SMAJ5.0A THRU SMAJ440CA

Transient Voltage Suppressor

Reverse Voltage 5.0 - 440 Volts
Power Dissipation - 400 Watts

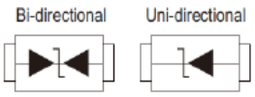
Features

- 400W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle):0.01%
- For surface mounted applications to optimize board space
- Low incremental surge impedance
- Excellent clamping capability
- Very fast response time
- Uni and Bidirectional unit
- Plastic package has underwriters laboratory flammability 94V-0
- Meet Halogen free and RoHS compliant

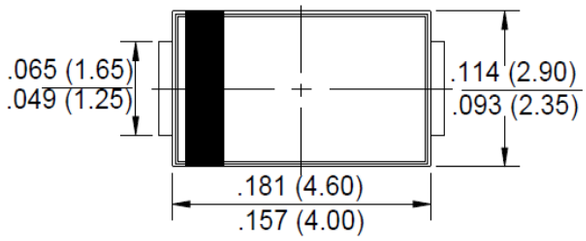
Mechanical Data

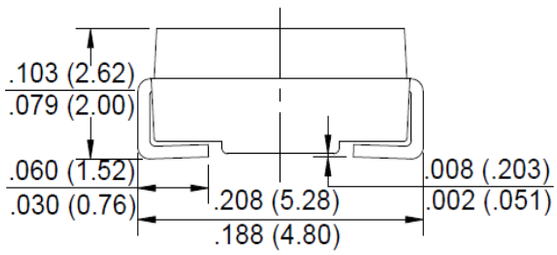
- Case: SMA, molded plastic.
- Terminals: solderable per MIL-STD-750,method 2026.
- Polarity: Color band denotes positive end (cathode) bi-directional models

Circuit Diagram



SMA





Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristics	Symbol	Value	Unit
Peak power dissipation on a 10/1000μs waveform (Note 1)	P_{PP}	400	W
Peak pulse current on a 10/1000μs waveform (Note 1)	I_{PP}	See Next Table	A
Steady state power dissipation at TL=50°C	P_D	1.0	W
Peak forward surge current, 8.3ms single half sine-wave uni-directional only (Note 2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A for uni-directional only	V_F	3.5/5.0	V
Operating Junction Temperature Range	T_J	-55 to +150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

Notes: 1. Non-repetitive current pulse, and derated above TA=25°C
2. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal
3. VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V

Rating and Characteristic Curves

SMAJ5.0A THRU SMAJ440CA

Part No.	Breakdown voltage VBR @ IT			Maximum Reverse Leakage @VRWM	Working Peak Reverse Voltage	Maximum Reverse Surge Curren	Maximum Clamping Voltage @IPP	Marking	
	Min.(V)	Max.(V)	IT(V)	IR (μA)	VRWM (V)	IPP (A)	VC (V)	UNI	BI
SMAJ5.0(C)A	6.4	7.25	10	800	5	43.5	9.2	AE	WE
SMAJ6.0(C)A	6.67	7.37	10	800	6	38.8	10.3	AG	WG
SMAJ6.5(C)A	7.22	7.898	10	500	6.5	35.7	11.2	AK	WK
SMAJ7.0(C)A	7.78	8.6	10	200	7	33.3	12	AM	WM
SMAJ7.5(C)A	8.33	9.21	1	100	7.5	31	12.9	AP	WP
SMAJ8.0(C)A	8.89	9.83	1	50	8	29.4	13.6	AR	WR
SMAJ8.5(C)A	9.44	10.4	1	10	8.5	27.8	14.4	AT	WT
SMAJ9.0(C)A	10	11.1	1	5	9	26	15.4	AV	WV
SMAJ10(C)A	11.1	12.3	1	5	10	23.5	17	AX	WX
SMAJ11(C)A	12.2	13.5	1	5	11	22	18.2	AZ	WZ
SMAJ12(C)A	13.3	14.7	1	5	12	20.1	19.9	BE	XE
SMAJ13(C)A	14.4	15.9	1	5	13	18.6	21.5	BG	XG
SMAJ14(C)A	15.6	17.2	1	5	14	17.2	23.2	BK	XK
SMAJ15(C)A	16.7	18.5	1	5	15	16.4	24.4	BM	XM
SMAJ16(C)A	17.8	19.7	1	5	16	15.4	26	BP	XP
SMAJ17(C)A	18.9	20.9	1	5	17	14.5	27.6	BR	XR
SMAJ18(C)A	20	22.1	1	5	18	13.7	29.2	BT	XT
SMAJ20(C)A	22.2	24.5	1	5	20	12.3	32.4	BV	XV
SMAJ22(C)A	24.4	26.9	1	5	22	11.3	35.5	BX	XX
SMAJ24(C)A	26.7	29.5	1	5	24	10.3	38.9	BZ	XZ
SMAJ26(C)A	28.9	31.9	1	5	26	9.5	42.1	CE	YE
SMAJ28(C)A	31.1	34.4	1	5	28	8.8	45.4	CG	YG
SMAJ30(C)A	33.3	36.8	1	5	30	8.3	48.4	CK	YK
SMAJ33(C)A	36.7	40.6	1	5	33	7.5	53.3	CM	YM
SMAJ36(C)A	40	44.2	1	5	36	6.9	58.1	CP	YP
SMAJ40(C)A	44.4	49.1	1	5	40	6.2	64.5	CR	YR
SMAJ43(C)A	47.8	52.8	1	5	43	5.8	69.4	CT	YT
SMAJ45(C)A	50	55.3	1	5	45	5.5	72.7	CV	YV
SMAJ48(C)A	53.3	58.9	1	5	48	5.2	77.4	CX	YX
SMAJ51(C)A	56.7	62.7	1	5	51	4.9	82.4	CZ	YZ
SMAJ54(C)A	60	66.3	1	5	54	4.6	87.1	RE	ZE
SMAJ58(C)A	64.4	71.2	1	5	58	4.3	93.6	RG	ZG
SMAJ60(C)A	66.7	73.7	1	5	60	4.1	96.8	RK	ZK
SMAJ64(C)A	71.1	78.6	1	5	64	3.9	103	RM	ZM
SMAJ70(C)A	77.8	86	1	5	70	3.5	113	RP	ZP
SMAJ75(C)A	83.3	92.1	1	5	75	3.3	121	RR	ZR
SMAJ78(C)A	86.7	95.8	1	5	78	3.2	126	RT	ZT
SMAJ85(C)A	94.4	104	1	5	85	2.9	137	RV	ZV
SMAJ90(C)A	100	111	1	5	90	2.7	146	RX	ZX
SMAJ100(C)A	111	123	1	5	100	2.4	162	RZ	ZZ

The curve above is for reference only.

Rating and Characteristic Curves

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Part No.	Breakdown voltage VBR @ IT			Maximum Reverse Leakage @VRWM	Working Peak Reverse Voltage	Maximum Reverse Surge Curren	Maximum Clamping Voltage @IPP	Marking	
	Min.(V)	Max.(V)	IT(V)	IR (μA)	VRWM (V)	IPP (A)	VC (V)	UNI	BI
SMAJ110(C)A	122	135	1	5	110	2.2	177	SE	VE
SMAJ120(C)A	133	147	1	5	120	2.1	193	SG	VG
SMAJ130(C)A	144	159	1	5	130	1.9	209	SK	VK
SMAJ150(C)A	167	185	1	5	150	1.6	243	SM	VM
SMAJ160(C)A	178	197	1	5	160	1.5	259	SP	VP
SMAJ170(C)A	189	209	1	5	170	1.4	275	SR	VR
SMAJ180(C)A	200	220	1	5	180	1.3	291.6	ST	VT
SMAJ200(C)A	224	247	1	1	200	1.2	324	SV	VV
SMAJ220(C)A	246	272	1	1	220	1.1	356	SX	VX
SMAJ250(C)A	279	309	1	1	250	1	405	SZ	VZ
SMAJ300(C)A	335	371	1	1	300	0.8	486	TE	UE
SMAJ350(C)A	391	432	1	1	350	0.7	567	TG	UG
SMAJ400(C)A	447	494	1	1	400	0.6	648	TK	UK
SMAJ440(C)A	492	543	1	1	440	0.6	713	TM	UM

Rating and Characteristic Curves

Fig.1 - Pulse Derating Curve

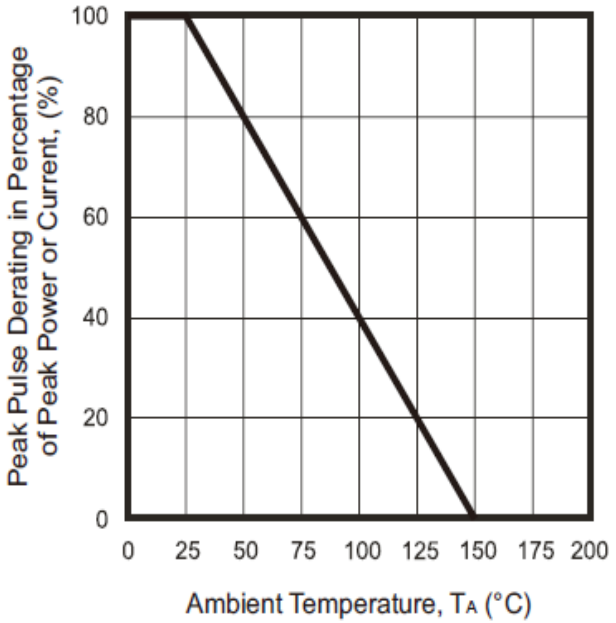
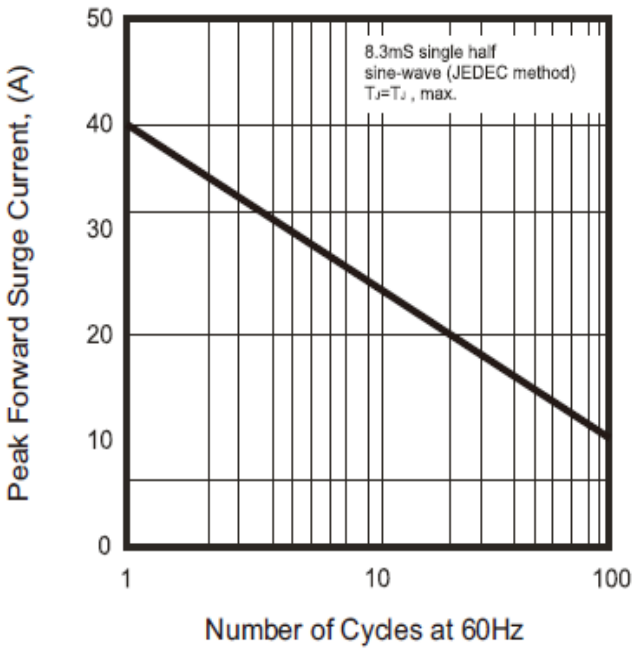


Fig.2 - Maximum Non-Repetitive Surge Current



The curve above is for reference only.

Fig.3 - Steady State Power Derating Curve

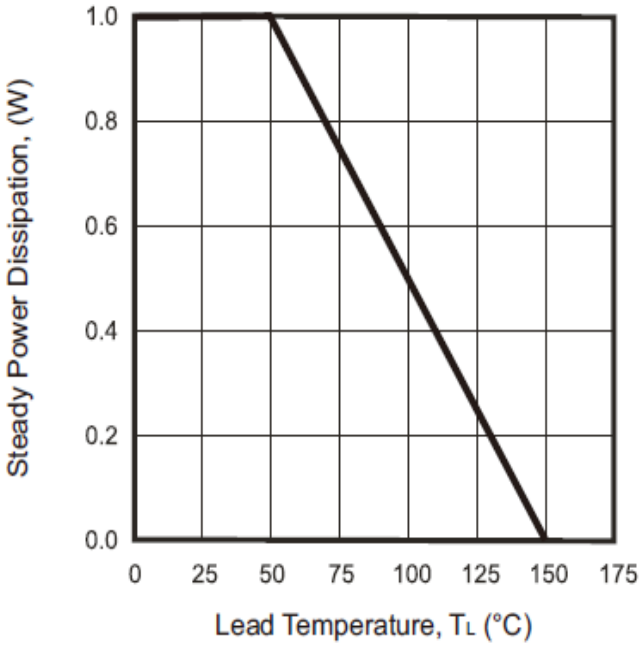


Fig.4 - Peak Pulse Power Rating Curve

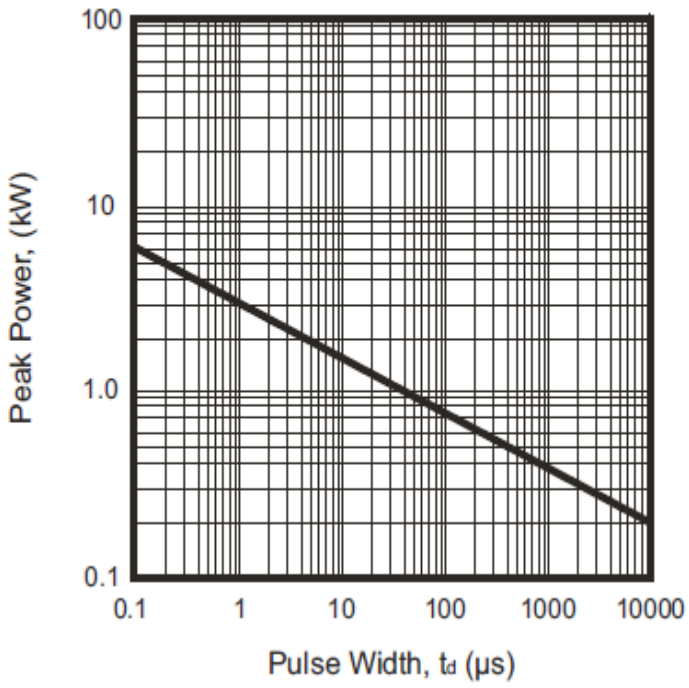
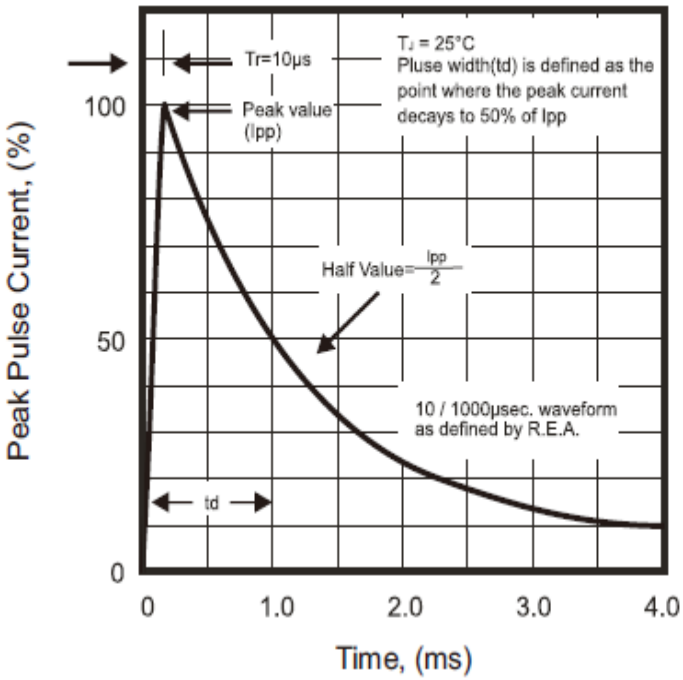


Fig.5 - Pulse Waveform



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