

RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

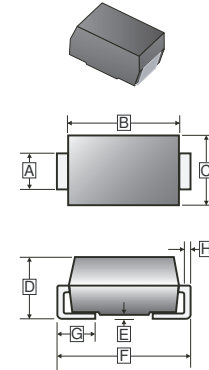
## FEATURES

- Glass passivated chip
- 600W peak pulse power capability with a 10/1000  $\mu$ s waveform
- Low leakage
- Uni- and Bi-directional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

## MECHANICAL DATA

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

SMA



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.24	1.65	E	-	0.3
B	3.99	4.75	F	4.80	5.28
C	2.30	2.90	G	0.76	1.52
D	1.90	2.62	H	0.15	0.31

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SMA	5K	13 inch

## ORDER INFORMATION

Part Number	Directional	Type
SMA6J5.0A~SMA6J58A	Uni	Lead (Pb)-free
SMA6J5.0A-C~SMA6J58A-C		Lead (Pb)-free and Halogen-free
SMA6J5.0CA~SMA6J58CA	Bi	Lead (Pb)-free
SMA6J5.0CA-C~SMA6J58CA-C		Lead (Pb)-free and Halogen-free

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating 25°C ambient temperature unless otherwise specified. Single phase half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.)

Rating	Symbol	Value	Unit
Peak Power Dissipation@ a 10/1000 $\mu$ s waveform <sup>1</sup>	P <sub>PK</sub>	600	W
Peak Pulse Current@ a 10/1000 $\mu$ s waveform <sup>1</sup>	I <sub>PP</sub>	See next table	A
Power Dissipation@ on a infinite heat sink at T <sub>L</sub> =75°C	P <sub>D</sub>	3	W
Peak Forward Surge Current@ 8.3ms single Half Sine-Wave, for unidirectional only <sup>2</sup>	I <sub>FSM</sub>	60	A
Maximum Instantaneous Forward voltage@ at 25A for unidirectional only	V <sub>F</sub>	3.5	V
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 ~ 150	°C

Notes:

1. Non-repetitive current pulse is on Fig. 5 and it derated above T<sub>A</sub>=25°C on Fig. 1.
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

**ELECTRICAL CHARACTERISTICS** (Rating  $T_A=25^\circ\text{C}$  unless otherwise specified)

Part Number		Marking Code		Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$	Working Peak Reverse Voltage	Maximum Reverse Surge Current	Maximum Clamping Voltage $V_C$ @ $I_{PP}$
				Min	Max	$I_T$				
Directional		Directional		V	V	mA	$\mu\text{A}$	V	A	V
Uni	Bi	Uni	Bi							
SMA6J5.0A	SMA6J5.0CA	A6J5.0A	A6J5.0CA	6.40	7.00	10	800	5.0	65.22	9.2
SMA6J6.0A	SMA6J6.0CA	A6J6.0A	A6J6.0CA	6.67	7.37	10	800	6.0	58.25	10.3
SMA6J6.5A	SMA6J6.5CA	A6J6.5A	A6J6.5CA	7.22	7.98	10	500	6.5	53.57	11.2
SMA6J7.0A	SMA6J7.0CA	A6J7.0A	A6J7.0CA	7.78	8.60	10	200	7.0	50.00	12.0
SMA6J7.5A	SMA6J7.5CA	A6J7.5A	A6J7.5CA	8.33	9.21	1	100	7.5	46.51	12.9
SMA6J8.0A	SMA6J8.0CA	A6J8.0A	A6J8.0CA	8.89	9.83	1	50	8.0	44.12	13.6
SMA6J8.5A	SMA6J8.5CA	A6J8.5A	A6J8.5CA	9.44	10.4	1	10	8.5	41.67	14.4
SMA6J9.0A	SMA6J9.0CA	A6J9.0A	A6J9.0CA	10.0	11.1	1	5	9.0	38.96	15.4
SMA6J10A	SMA6J10CA	A6J10A	A6J10CA	11.1	12.3	1	1	10	35.29	17.0
SMA6J11A	SMA6J11CA	A6J11A	A6J11CA	12.2	13.5	1	1	11	32.97	18.2
SMA6J12A	SMA6J12CA	A6J12A	A6J12CA	13.3	14.7	1	1	12	30.15	19.9
SMA6J13A	SMA6J13CA	A6J13A	A6J13CA	14.4	15.9	1	1	13	27.91	21.5
SMA6J14A	SMA6J14CA	A6J14A	A6J14CA	15.6	17.2	1	1	14	25.86	23.2
SMA6J15A	SMA6J15CA	A6J15A	A6J15CA	16.7	18.5	1	1	15	24.59	24.4
SMA6J16A	SMA6J16CA	A6J16A	A6J16CA	17.8	19.7	1	1	16	23.08	26.0
SMA6J17A	SMA6J17CA	A6J17A	A6J17CA	18.9	20.9	1	1	17	21.74	27.6
SMA6J18A	SMA6J18CA	A6J18A	A6J18CA	20.0	22.1	1	1	18	20.55	29.2
SMA6J19A	SMA6J19CA	A6J19A	A6J19CA	21.1	23.3	1	1	19	19.49	30.8
SMA6J20A	SMA6J20CA	A6J20A	A6J20CA	22.2	24.5	1	1	20	18.52	32.4
SMA6J22A	SMA6J22CA	A6J22A	A6J22CA	24.4	26.9	1	1	22	16.90	35.5
SMA6J24A	SMA6J24CA	A6J24A	A6J24CA	26.7	29.5	1	1	24	15.42	38.9
SMA6J26A	SMA6J26CA	A6J26A	A6J26CA	28.9	31.9	1	1	26	14.25	42.1
SMA6J28A	SMA6J28CA	A6J28A	A6J28CA	31.1	34.4	1	1	28	13.22	45.4
SMA6J30A	SMA6J30CA	A6J30A	A6J30CA	33.3	36.8	1	1	30	12.40	48.4
SMA6J33A	SMA6J33CA	A6J33A	A6J33CA	36.7	40.6	1	1	33	11.26	53.3
SMA6J36A	SMA6J36CA	A6J36A	A6J36CA	40.0	44.2	1	1	36	10.33	58.1
SMA6J40A	SMA6J40CA	A6J40A	A6J40CA	44.4	49.1	1	1	40	9.30	64.5
SMA6J43A	SMA6J43CA	A6J43A	A6J43CA	47.8	52.8	1	1	43	8.65	69.4
SMA6J45A	SMA6J45CA	A6J45A	A6J45CA	50.0	55.3	1	1	45	8.25	72.7
SMA6J48A	SMA6J48CA	A6J48A	A6J48CA	53.3	58.9	1	1	48	7.75	77.4
SMA6J51A	SMA6J51CA	A6J51A	A6J51CA	56.7	62.7	1	1	51	7.28	82.4
SMA6J54A	SMA6J54CA	A6J54A	A6J54CA	60.0	66.3	1	1	54	6.89	87.1
SMA6J58A	SMA6J58CA	A6J58A	A6J58CA	64.4	71.2	1	1	58	6.41	93.6

Notes:

- Suffix 'A' denotes 5% tolerance device.
- For Bidirectional devices, CA suffix is added.
- For Bidirectional devices having 10 volts and under  $V_R$ , the  $I_R$  limit is double.

**CHARACTERISTICS CURVE**

Fig. 1 - Pulse Derating Curve

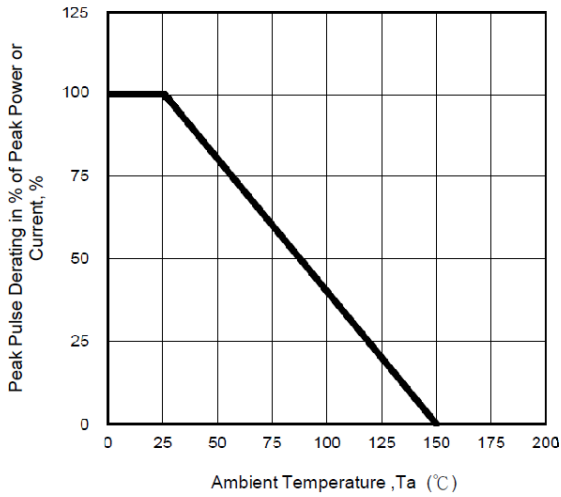


Fig. 2 - Maximum Non-Repetitive Surge Current

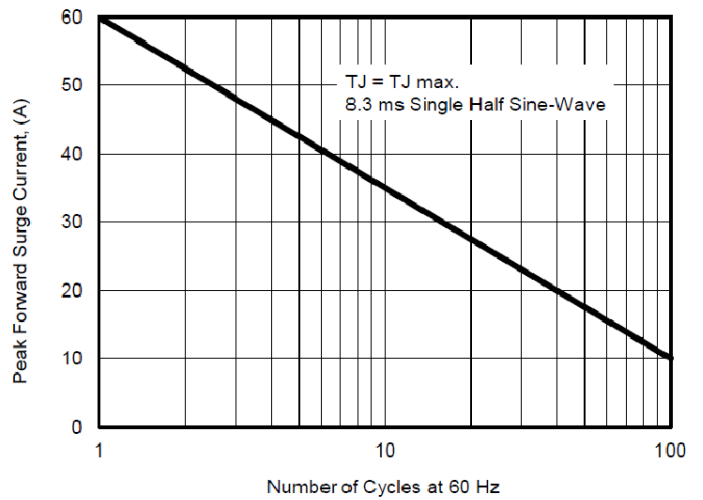


Fig. 3 - Steady State Power Derating Curve

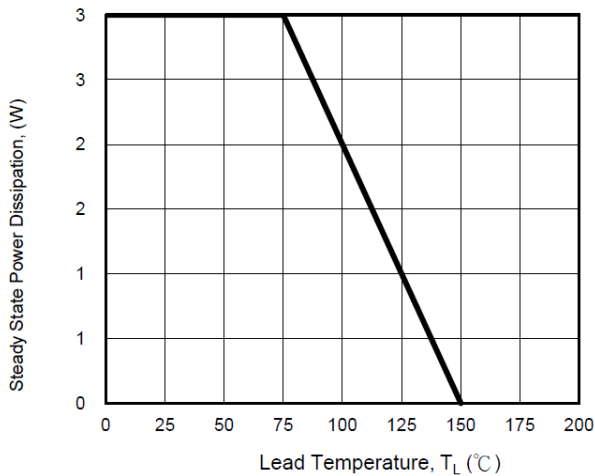


Fig. 4 - Peak Pulse Power Rating Curve

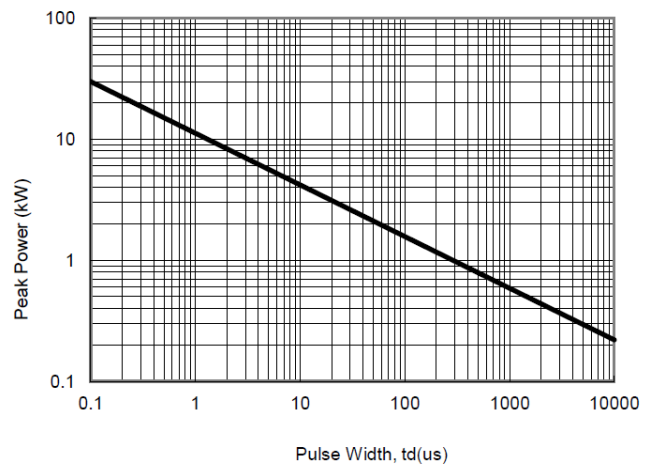


Fig. 5 - Pulse Waveform

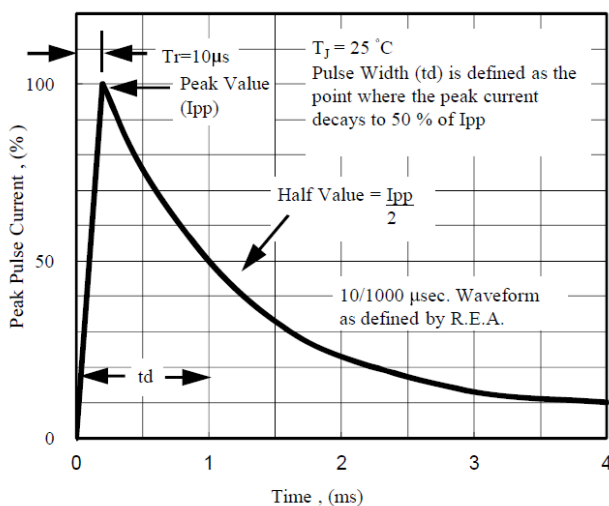


Fig. 6 - Typical Junction Capacitance

