

Surface Mount TVS Diode

SMAJ5.0--SMAJ440CA

- * 400 Watt Peak Power
- * SMA Package

Maximum Ratings And Thermal Characteristics

Rating at 25°C ambient temperature unless otherwise specified

Parameter	Symbol	Value	Units
Peak Power Dissipation (Note 1.) @ $T_L = 25^\circ\text{C}$, Pulse Width = 1 ms	P_{PK}	400	W
Forward Surge Current (Note 2.) @ $T_A = 25^\circ\text{C}$	I_{FSM}	100	A
Power Dissipation On Infinite Heatsink, @ $T_A = 50^\circ\text{C}$	$P_{M(AV)}$	5.0	W
Thermal Resistance Junction To Ambient Air (Note 3.)	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Thermal Resistance Junction To Leads	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to 150	$^\circ\text{C}$

- 1) 10 X 1000 us, non-repetitive
- 2) 1/2 sine wave (or equivalent square wave), PW = 8.3 ms, duty cycle = 4 pulses per minute maximum
- 3) Mounted on minimum recommended pad layout

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UNI	BI	UNI	BI	off Voltage VR (Volts)	MIN	MAX	IT (mA)	Voltage VC @IPP (Volts)	Pulse Current IPP (A)	Leakage IR @ VR (A)
SMAJ5.0A	SMAJ5.0CA	HE	TE	5.00	6.40	7.00	10	9.2	43.5	3 1
SMAJ6.0A	SMAJ6.0CA	HG	TG	6.00	6.67	7.37	10	10.3	38.8	3 1
SMAJ6.5A	SMAJ6.5CA	HK	TK	6.50	7.22	7.98	10	11.2	35.7	3 1
SMAJ7.0A	SMAJ7.0CA	HM	TM	7.00	7.78	8.60	10	12.0	33.3	3 1
SMAJ7.5A	SMAJ7.5CA	HP	TP	7.50	8.33	9.21	1	12.9	31.0	3 1
SMAJ8.0A	SMAJ8.0CA	HR	TR	8.00	8.89	9.83	1	13.6	29.4	3 1
SMAJ8.5A	SMAJ8.5CA	HT	TT	8.50	9.44	10.40	1	14.4	27.8	3 1
SMAJ9.0A	SMAJ9.0CA	HV	TV	9.00	10.00	11.10	1	15.4	26.0	3 1
SMAJ10A	SMAJ10CA	HX	TX	10.50	11.10	12.30	1	17.0	23.5	1
SMAJ11A	SMAJ11CA	HZ	TZ	11.55	12.20	13.50	1	18.2	22.0	1
SMAJ12A	SMAJ12CA	IE	UE	12.60	13.30	14.70	1	19.9	20.1	1
SMAJ13A	SMAJ13CA	IG	UG	13.65	14.40	15.90	1	21.5	18.6	1
SMAJ14A	SMAJ14CA	IK	UK	14.70	15.60	17.20	1	23.2	17.2	1
SMAJ15A	SMAJ15CA	IM	UM	15.75	16.70	18.50	1	24.4	16.4	1
SMAJ16A	SMAJ16CA	IP	UP	16.80	17.80	19.70	1	26.0	15.4	1
SMAJ17A	SMAJ17CA	IR	UR	17.85	18.90	20.90	1	27.6	14.5	1
SMAJ18A	SMAJ18CA	IT	UT	18.90	20.00	22.10	1	29.2	13.7	1
SMAJ20A	SMAJ20CA	IV	UV	21.00	22.20	24.50	1	32.4	12.3	1
SMAJ22A	SMAJ22CA	IX	UX	23.10	24.40	26.90	1	35.5	11.3	1
SMAJ24A	SMAJ24CA	IZ	UZ	25.20	26.70	29.50	1	38.9	10.3	1
SMAJ26A	SMAJ26CA	JE	VE	27.30	28.90	31.90	1	42.1	9.5	1
SMAJ28A	SMAJ28CA	JG	VG	29.40	31.10	34.40	1	45.4	8.8	1
SMAJ30A	SMAJ30CA	JK	VK	31.50	33.30	36.80	1	48.4	8.3	1
SMAJ33A	SMAJ33CA	JM	VM	34.65	36.70	40.60	1	53.3	7.	1
SMAJ36A	SMAJ36CA	JP	VP	37.80	40.00	44.20	1	58.1	6.9	1
SMAJ40A	SMAJ40CA	JR	VR	42.00	44.40	49.10	1	64.5	6.2	1
SMAJ43A	SMAJ43CA	JT	VT	45.15	47.80	52.80	1	69.4	5.8	1
SMAJ45A	SMAJ45CA	JV	VV	47.25	50.00	55.30	1	72.7	5.5	1
SMAJ48A	SMAJ48CA	JX	VX	50.40	53.30	58.90	1	77.4	5.2	1



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SMAJ51A	SMAJ51CA	JZ	VZ	53.55	56.70	62.70	1	82.4	4.9	1
SMAJ54A	SMAJ54CA	RE	WE	56.70	60.00	66.30	1	87.1	4.6	1
SMAJ58A	SMAJ58CA	RG	WG	60.90	64.40	71.20	1	93.6	4.3	1
SMAJ60A	SMAJ60CA	RK	WK	63.00	66.70	73.70	1	96.8	4.1	1
SMAJ64A	SMAJ64CA	RM	WM	67.20	71.10	78.60	1	103.0	3.9	1
SMAJ70A	SMAJ70CA	RP	WP	73.50	77.80	86.00	1	113.0	3.5	1
SMAJ75A	SMAJ75CA	RR	WR	78.75	83.30	92.10	1	121.0	3.3	1
SMAJ78A	SMAJ78CA	RT	WT	81.90	86.70	95.80	1	126.0	3.2	1
SMAJ85A	SMAJ85CA	RV	WV	89.25	94.40	104.00	1	137.0	2.9	1
SMAJ90A	SMAJ90CA	RX	WX	94.50	100.00	111.00	1	146.0	2.7	1
SMAJ100A	SMAJ100CA	RZ	WZ	105.00	111.00	123.00	1	162.0	2.5	1
SMAJ110A	SMAJ110CA	SE	XE	115.50	122.00	135.00	1	177.0	2.3	1
SMAJ120A	SMAJ120CA	SG	XG	126.00	133.00	147.00	1	193.0	2.1	1
SMAJ130A	SMAJ130CA	SK	XK	136.50	144.00	159.00	1	209.0	1.9	1
SMAJ150A	SMAJ150CA	SM	XM	157.50	167.00	185.00	1	243.0	1.6	1
SMAJ160A	SMAJ160CA	SP	XP	168.00	178.00	197.00	1	259.0	1.5	1
SMAJ170A	SMAJ170CA	SR	XR	178.50	189.00	209.00	1	275.0	1.5	1
SMAJ180A	SMAJ180CA	ST	XT	189.00	201.00	222.00	1	292.0	1.4	1
SMAJ190A	SMAJ190CA	SV	XV	199.50	211.00	233.00	1	306.0	1.3	1
SMAJ200A	SMAJ200CA	SX	XX	210.00	224.00	247.00	1	324.0	1.2	1
SMAJ210A	SMAJ210CA	SZ	XZ	220.50	233.00	258.00	1	324.0	1.1	1
SMAJ220A	SMAJ220CA	ZE	YE	231.00	246.00	272.00	1	356.0	1.1	1
SMAJ250A	SMAJ250CA	ZG	YG	262.50	279.00	309.00	1	405.0	1.0	1
SMAJ300A	SMAJ300CA	ZK	YK	315.00	335.00	371.00	1	486.0	0.8	1
SMAJ350A	SMAJ350CA	ZM	YM	367.50	391.00	432.00	1	567.0	0.7	1
SMAJ400A	SMAJ400CA	ZP	YP	420.00	447.00	494.00	1	648.0	0.6	1
SMAJ440A	SMAJ440CA	ZR	YR	462.00	492.00	543.00	1	713.0	0.6	1

1. A transient suppressor is normally selected according to the working peak reverse voltage (VRWM), which should be equal to or greater than the DC or continuous peak operating voltage level.
2. VBR measured at pulse test current IT at an ambient temperature of 25°C.
3. Surge current waveform per Figure 1 and derate per Figure

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Typical Characteristics

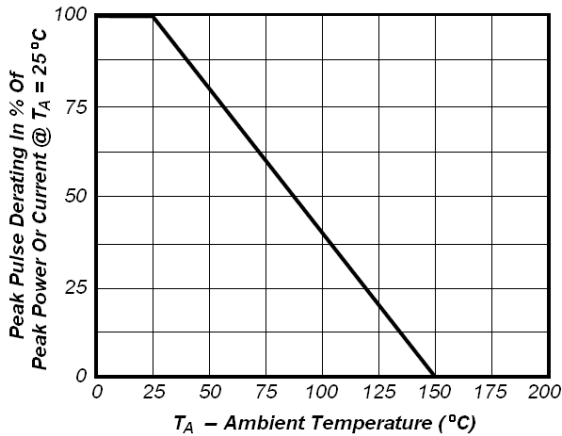


Fig1. Pulse Dearing Curve

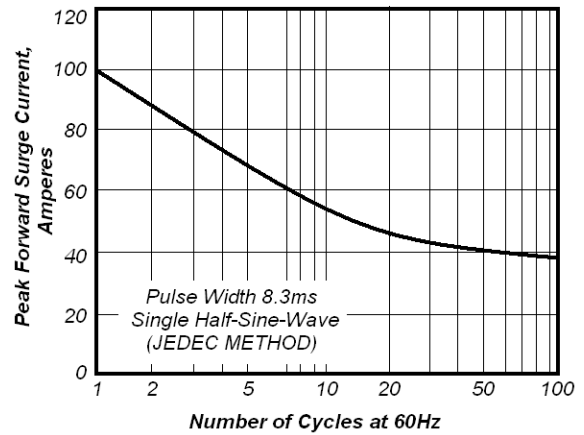


Fig2. Maximum Non-Repetitive Peak Forward Surge Current

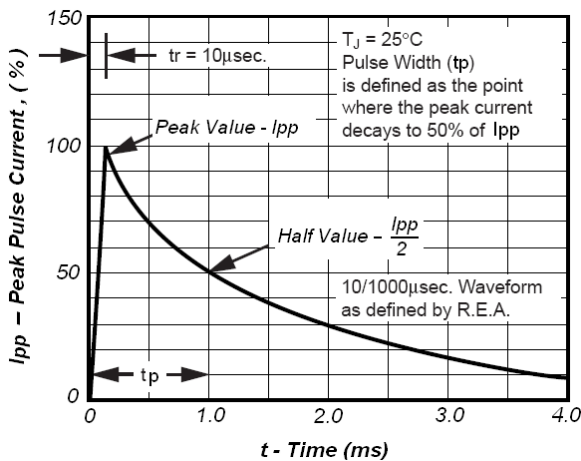


Fig3. Pulse Waveform

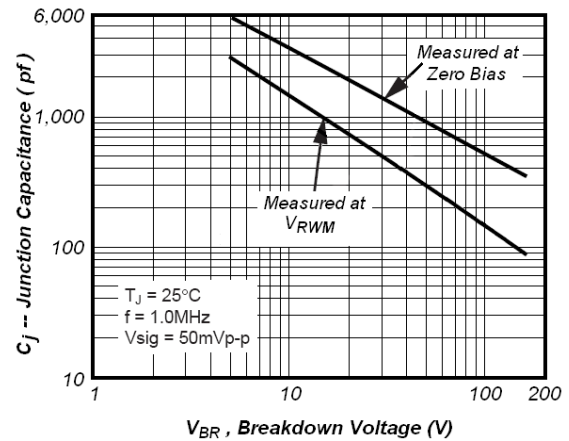


Fig4. Typical Junction Capacitance

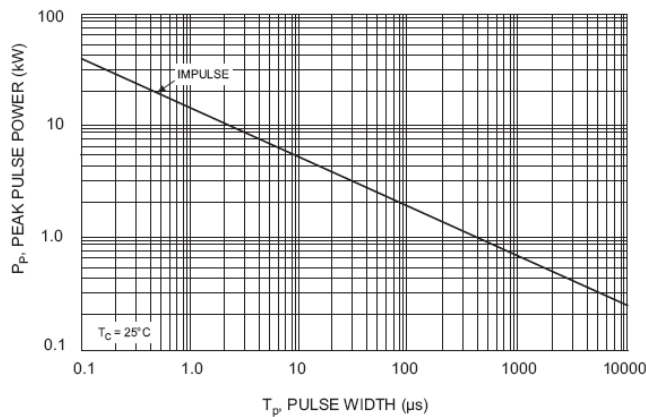


Fig5. Peak Pulse Power Rating curve

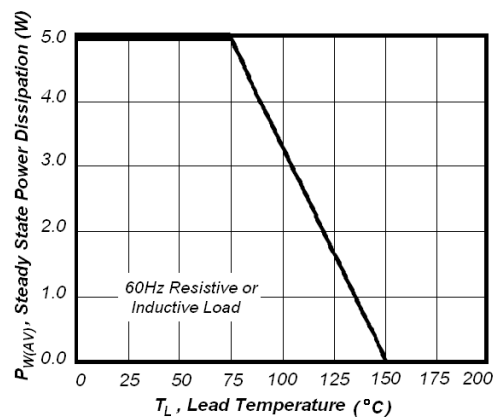


Fig6. Steady State Power Derating Curv