YENYO

SMAJ SERIES

Surface Mount Transient Voltage Suppressor

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

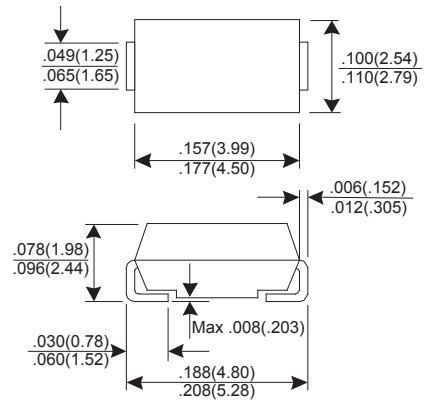
Features

- ✶ 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

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)	P_{PPM}	Minimum 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_A=50°C	$P_{M(AV)}$	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	$R_{\theta JA}$	120	°C/W
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	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 TA=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 $V_{BR} \leqslant$ 200V and V_F<6.5V for $V_{BR} \geqslant$ 201V

Certified RoHS Compliant
UL File # E353409

SMAJ SERIES

Part No.	Absolute Maximum Rating (Ta=25° C)					Electrical Characteristics (Ta=25° C)				
	VRWM	VBR Min	VBR Max	IT	IFSM	Max Vc		IR @VRWM	Marking Code	
	(V)	(V)	(V)	(mA)	(A) @8.3mS	(V)	Ipp(A)	(uA)	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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Part No.	Absolute Maximum Rating (Ta=25° C)					Electrical Characteristics (Ta=25° C)				
	VRWM	VBR Min	VBR Max	IT	IFSM	Max Vc		IR @VRWM	Marking Code	
	(V)	(V)	(V)	(mA)	(A) @8.3mS	(V)	Ipp(A)	(uA)	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 Vrwm 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

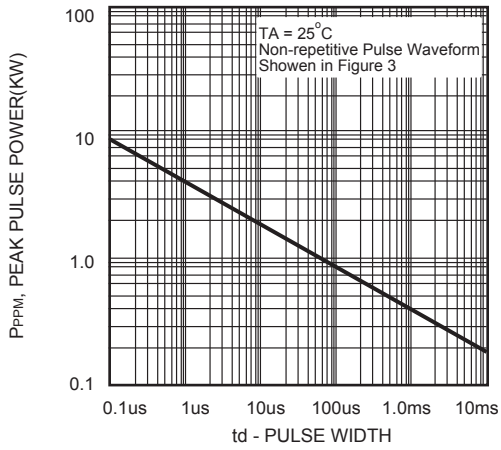

FIG.2 - PULSE DERATING CURVE

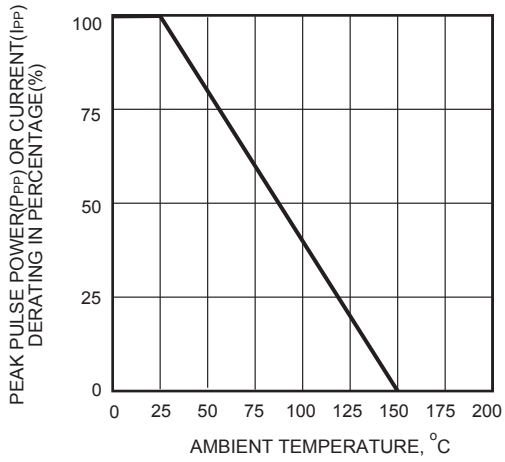

FIG.3 - PULSE WAVEFORM

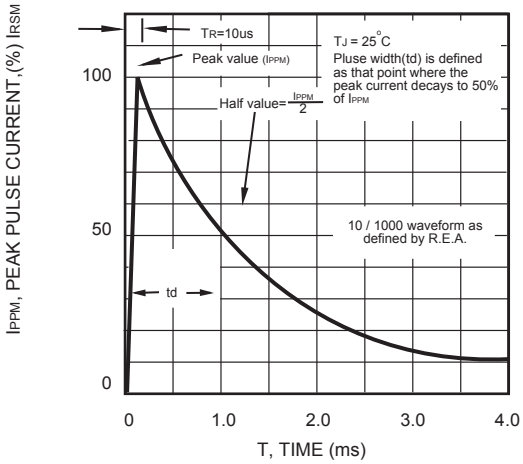

FIG.4 - TYPICAL JUNCTION CAPACITANCE

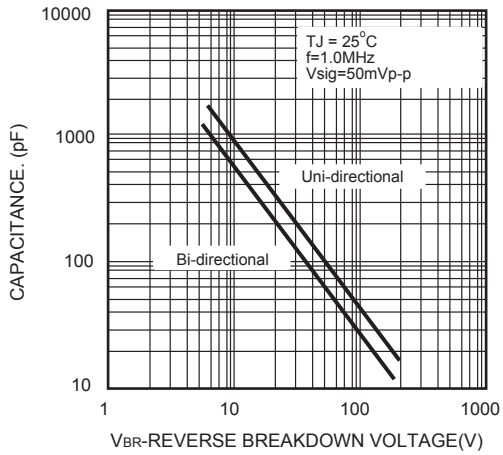

FIG.5 - STEADY STATE POWER
DERATING CURVE