



SMAJ SERIES

Surface Mount Transient Voltage Suppressor

Features

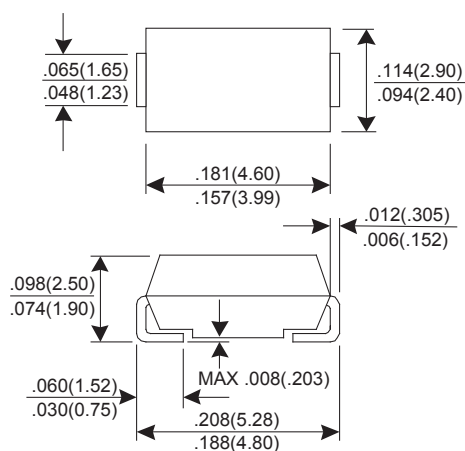
- ★ Glass passivated chip
- ★ Low profile package
- ★ 400W peak pulse power capability at 10/1000 us waveform, repetition rate (duty cycle): 0.01%
- ★ Low leakage
- ★ Excellent clamping capability
- ★ Fast response time
- ★ RoHS compliant

Mechanical Data

- ★ Case: SMA/DO-214AC, Molded plastic has UL flammability classification 94V-0
- ★ Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- ★ Polarity: Cathode band denotes uni-directional device except bi-directional device
- ★ Weight: 0.064 gram

Working Voltage 5.0 to 440 V
Power Dissipation 400 Watts

SMA/DO-214AC



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

T_A= 25°C unless otherwise noted

PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation at T _A =25°C by 10/1000us waveform fig.1 (Note 1,2)	PPPM	400	Watts
Peak Forward Surge Current, 8.3ms single Half sine-wave super imposed on rated load (Note 3)	I _{FSM}	40	A
Steady State Power Dissipation at T _L =75°C	P _D	1.0	Watts
Maximum Instantaneous forward voltage at 25A for unidirectional devices only (Note 4)	V _F	3.5 / 5.0	V
Typical Thermal Resistance Junction to Ambient	R _{θJA}	120	°C/W
Typical Thermal Resistance Junction to Lead	R _{θJL}	30	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

NOTES : (1) Non-repetitive current pulse, per fig. 3 and derated above T_A=25°C per fig. 2.
(2) Mounted on 0.2"x0.2" (5.0mmx5.0mm) copper pads to each terminal
(3) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle= 4 pulses per minute maximum
(4) V_F<3.5V for V_{BR}≤200V and V_F<5.0V for V_{BR}≥201V

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Electrical Characteristics(T_A=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R @V _{RWM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} (A)	Maximum Clamping Voltage V _C @I _{PP} (V)
		Uni	Bi	Min(V)	Max(V)	IT(mA)				
SMAJ5.0A	SMAJ5.0CA	AE	WE	6.40	7.00	10	800	5.0	43.48	9.2
SMAJ6.0A	SMAJ6.0CA	AG	WG	6.67	7.37	10	800	6.0	38.83	10.3
SMAJ6.5A	SMAJ6.5CA	AK	WK	7.22	7.98	10	500	6.5	35.71	11.2
SMAJ7.0A	SMAJ7.0CA	AM	WM	7.78	8.60	10	200	7.0	33.33	12.0
SMAJ7.5A	SMAJ7.5CA	AP	WP	8.33	9.21	1	100	7.5	31.01	12.9
SMAJ8.0A	SMAJ8.0CA	AR	WR	8.89	9.83	1	50	8.0	29.41	13.6
SMAJ8.5A	SMAJ8.5CA	AT	WT	9.44	10.40	1	10	8.5	27.78	14.4
SMAJ9.0A	SMAJ9.0CA	AV	WV	10.00	11.10	1	5	9.0	25.97	15.4
SMAJ10A	SMAJ10CA	AX	WX	11.10	12.30	1	5	10.0	23.53	17.0
SMAJ11A	SMAJ11CA	AZ	WZ	12.20	13.50	1	1	11.0	21.98	18.2
SMAJ12A	SMAJ12CA	BE	XE	13.30	14.70	1	1	12.0	20.10	19.9
SMAJ13A	SMAJ13CA	BG	XG	14.40	15.90	1	1	13.0	18.60	21.5
SMAJ14A	SMAJ14CA	BK	XK	15.60	17.20	1	1	14.0	17.24	23.2
SMAJ15A	SMAJ15CA	BM	XM	16.70	18.50	1	1	15.0	16.39	24.4
SMAJ16A	SMAJ16CA	BP	XP	17.80	19.70	1	1	16.0	15.38	26.0
SMAJ17A	SMAJ17CA	BR	XR	18.90	20.90	1	1	17.0	14.49	27.6
SMAJ18A	SMAJ18CA	BT	XT	20.00	22.10	1	1	18.0	13.70	29.2
SMAJ20A	SMAJ20CA	BV	XV	22.20	24.50	1	1	20.0	12.35	32.4
SMAJ22A	SMAJ22CA	BX	XX	24.40	26.90	1	1	22.0	11.27	35.5
SMAJ24A	SMAJ24CA	BZ	XZ	26.70	29.50	1	1	24.0	10.28	38.9
SMAJ26A	SMAJ26CA	CE	YE	28.90	31.90	1	1	26.0	9.50	42.1
SMAJ28A	SMAJ28CA	CG	YG	31.10	34.40	1	1	28.0	8.81	45.4
SMAJ30A	SMAJ30CA	CK	YK	33.30	36.80	1	1	30.0	8.26	48.4
SMAJ33A	SMAJ33CA	CM	YM	36.70	40.60	1	1	33.0	7.50	53.3
SMAJ36A	SMAJ36CA	CP	YP	40.00	44.20	1	1	36.0	6.88	58.1
SMAJ40A	SMAJ40CA	CR	YR	44.40	49.10	1	1	40.0	6.20	64.5
SMAJ43A	SMAJ43CA	CT	YT	47.80	52.80	1	1	43.0	5.76	69.4
SMAJ45A	SMAJ45CA	CV	YV	50.00	55.30	1	1	45.0	5.50	72.7
SMAJ48A	SMAJ48CA	CX	YX	53.30	58.90	1	1	48.0	5.17	77.4
SMAJ51A	SMAJ51CA	CZ	YZ	56.70	62.70	1	1	51.0	4.85	82.4
SMAJ54A	SMAJ54CA	RE	ZE	60.00	66.30	1	1	54.0	4.59	87.1
SMAJ58A	SMAJ58CA	RG	ZG	64.40	71.20	1	1	58.0	4.27	93.6
SMAJ60A	SMAJ60CA	RK	ZK	66.70	73.70	1	1	60.0	4.13	96.8
SMAJ64A	SMAJ64CA	RM	ZM	71.10	78.60	1	1	64.0	3.88	103.0
SMAJ70A	SMAJ70CA	RP	ZP	77.80	86.00	1	1	70.0	3.54	113.0
SMAJ75A	SMAJ75CA	RR	ZR	83.30	92.10	1	1	75.0	3.31	121.0
SMAJ78A	SMAJ78CA	RT	ZT	86.70	95.80	1	1	78.0	3.17	126.0
SMAJ85A	SMAJ85CA	RV	ZV	94.40	104.00	1	1	85.0	2.92	137.0
SMAJ90A	SMAJ90CA	RX	ZX	100.00	111.00	1	1	90.0	2.74	146.0
SMAJ100A	SMAJ100CA	RZ	ZZ	111.00	123.00	1	1	100.0	2.47	162.0
SMAJ110A	SMAJ110CA	SE	VE	122.00	135.00	1	1	110.0	2.26	177.0
SMAJ120A	SMAJ120CA	SG	VG	133.00	147.00	1	1	120.0	2.07	193.0
SMAJ130A	SMAJ130CA	SK	VK	144.00	159.00	1	1	130.0	1.91	209.0
SMAJ150A	SMAJ150CA	SM	VM	167.00	185.00	1	1	150.0	1.65	243.0
SMAJ160A	SMAJ160CA	SP	VP	178.00	197.00	1	1	160.0	1.54	259.0
SMAJ170A	SMAJ170CA	SR	VR	189.00	209.00	1	1	170.0	1.45	275.0
SMAJ180A	SMAJ180CA	ST	VT	200.00	220.00	1	1	180.0	1.37	291.6
SMAJ200A	SMAJ200CA	SW	VW	224.00	247.00	1	1	200.0	1.23	324.0
SMAJ220A	SMAJ220CA	SX	VX	246.00	272.00	1	1	220.0	1.12	356.0
SMAJ250A	SMAJ250CA	SZ	VZ	279.00	309.00	1	1	250.0	0.99	405.0
SMAJ300A	SMAJ300CA	DE	HE	335.00	371.00	1	1	300.0	0.82	486.0
SMAJ350A	SMAJ350CA	DG	HG	391.00	432.00	1	1	350.0	0.71	567.0
SMAJ400A	SMAJ400CA	DK	HK	447.00	494.00	1	1	400.0	0.62	648.0
SMAJ440A	SMAJ440CA	DM	HM	492.00	543.00	1	1	440.0	0.56	713.0

Suffix C: Bi-Directional

For the bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is doubled.

RATINGS AND CHARACTERISTIC CURVES SMAJ SERIES

FIG.1 - PULSE RATING CURVE

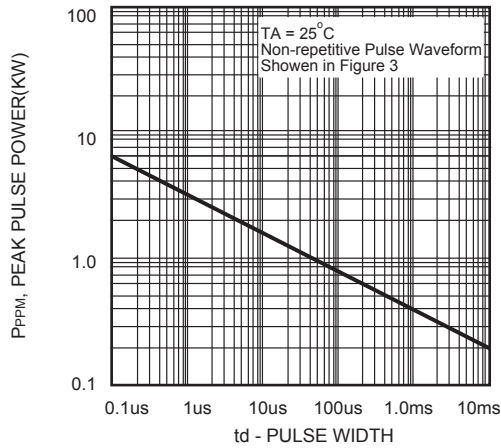


FIG.2 - PULSE DERATING CURVE

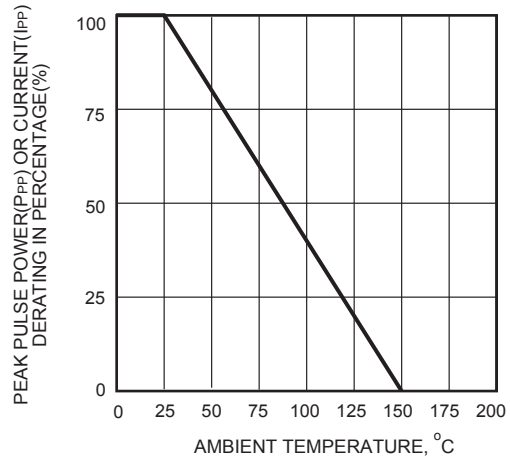


FIG.3 - PULSE WAVEFORM

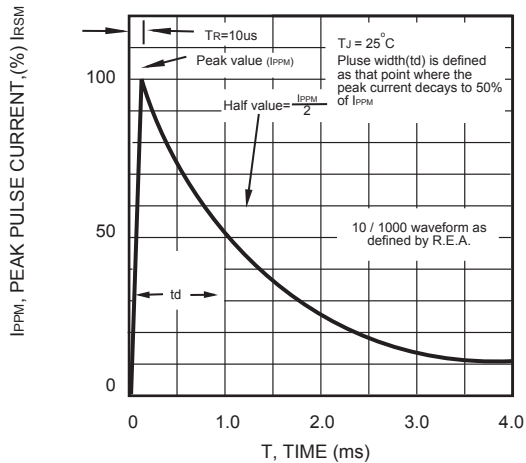


FIG.4 - TYPICAL JUNCTION CAPACITANCE

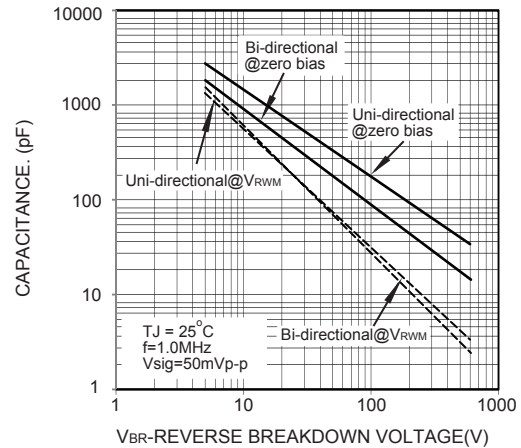


FIG.5 - STEADY STATE POWER DERATING CURVE

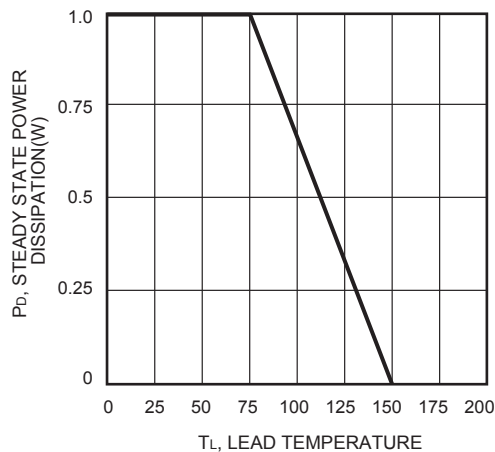


FIG.6 - MAXIMUM NON-REPETITIVE SURGE CURRENT

