Surface Mount Transient Voltage Suppressor
600 Watt Peak Pulse Power
SMA6J Series

1. Features

- For surface mounted applications in order to optimize board space
- Halogen-Free
- RoHS compliant
- Typical maximum temperature coefficient △VBR=0.1%xVBR@25℃x△T
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition Rate (duty cycle):0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to V(BR)
- Typical IR less than 1uA above 12V
- High Temperature solderting: 260℃/40 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte Tin Lead-free plated

2. Mechanical Data

Case: JEDEC DO214AC. Molded plastic over glass passivated junction
Terminal: Solderable per MIL-STD-750, Method 2026
Polarity: Color band denoted positive end (cathode) except Bidirectional
Standard Packaging: 12mm tape (EIA STD RS-481)
Weight: 0.002 ounce, 0.061 gram

3. Devices For Bipolar Application

For Bidirectional types, use C or CA as suffix; suffixes without A, the VBR is ± 10%.
(e.g. SMA6J5.0C , SMA6J90CA)
Electrical characteristics apply in both directions

4. Maximum Ratings and Characteristics(25℃)

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1,2 ,Fig.1)	P_{PPM}	Minimum 600	Watts
Peak Pulse Current of on 10/1000μs waveform (Note 1,Fig.3)	I_{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load(JEDEC Method) (Note2,3)	I_{FSM}	65	Amps
Operating junction and Storage Temperature Range	T_J , T_{STG}	-55 to + 150	℃

Notes :

1.Non-repetitive current pulse , per Fig. 3 and derated above TA = 25℃ per Fig. 2
2.Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

NOTE : Specification subject to change without notice.

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Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR}(V) @I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C(V)@I_{PP}	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R@ V_{RWM} (μA)
Uni-Polar	Bi-Polar	Uni	Bi	V_{RWM}(V)	Min	Max				
SMA6J5.0A	SMA6J5.0CA	KE	TE	5.0	6.40	7.00	10	9.2	65.3	800
SMA6J6.0A	SMA6J6.0CA	KG	TG	6.0	6.67	7.37	10	10.3	58.3	800
SMA6J6.5A	SMA6J6.5CA	KK	TK	6.5	7.22	7.98	10	11.2	53.6	500
SMA6J7.0A	SMA6J7.0CA	KM	TM	7.0	7.78	8.60	10	12.0	50.0	200
SMA6J7.5A	SMA6J7.5CA	KP	TP	7.5	8.33	9.21	1	12.9	46.6	100
SMA6J8.0A	SMA6J8.0CA	KR	TR	8.0	8.89	9.83	1	13.6	44.2	50
SMA6J8.5A	SMA6J8.5CA	KT	TT	8.5	9.44	10.40	1	14.4	41.7	20
SMA6J9.0A	SMA6J9.0CA	KV	TV	9.0	10.00	11.10	1	15.4	39.0	10
SMA6J10A	SMA6J10CA	KX	TX	10.0	11.10	12.30	1	17.0	35.3	5
SMA6J11A	SMA6J11CA	KZ	TZ	11.0	12.20	13.50	1	18.2	33.0	1
SMA6J12A	SMA6J12CA	LE	UE	12.0	13.30	14.70	1	19.9	30.2	1
SMA6J13A	SMA6J13CA	LG	UG	13.0	14.40	15.90	1	21.5	28.0	1
SMA6J14A	SMA6J14CA	LK	UK	14.0	15.60	17.20	1	23.2	25.9	1
SMA6J15A	SMA6J15CA	LM	UM	15.0	16.70	18.50	1	24.4	24.6	1
SMA6J16A	SMA6J16CA	LP	UP	16.0	17.80	19.70	1	26.0	23.1	1
SMA6J17A	SMA6J17CA	LR	UR	17.0	18.90	20.90	1	27.6	21.8	1
SMA6J18A	SMA6J18CA	LT	UT	18.0	20.00	22.10	1	29.2	20.6	1
SMA6J20A	SMA6J20CA	LV	UV	20.0	22.20	24.50	1	32.4	18.6	1
SMA6J22A	SMA6J22CA	LX	UX	22.0	24.40	26.90	1	35.5	16.9	1
SMA6J24A	SMA6J24CA	LZ	UZ	24.0	26.70	29.50	1	38.9	15.5	1
SMA6J26A	SMA6J26CA	ME	WE	26.0	28.90	31.90	1	42.1	14.3	1
SMA6J28A	SMA6J28CA	MG	WG	28.0	31.10	34.40	1	45.4	13.3	1
SMA6J30A	SMA6J30CA	MK	WK	30.0	33.30	36.80	1	48.4	12.4	1
SMA6J33A	SMA6J33CA	MM	WM	33.0	36.70	40.60	1	53.3	11.3	1
SMA6J36A	SMA6J36CA	MP	WP	36.0	40.00	44.20	1	58.1	10.4	1
SMA6J40A	SMA6J40CA	MR	WR	40.0	44.40	49.10	1	64.5	9.3	1
SMA6J43A	SMA6J43CA	MT	WT	43.0	47.80	52.80	1	69.4	8.7	1
SMA6J45A	SMA6J45CA	MV	WV	45.0	50.00	55.30	1	72.7	8.3	1
SMA6J48A	SMA6J48CA	MX	WX	48.0	53.30	58.90	1	77.4	7.8	1.0
SMA6J51A	SMA6J51CA	MZ	WZ	51.0	56.70	62.70	1	82.4	7.3	1.0
SMA6J54A	SMA6J54CA	NE	XE	54.0	60.00	66.30	1	87.1	6.9	1.0
SMA6J58A	SMA6J58CA	NG	XG	58.0	64.40	71.20	1	93.6	6.5	1.0

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SMA6J60A	SMA6J60CA	NK	XK	60.0	66.70	73.70	1	96.8	6.2	1.0
SMA6J64A	SMA6J64CA	NM	XM	64.0	71.10	78.60	1	103.0	5.9	1.0
SMA6J70A	SMA6J70CA	NP	XP	70.0	77.80	86.00	1	113.0	5.3	1.0
SMA6J75A	SMA6J75CA	NR	XR	75.0	83.30	92.10	1	121.0	5.0	1.0
SMA6J78A	SMA6J78CA	NT	XT	78.0	86.70	95.80	1	126.0	4.8	1.0
SMA6J85A	SMA6J85CA	NV	XV	85.0	94.40	104.00	1	137.0	4.4	1.0
SMA6J90A	SMA6J90CA	PE	YE	90.0	100.00	111.00	1	146.0	4.1	1.0
SMA6J100A	-	PG	-	100.0	111.00	123.00	1	162.0	3.7	1.0
SMA6J110A	-	PK	-	110.0	122.00	135.00	1	177.0	3.4	1.0
SMA6J120A	-	PM	-	120.0	133.00	147.00	1	193.0	3.1	1.0
SMA6J130A	-	PP	-	130.0	144.00	159.00	1	209.0	2.9	1.0

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

5. Ratings and Characteristic Curves (TA=25℃ unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating

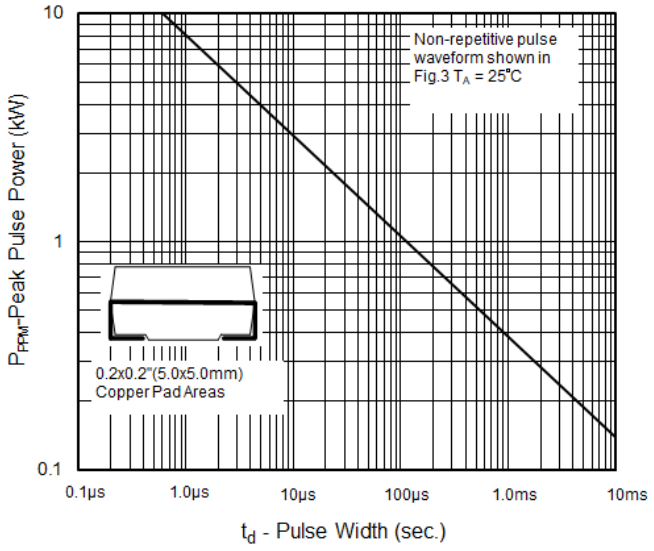


Fig.2 - Pulse Derating Curve

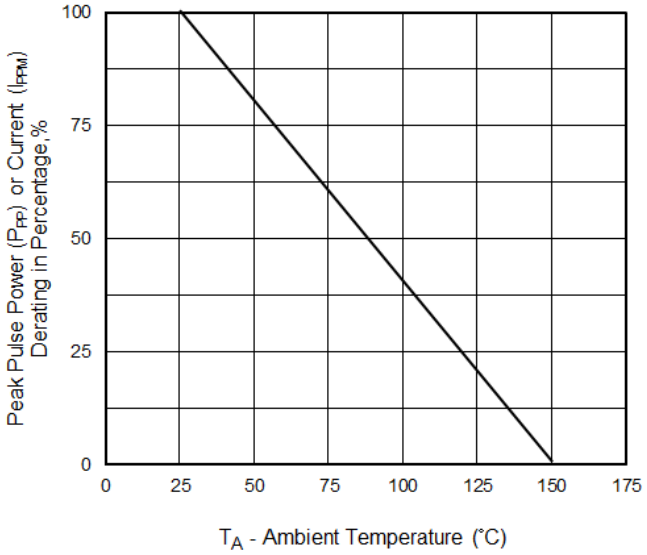


Fig.3 - Pulse Waveform

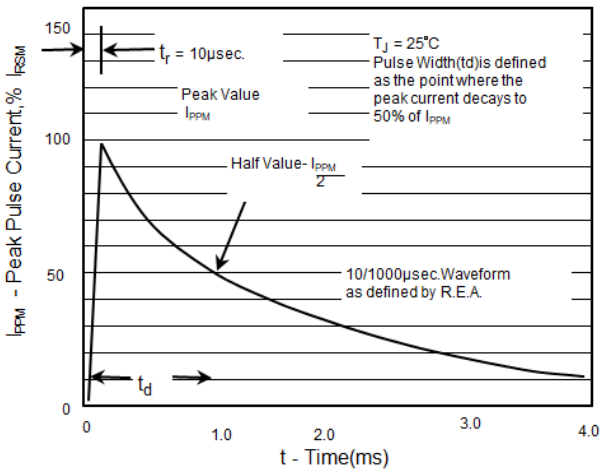


Fig. 4 - Typical Junction Capacitance

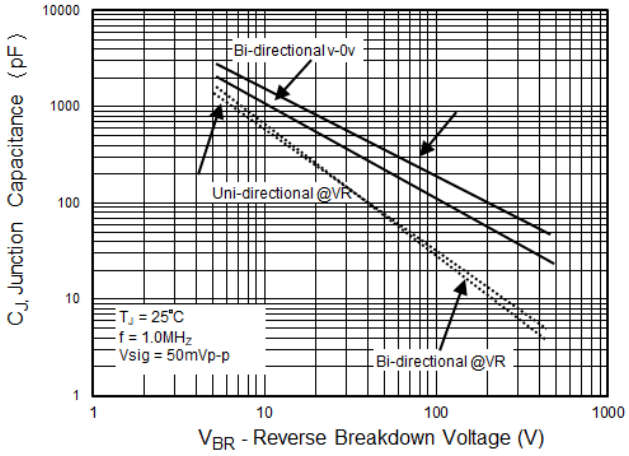


Fig. 5 - Steady State Power Derating Curve

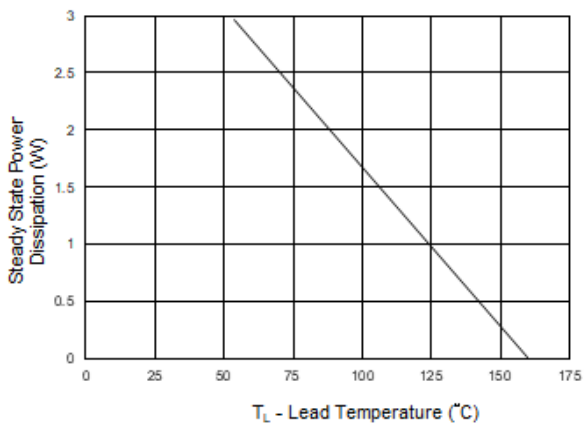
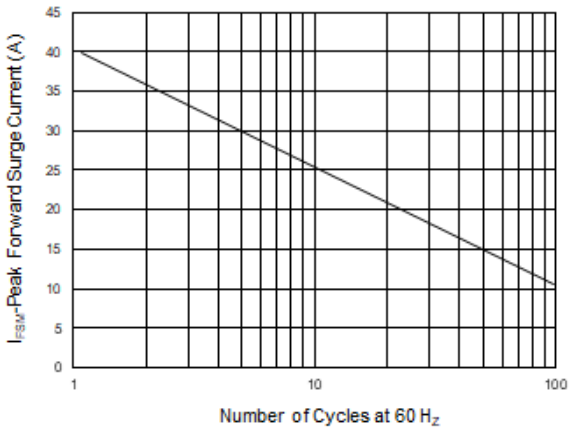


Fig.6 - Maximum Non-repetitive Forward Surge current uni-directional only



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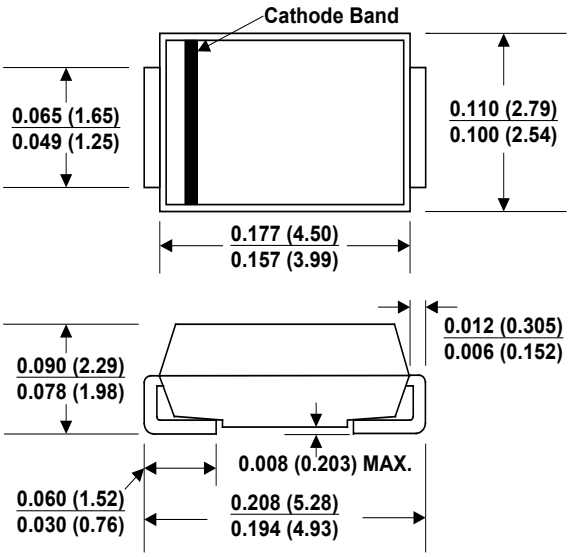
6. Dimension

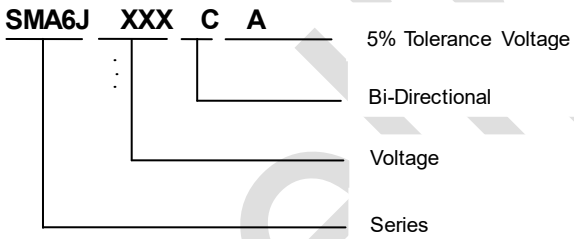
DO-214AC (SMA)



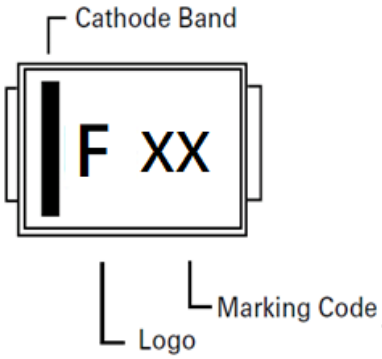
Dimensions in inches and(millimeters)

7. Part Numbering and Marking System

Part Numbering System



Marking System



8. Packaging Specification

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
SMA6JxxxXX	DO-214AC	5000	Tape & Reel - 12mm/13" tape	EIA STD RS-481
SMA6JxxxXX	DO-214AC	1000	Tape & Reel - 12mm/ 7" tape	EIA STD RS-481

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