

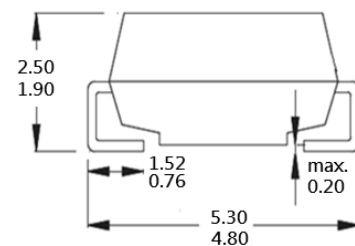
Features

- Glass passivated chip
- 400W peak pulse power capability with a 10/1000 μ s waveform, Repetitive rate (duty cycle) : 0.01%.
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

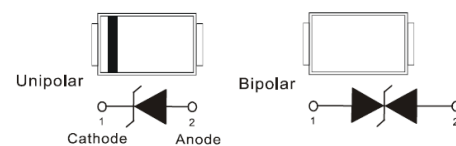
Mechanical Data

- Epoxy: UL94V-0 rated flame retardant
- Case: Epoxy, Molded
- Terminals: Solder plated solderable per MIL-STD-750 Method 2026
- Polarity: Color band denotes cathode end
- Weight: approx.. 0.0679grams

SMA/ DO -214AC



Unit: millimeters



Maximum Ratings & Electrical Characteristic

Max. Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	UNITS
Peak Power Dissipation with a 10/1000 μ s waveform (Notes 1)	P_{PP}	400	Watts
Peak Forward Surge Current , 8.3 ms single half sine-wave unidirectional only (Notes 2)	I_{FSM}	40	Amps
Peak Pulse Current with a 10/1000 μ s waveform (Notes 1)	I_{PP}	See Next Table	Amps
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	1.0	Watts
Max. instantaneous forward voltage at 25 A for unidirectional only (Notes 3)	V_F	3.5/5.0	Volts
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

Notes :

- (1) Non-repetitive current pulse, per Fig.5 and derated above $T_A = 25^\circ\text{C}$ per Fig.1.
- (2) Measured on 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
- (3) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 210\text{V}$



SMAJ5.0A THRU SMAJ440CA

**Surface Mount Transient Voltage Suppressors Working
Voltage:5.0 to 440V
Peak Pulse Power:400W**

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000μs	Peak Pulse Current 10/1000μs
				V _{RWM}	V _{BR} @ I _T		I _T	I _R @ V _{RWM}		V _C @ I _{PP}	I _{PP}
					Min.	Max.		UNI	BI		
UNI	BI	UNI	BI	V	V	V	mA	μA	μA	V	A
SMAJ5.0A	SMAJ5.0CA	AE	WE	5	6.4	7	10	800	1600	9.2	43.48
SMAJ6.0A	SMAJ6.0CA	AG	WG	6	6.67	7.37	10	800	1600	10.3	38.83
SMAJ6.5A	SMAJ6.5CA	AK	WK	6.5	7.22	7.98	10	500	1000	11.2	35.71
SMAJ7.0A	SMAJ7.0CA	AM	WM	7	7.78	8.6	10	200	400	12	33.33
SMAJ7.5A	SMAJ7.5CA	AP	WP	7.5	8.33	9.21	1	100	200	12.9	31.01
SMAJ8.0A	SMAJ8.0CA	AR	WR	8	8.89	9.83	1	50	100	13.6	29.41
SMAJ8.5A	SMAJ8.5CA	AT	WT	8.5	9.44	10.4	1	10	20	14.4	27.78
SMAJ9.0A	SMAJ9.0CA	AV	WV	9	10	11.1	1	5	5	15.4	25.97
SMAJ10A	SMAJ10CA	AX	WX	10	11.1	12.3	1	5	5	17	23.53
SMAJ11A	SMAJ11CA	AZ	WZ	11	12.2	13.5	1	1	1	18.2	21.98
SMAJ12A	SMAJ12CA	BE	XE	12	13.3	14.7	1	1	1	19.9	20.1
SMAJ13A	SMAJ13CA	BG	XG	13	14.4	15.9	1	1	1	21.5	18.6
SMAJ14A	SMAJ14CA	BK	XK	14	15.6	17.2	1	1	1	23.2	17.24
SMAJ15A	SMAJ15CA	BM	XM	15	16.7	18.5	1	1	1	24.4	16.39
SMAJ16A	SMAJ16CA	BP	XP	16	17.8	19.7	1	1	1	26	15.38
SMAJ17A	SMAJ17CA	BR	XR	17	18.9	20.9	1	1	1	27.6	14.49
SMAJ18A	SMAJ18CA	BT	XT	18	20	22.1	1	1	1	29.2	13.7
SMAJ19A	SMAJ19CA	BB	XB	19	21.1	23.3	1	1	1	30.8	13
SMAJ20A	SMAJ20CA	BV	XV	20	22.2	24.5	1	1	1	32.4	12.35
SMAJ22A	SMAJ22CA	BX	XX	22	24.4	26.9	1	1	1	35.5	11.27
SMAJ24A	SMAJ24CA	BZ	XZ	24	26.7	29.5	1	1	1	38.9	10.28
SMAJ26A	SMAJ26CA	CE	YE	26	28.9	31.9	1	1	1	42.1	9.5
SMAJ28A	SMAJ28CA	CG	YG	28	31.1	34.4	1	1	1	45.4	8.81
SMAJ30A	SMAJ30CA	CK	YK	30	33.3	36.8	1	1	1	48.4	8.26
SMAJ33A	SMAJ33CA	CM	YM	33	36.7	40.6	1	1	1	53.3	7.5
SMAJ36A	SMAJ36CA	CP	YP	36	40	44.2	1	1	1	58.1	6.88
SMAJ40A	SMAJ40CA	CR	YR	40	44.4	49.1	1	1	1	64.5	6.2
SMAJ43A	SMAJ43CA	CT	YT	43	47.8	52.8	1	1	1	69.4	5.76
SMAJ45A	SMAJ45CA	CV	YV	45	50	55.3	1	1	1	72.7	5.5
SMAJ48A	SMAJ48CA	CX	YX	48	53.3	58.9	1	1	1	77.4	5.17
SMAJ51A	SMAJ51CA	CZ	YZ	51	56.7	62.7	1	1	1	82.4	4.85
SMAJ54A	SMAJ54CA	RE	ZE	54	60	66.3	1	1	1	87.1	4.59
SMAJ58A	SMAJ58CA	RG	ZG	58	64.4	71.2	1	1	1	93.6	4.27
SMAJ60A	SMAJ60CA	RK	ZK	60	66.7	73.7	1	1	1	96.8	4.13
SMAJ64A	SMAJ64CA	RM	ZM	64	71.1	78.6	1	1	1	103	3.88
SMAJ70A	SMAJ70CA	RP	ZP	70	77.8	86	1	1	1	113	3.54
SMAJ75A	SMAJ75CA	RR	ZR	75	83.3	92.1	1	1	1	121	3.31
SMAJ78A	SMAJ78CA	RT	ZT	78	86.7	95.8	1	1	1	126	3.17
SMAJ80A	SMAJ80CA	RB	ZB	80	88.8	97.6	1	1	1	129.6	3.09



SMAJ5.0A THRU SMAJ440CA

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				V _{RWM}	V _{BR} @ I _T		I _T	I _R @ V _{RWM}		V _C @ I _{PP}	I _{PP}
					Min.	Max.		UNI	BI		
UNI	BI	UNI	BI	V	V	V	mA	μA	μA	V	A
SMAJ85A	SMAJ85CA	RV	ZV	85	94.4	104	1	1	1	137	2.92
SMAJ90A	SMAJ90CA	RX	ZX	90	100	111	1	1	1	146	2.74
SMAJ100A	SMAJ100CA	RZ	ZZ	100	111	123	1	1	1	162	2.47
SMAJ110A	SMAJ110CA	SE	VE	110	122	135	1	1	1	177	2.26
SMAJ120A	SMAJ120CA	SG	VG	120	133	147	1	1	1	193	2.07
SMAJ130A	SMAJ130CA	SK	VK	130	144	159	1	1	1	209	1.91
SMAJ140A	SMAJ140CA	SB	VB	140	155	171	1	1	1	226.8	1.76
SMAJ150A	SMAJ150CA	SM	VM	150	167	185	1	1	1	243	1.65
SMAJ160A	SMAJ160CA	SP	VP	160	178	197	1	1	1	259	1.54
SMAJ170A	SMAJ170CA	SR	VR	170	189	209	1	1	1	275	1.45
SMAJ180A	SMAJ180CA	ST	VT	180	200	220	1	1	1	291.6	1.37
SMAJ190A	SMAJ190CA	SV	VV	190	211	232	1	1	1	307.8	1.3
SMAJ200A	SMAJ200CA	SW	VW	200	224	247	1	1	1	324	1.23
SMAJ220A	SMAJ220CA	SX	VX	220	246	272	1	1	1	356	1.12
SMAJ250A	SMAJ250CA	SZ	VZ	250	279	309	1	1	1	405	0.99
SMAJ300A	SMAJ300CA	DE	HE	300	335	371	1	1	1	486	0.82
SMAJ350A	SMAJ350CA	DG	HG	350	391	432	1	1	1	567	0.71
SMAJ400A	SMAJ400CA	DK	HK	400	447	494	1	1	1	648	0.62
SMAJ440A	SMAJ440CA	DM	HM	440	492	543	1	1	1	713	0.56

Rating and Characteristic Curves

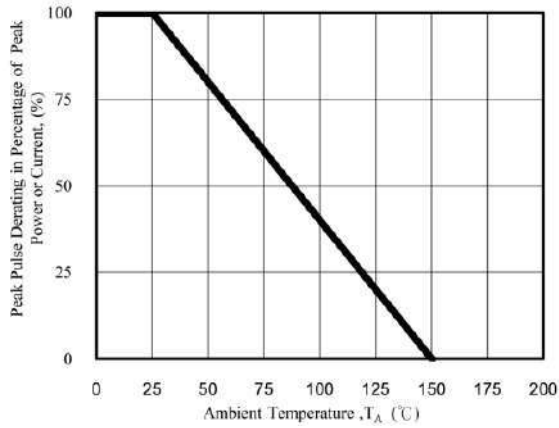


Fig. 1 Pulse Derating Curve

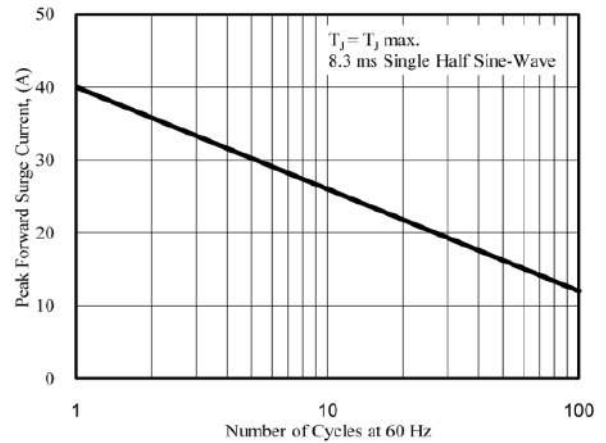


Fig. 2 Max. Non-Repetitive Surge Current

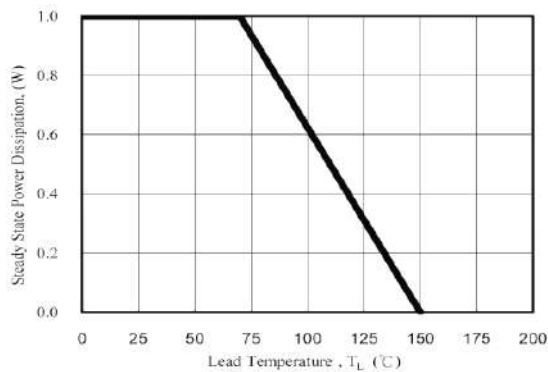


Fig. 3 Steady State Power Derating Curve

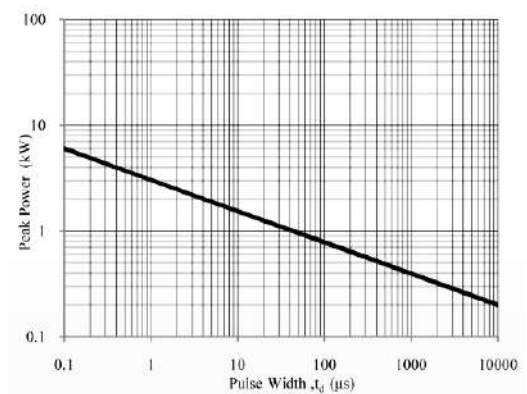


Fig. 4 Peak Pulse Power Rating Curve

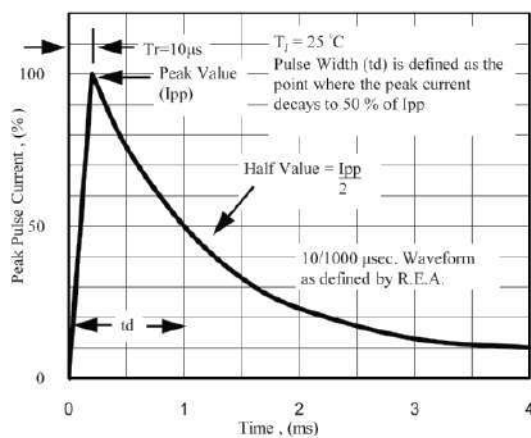


Fig. 5 Pulse Waveform

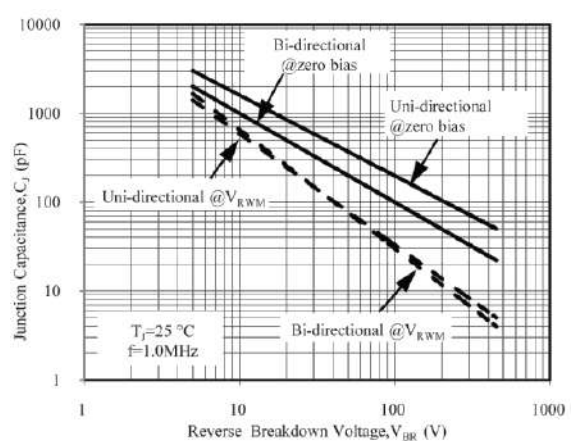
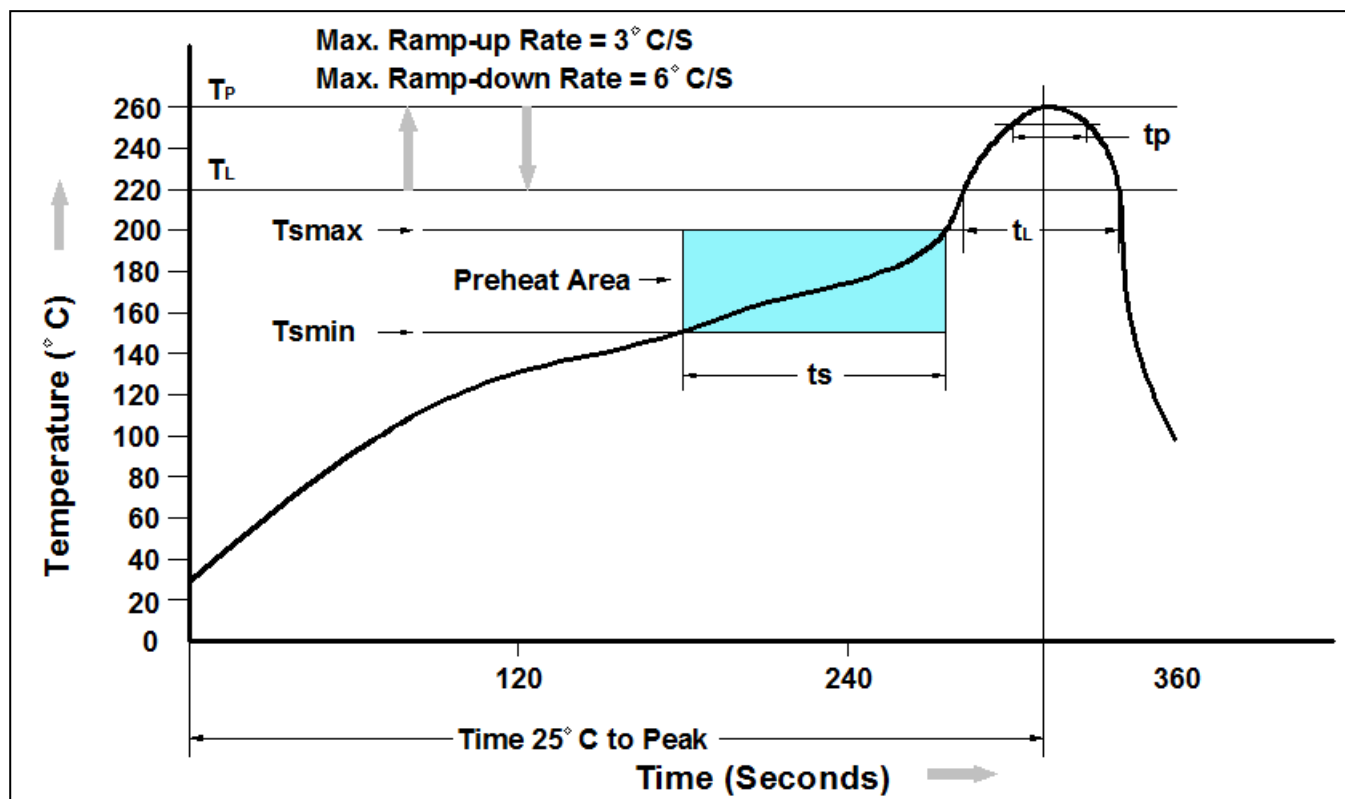


Fig. 6 Typical Junction Capacitance

Recommend IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

Ordering Information

Part Number	Description	Quantity
SMAJ5.0A~ SMAJ440CA	SMA / TR	5000 pcs

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