

SMA

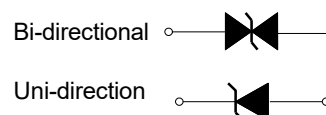


### Features

- P<sub>PP</sub> 400W
- V<sub>RWM</sub> 5.0V- 440V
- Glass passivated chip

### Applications

- Clamping Voltage



### Limiting values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P <sub>PPM</sub>	W	with a 10/1000us waveform	400
Peak pulse current (1)	I <sub>PPM</sub>	A	with a 10/1000us waveform	See Next Table
Power dissipation	P <sub>D</sub>	W	On infinite heat sink at T <sub>L</sub> =75°C	1.0
Peak forward surge current(2)	I <sub>FSM</sub>	A	8.3 ms single half sine-wave unidirectional only	40
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	°C		-55 to +150

### Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (3)	V <sub>F</sub>	V	at 25A for unidirectional only	3.5/5.0
Thermal resistance	R <sub>θJL</sub>	°C/W	junction to lead	30
	R <sub>θJA</sub>	°C/W	junction to ambient, L <sub>Lead</sub> = 10 mm	120

### Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub>= 25°C per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal
- (3) V<sub>F</sub><3.5V for devices of V<sub>BR</sub><200V and V<sub>F</sub><5.0V for devices of V<sub>BR</sub>>201V

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Number UNI	Code	Number BI	Code	Breakdown Voltage $V_{BR}@I_T$			Reverse Leakage $I_R^{(3)}$ ( $\mu\text{A}$ ) $I_R$ @ $V_{RWM}$	$V_{RWM}$ Working Peak Reverse Voltage $V_{RWM}$ (V)	Reverse Surge Current IPP (A)	Clamping Voltage $V_c$ @ $I_{PP}$ (V)
				Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMAJ5.0A	AE	SMAJ5.0CA	WE	6.40	7.07	10	800	5.0	43.5	9.2
SMAJ6.0A	AG	SMAJ6.0CA	WG	6.67	7.37	10	800	6.0	38.8	10.3
SMAJ6.5A	AK	SMAJ6.5CA	WK	7.22	7.98	10	500	6.5	35.7	11.2
SMAJ7.0A	AM	SMAJ7.0CA	WM	7.78	8.60	10	200	7.0	33.3	12.0
SMAJ7.5A	AP	SMAJ7.5CA	WP	8.33	9.21	1.0	100	7.5	31.0	12.9
SMAJ8.0A	AR	SMAJ8.0CA	WR	8.89	9.83	1.0	50	8.0	29.4	13.6
SMAJ8.5A	AT	SMAJ8.5CA	WT	9.44	10.4	1.0	10	8.5	27.8	14.4
SMAJ9.0A	AV	SMAJ9.0CA	WV	10.0	11.1	1.0	5.0	9.0	26.0	15.4
SMAJ10A	AX	SMAJ10CA	WX	11.1	12.3	1.0	5.0	10.0	23.5	17.0
SMAJ11A	AZ	SMAJ11CA	WZ	12.2	13.5	1.0	5.0	11.0	22.0	18.2
SMAJ12A	BE	SMAJ12CA	XE	13.3	14.7	1.0	5.0	12.0	20.1	19.9
SMAJ13A	BG	SMAJ13CA	XG	14.4	15.9	1.0	5.0	13.0	18.6	21.5
SMAJ14A	BK	SMAJ14CA	XK	15.6	17.2	1.0	5.0	14.0	17.2	23.2
SMAJ15A	BM	SMAJ15CA	XM	16.7	18.5	1.0	5.0	15.0	16.4	24.4
SMAJ16A	BP	SMAJ16CA	XP	17.8	19.7	1.0	5.0	16.0	15.4	26.0
SMAJ17A	BR	SMAJ17CA	XR	18.9	20.9	1.0	5.0	17.0	14.5	27.6
SMAJ18A	BT	SMAJ18CA	XT	20.0	22.1	1.0	5.0	18.0	13.7	29.2
SMAJ20A	BV	SMAJ20CA	XV	22.2	24.5	1.0	5.0	20.0	12.3	32.4
SMAJ22A	BX	SMAJ22CA	XX	24.4	26.9	1.0	5.0	22.0	11.3	35.5
SMAJ24A	BZ	SMAJ24CA	XZ	26.7	29.5	1.0	5.0	24.0	10.3	38.9
SMAJ26A	CE	SMAJ26CA	YE	28.9	31.9	1.0	5.0	26.0	9.5	42.1
SMAJ28A	CG	SMAJ28CA	YG	31.1	34.4	1.0	5.0	28.0	8.8	45.4
SMAJ30A	CK	SMAJ30CA	YK	33.3	36.8	1.0	5.0	30.0	8.3	48.4
SMAJ33A	CM	SMAJ33CA	YM	36.7	40.6	1.0	5.0	33.0	7.5	53.3
SMAJ36A	CP	SMAJ36CA	YP	40.0	44.2	1.0	5.0	36.0	6.9	58.1
SMAJ40A	CR	SMAJ40CA	YR	44.4	49.1	1.0	5.0	40.0	6.2	64.5
SMAJ43A	CT	SMAJ43CA	YT	47.8	52.8	1.0	5.0	43.0	5.8	69.4
SMAJ45A	CV	SMAJ45CA	YV	50.0	55.3	1.0	5.0	45.0	5.5	72.7
SMAJ48A	CX	SMAJ48CA	YX	53.3	58.9	1.0	5.0	48.0	5.2	77.4
SMAJ51A	CZ	SMAJ51CA	YZ	56.7	62.7	1.0	5.0	51.0	4.9	82.4
SMAJ54A	RE	SMAJ54CA	ZE	60.0	66.3	1.0	5.0	54.0	4.6	87.1
SMAJ58A	RG	SMAJ58CA	ZG	64.4	71.2	1.0	5.0	58.0	4.3	93.6
SMAJ60A	RK	SMAJ60CA	ZK	66.7	73.7	1.0	5.0	60.0	4.1	96.8
SMAJ64A	RM	SMAJ64CA	ZM	71.1	78.6	1.0	5.0	64.0	3.9	103.0
SMAJ70A	RP	SMAJ70CA	ZP	77.8	86.0	1.0	5.0	70.0	3.5	113.0
SMAJ75A	RR	SMAJ75CA	ZR	83.3	92.1	1.0	5.0	75.0	3.3	121.0
SMAJ78A	RT	SMAJ78CA	ZT	86.7	95.8	1.0	5.0	78.0	3.2	126.0
SMAJ85A	RV	SMAJ85CA	ZV	94.4	104	1.0	5.0	85.0	2.9	137.0

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Number UNI	Code	Number BI	Code	Breakdown Voltage $V_{BR}@I_T$			Reverse Leakage $I_R^{(3)}$ ( $\mu\text{A}$ ) $I_R @ V_{RWM}$	$V_{RWM}$ Working Peak Reverse Voltage $V_{RWM}$ (V)	Reverse Surge Current IPP (A)	Clamping Voltage $V_C$ @ IPP (V)
				Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMAJ90A	RX	SMAJ90CA	ZX	100	111	1.0	5.0	90.0	2.7	146.0
SMAJ100A	RZ	SMAJ100CA	ZZ	111	123	1.0	5.0	100.0	2.4	162.0
SMAJ110A	SE	SMAJ110CA	VE	122	135	1.0	5.0	110.0	2.2	177.0
SMAJ120A	SG	SMAJ120CA	VG	133	147	1.0	5.0	120.0	2.1	193.0
SMAJ130A	SK	SMAJ130CA	VK	144	159	1.0	5.0	130.0	1.9	209.0
SMAJ150A	SM	SMAJ150CA	VM	167	185	1.0	5.0	150.0	1.6	243.0
SMAJ160A	SP	SMAJ160CA	VP	178	197	1.0	5.0	160.0	1.5	259.0
SMAJ170A	SR	SMAJ170CA	VR	189	209	1.0	5.0	170.0	1.4	275.0
SMAJ180A	ST	SMAJ180CA	VT	200	220	1.0	5.0	180.0	1.3	291.6
SMAJ200A	SV	SMAJ200CA	VV	224	247	1.0	1.0	200.0	1.2	324.0
SMAJ220A	SX	SMAJ220CA	VX	246	272	1.0	1.0	220.0	1.1	356.0
SMAJ250A	SZ	SMAJ250CA	VZ	279	309	1.0	1.0	250.0	1.0	405.0
SMAJ300A	TE	SMAJ300CA	UE	335	371	1.0	1.0	300.0	0.8	486.0
SMAJ350A	TG	SMAJ350CA	UG	391	432	1.0	1.0	350.0	0.7	567.0
SMAJ400A	TK	SMAJ400CA	UK	447	494	1.0	1.0	400.0	0.6	648.0
SMAJ440A	TM	SMAJ440CA	UM	492	543	1.0	1.0	440.0	0.5	713.0

**Typical Characteristics**

FIG1: Peak Pulse Power Rating Curve

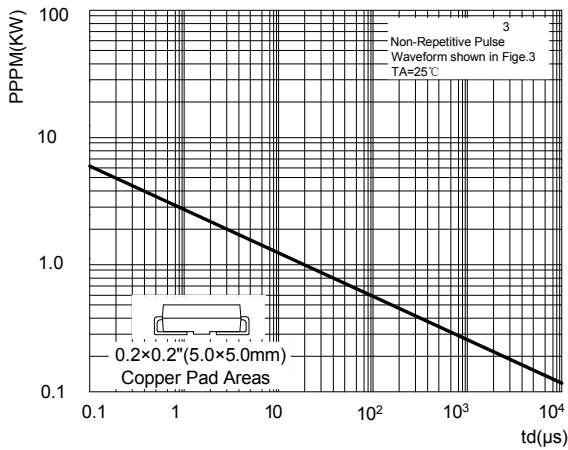


FIG2: Pulse Power or Current vs. Initial Junction Temperature

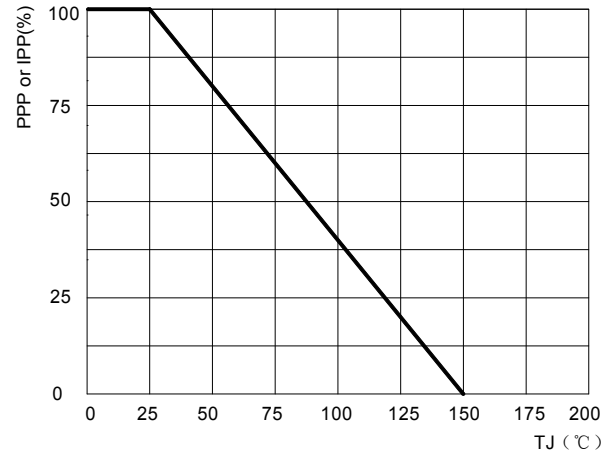


FIG3: Pulse Waveform

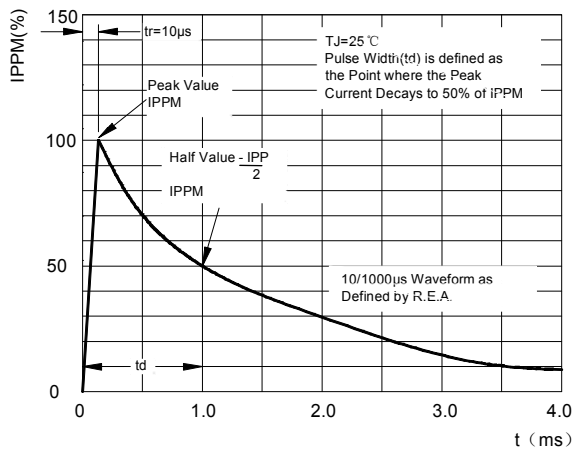


FIG4: Typical Transient Thermal Impedance

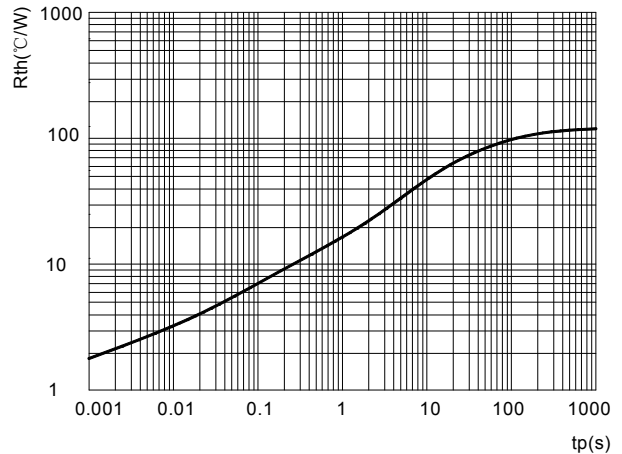


FIG5: Maximum Non-Repetitive Surge Current

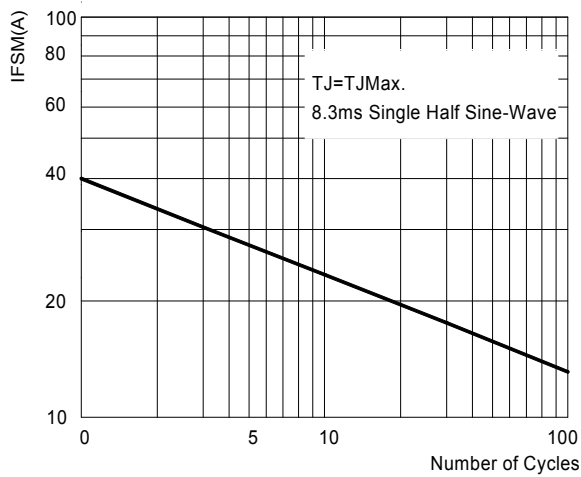
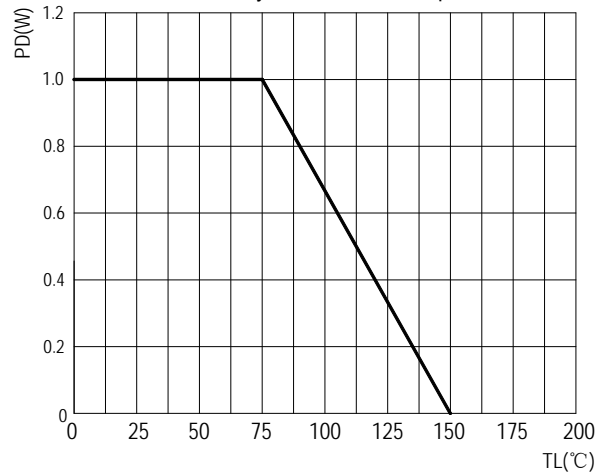
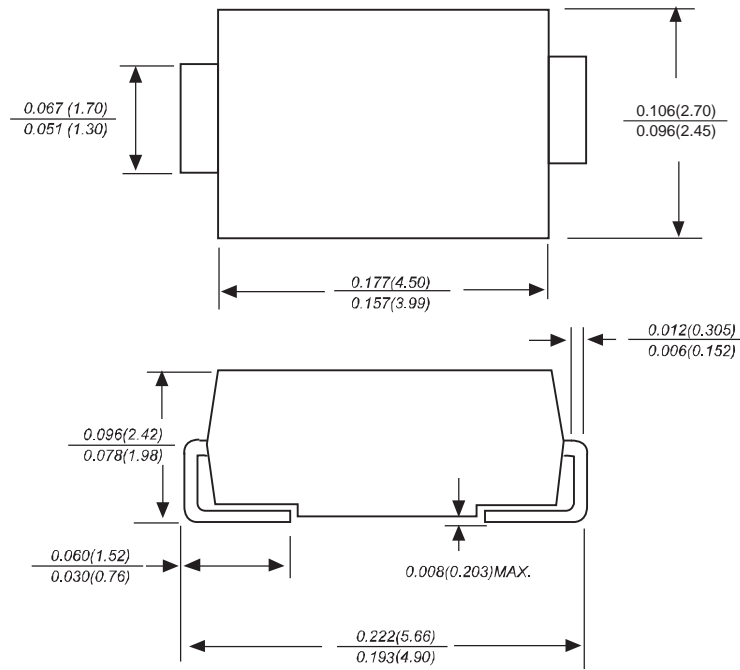


FIG6: Steady State Power Dissipation

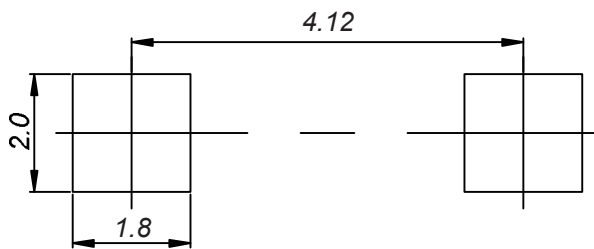


**SMA Package outline Dimensions**



Dimensions in inches and (millimeters)

**SMA Suggested pad Layout**



**Note:**

1. controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.