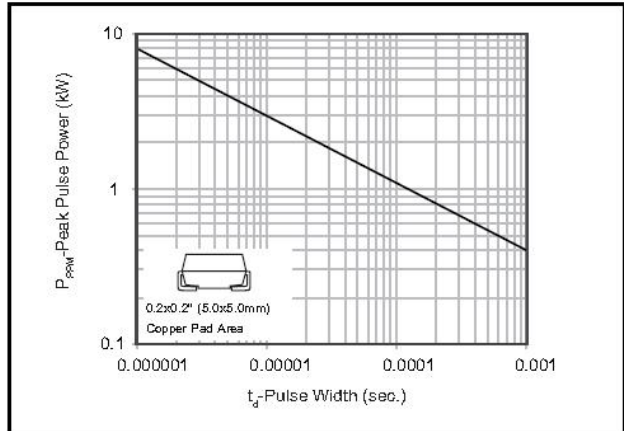


Figure 3 - Pulse Derating Curve

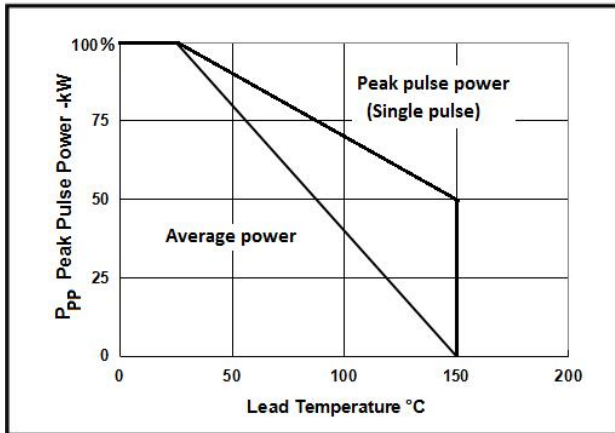


Figure 4 - Pulse Waveform

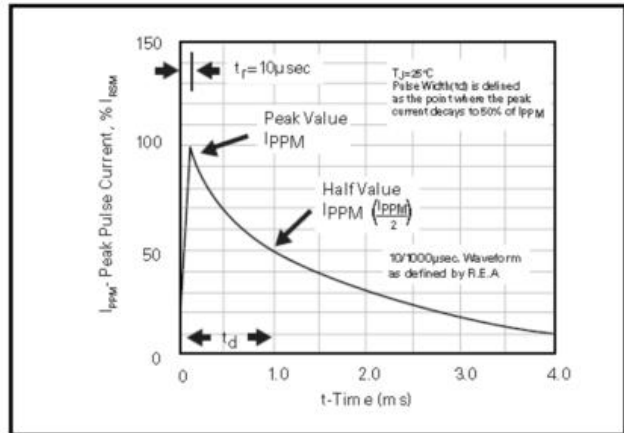


Figure 5 - Typical Junction Capacitance

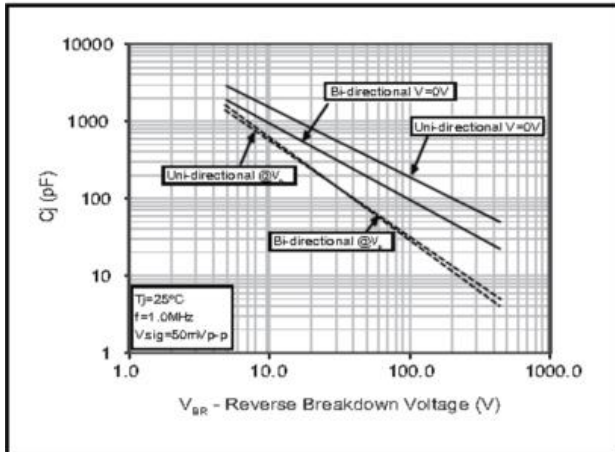


Figure 6 - Steady State Power Dissipation Derating Curve

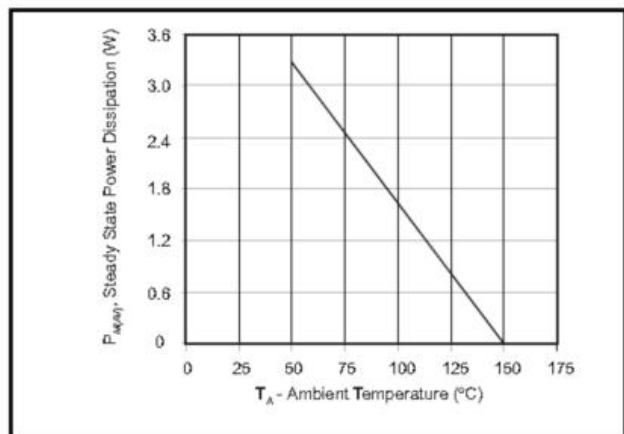
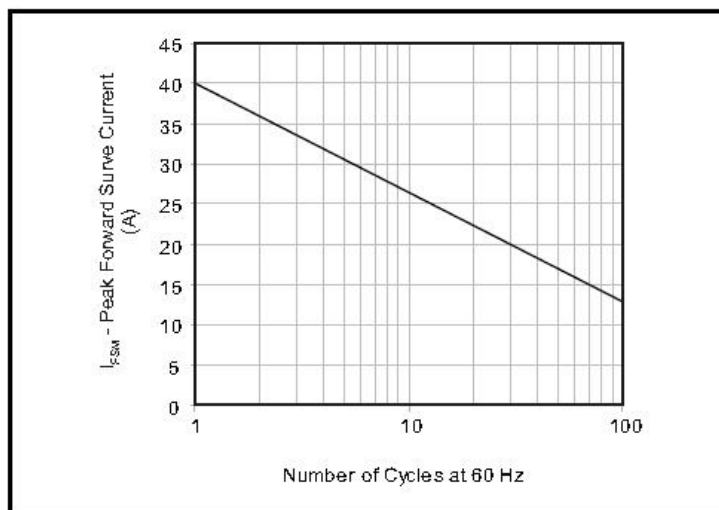
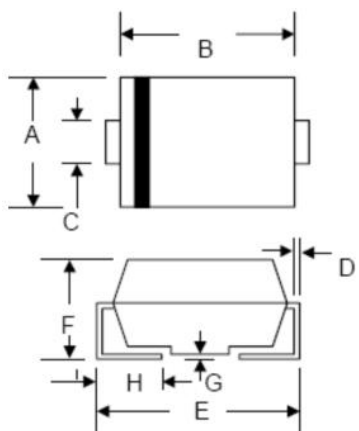


Figure 7 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

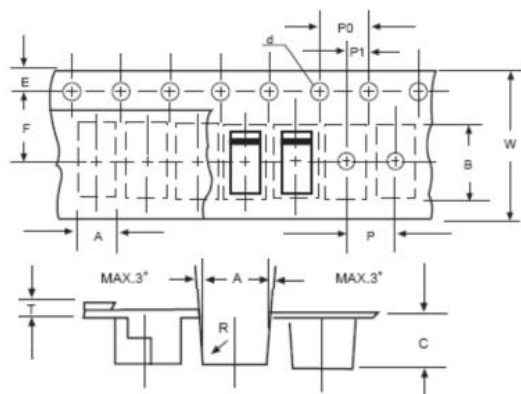


Mechanical Dimensions SMA



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	5.66	0.189	0.223
F	1.90	2.95	0.075	0.116
G	0.05	0.203	0.002	0.008
H	0.76	1.52	0.030	0.600

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



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