



YENYO

SMAJ SERIES

Surface Mount Transient Voltage Suppressor

Features

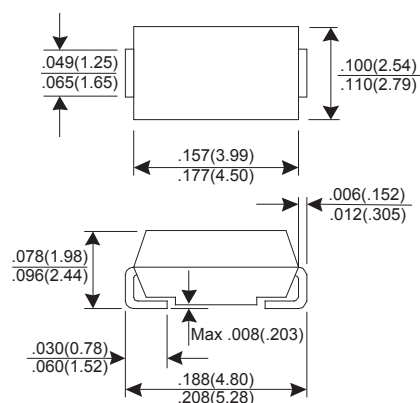
- ★ RoHS compliant and halogen-free
- ★ Reliable low cost construction utilizing molded plastic technique
- ★ Both bi-directional and uni-directional devices are available
- ★ Typical IR less than 1uA above 10V
- ★ Fast response time: typically less than 1.0 ps form 0 Volts to V_{BR} min

Mechanical Data

- ★ Case: SMA/DO-214AC, Molded plastic has UL flammability classification 94V-0
- ★ Polarity: by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- ★ Weight: 0.064 gram

Stand-off Voltage 5.0 to 440 V
Power Dissipation 400 Watts

SMA/DO-214AC



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

T_A= 25°C unless otherwise noted

PARAMTER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation at T _A =25°C by 10/1000us waveform fig.1 (Note 1,2)	PPPM	Minimum 400	Watts
Peak Forward Surge Current, 8.3ms single Half sine-wave super imposed on rated load (Note 3)	IFSM	40	A
Steady State Power Dissipation at T _A =50°C	PM(AV)	3.3	Watts
Maximum Instantaneous forward voltage at 25A for unidirectional devices only (Note 4)	V _F	3.5 / 6.5	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) 8.3ms single half-sine wave duty cycle= 4pulses maximum per minute(unidirectional units only)
 (4) V_F<3.5V for V_{BR} ≤ 200V and V_F<6.5V for V_{BR} ≥ 201V

SMAJ SERIES

Part No.	Absolute Maximum Rating (Ta=25° C)					Electrical Characteristics (Ta=25° C)				
	VRWM (V)	VBR Min (V)	VBR Max (V)	IT (mA)	IFSM (A) @8.3mS	Max Vc		IR @VRWM (uA)	Marking Code	
						(V)	Ipp(A)		UNI	BI
SMAJ5.0(c)	5.00	6.40	7.82	10	40	9.6	41.6	800	AD	WD
SMAJ5.0(c)A	5.00	6.40	7.07	10	40	9.2	43.5	800	AE	WE
SMAJ6.0(c)	6.00	6.67	8.15	10	40	11.4	35.1	800	AF	WF
SMAJ6.0(c)A	6.00	6.67	7.37	10	40	10.3	38.0	800	AG	WG
SMAJ6.5(c)	6.50	7.22	8.82	10	40	12.3	32.5	500	AH	WH
SMAJ6.5(c)A	6.50	7.22	7.98	10	40	11.2	35.7	500	AK	WK
SMAJ7.0(c)	7.00	7.78	9.51	10	40	13.3	30.1	200	AL	WL
SMAJ7.0(c)A	7.00	7.78	8.60	10	40	12.0	33.3	200	AM	WM
SMAJ7.5(c)	7.50	8.33	10.2	1	40	14.3	28.0	100	AN	WN
SMAJ7.5(c)A	7.50	8.33	9.21	1	40	12.9	31.0	100	AP	WP
SMAJ8.0(c)	8.00	8.89	10.9	1	40	15.0	26.5	50	AQ	WQ
SMAJ8.0(c)A	8.00	8.89	9.83	1	40	13.6	29.4	50	AR	WR
SMAJ8.5(c)	8.50	9.44	11.5	1	40	15.9	25.1	20	AS	WS
SMAJ8.5(c)A	8.50	9.44	10.4	1	40	14.4	27.7	20	AT	WT
SMAJ9.0(c)	9.00	10.0	12.2	1	40	16.9	23.6	10	AU	WU
SMAJ9.0(c)A	9.00	10.0	11.1	1	40	15.4	26.0	10	AV	WV
SMAJ10(c)	10.00	11.1	13.6	1	40	18.8	21.1	5	AW	WW
SMAJ10(c)A	10.00	11.1	12.3	1	40	17.0	23.5	5	AX	WX
SMAJ11(c)	11.00	12.2	14.9	1	40	20.1	20.0	1	AY	WY
SMAJ11(c)A	11.00	12.2	13.5	1	40	18.2	22.0	1	AZ	WZ
SMAJ12(c)	12.00	13.3	16.3	1	40	22.0	18.1	1	BD	XD
SMAJ12(c)A	12.00	13.3	14.7	1	40	19.9	20.1	1	BE	XE
SMAJ13(c)	13.00	14.4	17.6	1	40	23.8	16.8	1	BF	XF
SMAJ13(c)A	13.00	14.4	15.9	1	40	21.5	18.6	1	BG	XG
SMAJ14(c)	14.00	15.6	19.1	1	40	25.8	15.5	1	BH	XH
SMAJ14(c)A	14.00	15.6	17.2	1	40	23.2	17.2	1	BK	XK
SMAJ15(c)	15.00	16.7	20.4	1	40	26.9	14.8	1	BL	XL
SMAJ15(c)A	15.00	16.7	18.5	1	40	24.4	16.4	1	BM	XM
SMAJ16(c)	16.00	17.8	21.8	1	40	28.8	13.8	1	BN	XN
SMAJ16(c)A	16.00	17.8	19.7	1	40	26.0	15.3	1	BP	XP
SMAJ17(c)	17.00	18.9	23.1	1	40	30.5	13.1	1	BQ	XQ
SMAJ17(c)A	17.00	18.9	20.9	1	40	27.6	14.5	1	BR	XR
SMAJ18(c)	18.00	20.0	24.4	1	40	32.2	12.4	1	BS	XS
SMAJ18(c)A	18.00	20.0	22.1	1	40	29.2	13.7	1	BT	XT
SMAJ20(c)	20.00	22.2	27.1	1	40	35.8	11.1	1	BU	XU
SMAJ20(c)A	20.00	22.2	24.5	1	40	32.4	12.3	1	BV	XV
SMAJ22(c)	22.00	24.4	29.8	1	40	39.4	10.0	1	BW	XW
SMAJ22(c)A	22.00	24.4	26.9	1	40	35.5	11.2	1	BX	XX
SMAJ24(c)	24.00	26.7	32.6	1	40	43.0	9.3	1	BY	XY
SMAJ24(c)A	24.00	26.7	29.5	1	40	38.9	10.3	1	BZ	XZ
SMAJ26(c)	26.00	28.9	35.3	1	40	46.6	8.6	1	CD	YD
SMAJ26(c)A	26.00	28.9	31.9	1	40	42.1	9.5	1	CE	YE
SMAJ28(c)	28.00	31.1	38.0	1	40	50.0	8.0	1	CF	YF
SMAJ28(c)A	28.00	31.1	34.4	1	40	45.4	8.8	1	CG	YG
SMAJ30(c)	30.00	33.3	40.7	1	40	53.5	7.5	1	CH	YH
SMAJ30(c)A	30.00	33.3	36.8	1	40	48.4	8.3	1	CK	YK
SMAJ33(c)	33.00	36.7	44.9	1	40	59.0	6.8	1	CL	YL
SMAJ33(c)A	33.00	36.7	40.6	1	40	53.3	7.5	1	CM	YM
SMAJ36(c)	36.00	40.0	48.9	1	40	64.3	6.2	1	CN	YN
SMAJ36(c)A	36.00	40.0	44.2	1	40	58.1	6.9	1	CP	YP
SMAJ40(c)	40.00	44.4	54.3	1	40	71.4	5.6	1	CQ	YQ
SMAJ40(c)A	40.00	44.4	49.1	1	40	64.5	6.2	1	CR	YR
SMAJ43(c)	43.00	47.8	58.4	1	40	76.7	5.2	1	CS	YS
SMAJ43(c)A	43.00	47.8	52.8	1	40	69.4	5.7	1	CT	YT
SMAJ45(c)	45.00	50.0	61.1	1	40	80.3	5.0	1	CU	YU
SMAJ45(c)A	45.00	50.0	55.3	1	40	72.7	5.5	1	CV	YV

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	VRWM (V)	VBR Min (V)	VBR Max (V)	IT (mA)	IFSM (A) @8.3ms	Max Vc		IR @VRWM (uA)	Marking Code	
						(V)	Ipp(A)		UNI	BI
SMAJ48(c)	48.00	53.3	65.1	1	40	85.5	4.7	1	CW	YW
SMAJ48(c)A	48.00	53.3	58.9	1	40	77.4	5.2	1	CX	YX
SMAJ51(c)	51.00	56.7	69.3	1	40	91.1	4.4	1	CY	YY
SMAJ51(c)A	51.00	56.7	62.7	1	40	82.4	4.9	1	CZ	YZ
SMAJ54(c)	54.00	60.0	73.3	1	40	96.3	4.2	1	RD	ZD
SMAJ54(c)A	54.00	60.0	66.3	1	40	87.1	4.6	1	RE	ZE
SMAJ58(c)	58.00	64.4	78.7	1	40	103.0	3.9	1	RF	ZF
SMAJ58(c)A	58.00	64.4	71.2	1	40	93.6	4.3	1	RG	ZG
SMAJ60(c)	60.00	66.7	81.5	1	40	107.0	3.7	1	RH	ZH
SMAJ60(c)A	60.00	66.7	73.7	1	40	96.8	4.1	1	RK	ZK
SMAJ64(c)	64.00	71.1	86.9	1	40	114.0	4.5	1	RL	ZL
SMAJ64(c)A	64.00	71.1	78.6	1	40	103.0	3.9	1	RM	ZM
SMAJ70(c)	70.00	77.8	95.1	1	40	125.0	3.2	1	RN	ZN
SMAJ70(c)A	70.00	77.8	86.0	1	40	113.0	3.5	1	RP	ZP
SMAJ75(c)	75.00	83.3	102	1	40	134.0	3.0	1	RQ	ZQ
SMAJ75(c)A	75.00	83.3	92.1	1	40	121.0	3.3	1	RR	ZR
SMAJ78(c)	78.00	86.7	106	1	40	139.0	2.9	1	RS	ZS
SMAJ78(c)A	78.00	86.7	95.8	1	40	126.0	3.2	1	RT	ZT
SMAJ85(c)	85.00	94.4	115	1	40	151.0	2.6	1	RU	ZU
SMAJ85(c)A	85.00	94.4	104	1	40	137.0	2.9	1	RV	ZV
SMAJ90(c)	90.00	100	122	1	40	160.0	2.5	1	RW	ZW
SMAJ90(c)A	90.00	100	111	1	40	146.0	2.7	1	RX	ZX
SMAJ100(c)	100.00	111	136	1	40	179.0	2.2	1	RY	ZY
SMAJ100(c)A	100.00	111	123	1	40	162.0	2.5	1	RZ	ZZ
SMAJ110(c)	110.00	122	149	1	40	196.0	2.0	1	SD	VD
SMAJ110(c)A	110.00	122	135	1	40	177.0	2.3	1	SE	VE
SMAJ120(c)	120.00	133	163	1	40	214.0	1.9	1	SF	VF
SMAJ120(c)A	120.00	133	147	1	40	193.0	2.0	1	SG	VG
SMAJ130(c)	130.00	144	176	1	40	231.0	1.7	1	SH	VH
SMAJ130(c)A	130.00	144	159	1	40	209.0	1.9	1	SK	VK
SMAJ150(c)	150.00	167	204	1	40	268.0	1.5	1	SL	VL
SMAJ150(c)A	150.00	167	185	1	40	243.0	1.6	1	SM	VM
SMAJ160(c)	160.00	178	218	1	40	287.0	1.4	1	SN	VN
SMAJ160(c)A	160.00	178	197	1	40	259.0	1.5	1	SP	VP
SMAJ170(c)	170.00	189	231	1	40	304.0	1.3	1	SQ	VQ
SMAJ170(c)A	170.00	189	209	1	40	275.0	1.4	1	SR	VR
SMAJ180(c)	180.00	201	222	1	40	292.0	1.4	1	SS	VS
SMAJ180(c)A	180.00	201	222	1	40	292.0	1.4	1	ST	VT
SMAJ200(c)	200.00	224	247	1	40	324.0	1.2	1	SU	VU
SMAJ200(c)A	200.00	224	247	1	40	324.0	1.2	1	SV	VV
SMAJ220(c)	220.00	246	272	1	40	356.0	1.1	1	SW	VW
SMAJ220(c)A	220.00	246	272	1	40	356.0	1.1	1	SX	VX
SMAJ250(c)	250.00	279	309	1	40	405.0	1.0	1	SY	VY
SMAJ250(c)A	250.00	279	309	1	40	405.0	1.0	1	SZ	VZ
SMAJ300(c)A	300.00	335	371	1	40	486.0	0.8	1	TE	UE
SMAJ350(c)A	350.00	391	432	1	40	567.0	0.7	1	TG	UG
SMAJ400(c)A	400.00	447	494	1	40	648.0	0.6	1	TK	UK
SMAJ440(c)A	440.00	492	543	1	40	713.0	0.6	1	TM	UM

Suffix A: 5%

Suffix C: Bi-Directional

For the bidirection SMAJ5.0CA, the maximum VBR is 7.25V.

For the bidirection typ having Vrrm of 10 volts and less, the Ir limit is doubled.

Certified RoHS Compliant
UL File # E353409

RATINGS AND CHARACTERISTIC CURVES SMAJ SERIES

FIG.1 - PULSE RATING CURVE

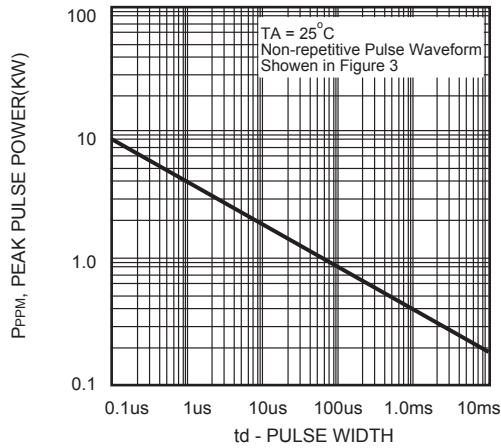


FIG.2 - PULSE DERATING CURVE

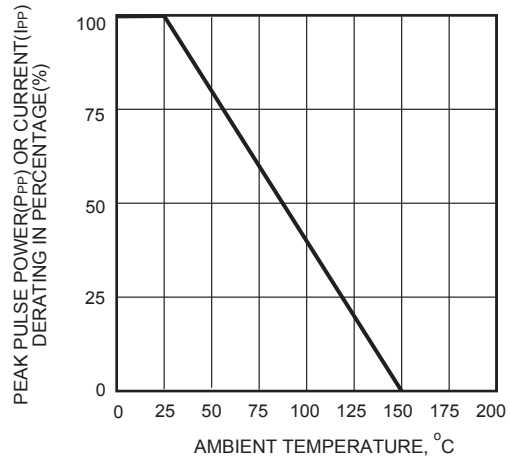


FIG.3 - PULSE WAVEFORM

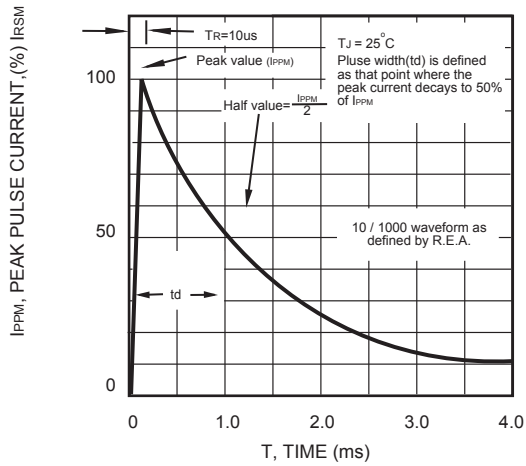


FIG.4 - TYPICAL JUNCTION CAPACITANCE

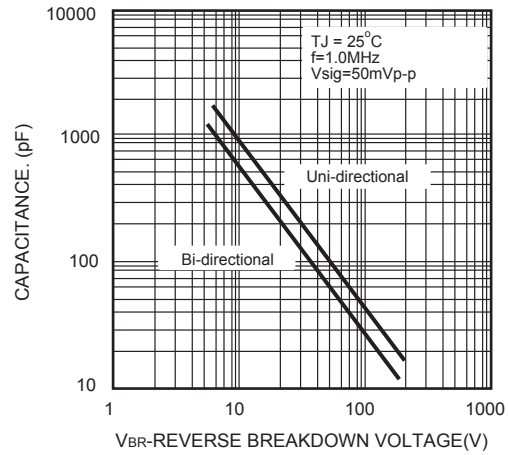


FIG.5 - STEADY STATE POWER DERATING CURVE

