

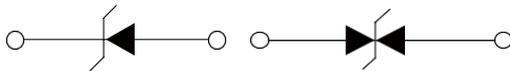
Applications

- ◆ Power supply protection
- ◆ Automotive application
- ◆ Industrial application
- ◆ Power management

Features

- ◆ Low profile package
- ◆ Ideal for automated placement
- ◆ 600 Watt peak pulse power capability with a 10/1000 μ s waveform
- ◆ For surface mounted applications to optimize board space
- ◆ Excellent clamping capability
- ◆ Very fast response time
- ◆ Low incremental surge resistance

DO-214AC(SMA)



DO-214AC(SMA)

Uni-directional

Bi-directional

Product and Packing Information

Part Number	QTY/Reel	Reel Size
SMA6Jxx(C)A	5,000	13 inch

Maximum Ratings ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note1,Note2)	P_{PPM}	600	W
Steady State Power Dissipation at $T_L=75^{\circ}\text{C}$,Lead lengths.375"(9.5mm)(Note2)	P_D	3.3	W

Note 1. Non-repetitive current pulse, $T_A = 25^{\circ}\text{C}$.

2. Mounted on 5.0mm*5.0mm (0.03mm thick) Copper Pads to each terminal.

Thermal Considerations

Parameter	Symbol	Value	Unit
Operating Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$
Junction to Ambient on printed circuit	$R_{\theta JA}$	120	$^{\circ}\text{C/W}$

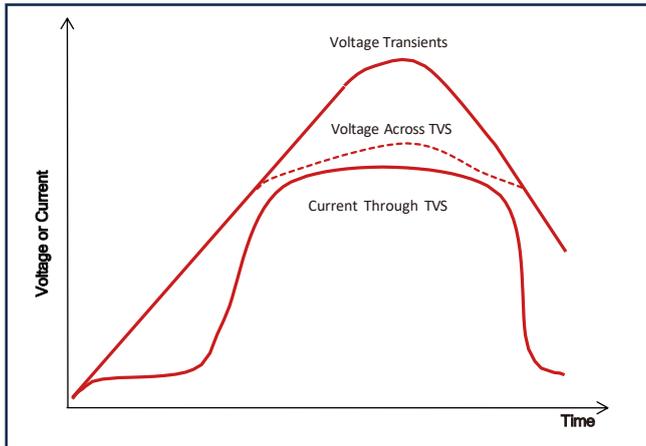
Electrical Characteristics (T_A=25°C)

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μ A)
SMA6J5.0A	SMA6J5.0CA	6KE	6AE	5.0	6.40	7.00	10	9.2	65.3	800
SMA6J6.0A	SMA6J6.0CA	6KG	6AG	6.0	6.67	7.37	10	10.3	58.3	800
SMA6J6.5A	SMA6J6.5CA	6KK	6AK	6.5	7.22	7.98	10	11.2	53.6	500
SMA6J7.0A	SMA6J7.0CA	6KM	6AM	7.0	7.78	8.60	10	12.0	50.0	200
SMA6J7.5A	SMA6J7.5CA	6KP	6AP	7.5	8.33	9.21	1	12.9	46.6	100
SMA6J8.0A	SMA6J8.0CA	6KR	6AR	8.0	8.89	9.83	1	13.6	44.2	50
SMA6J8.5A	SMA6J8.5CA	6KT	6AT	8.5	9.44	10.4	1	14.4	41.7	20
SMA6J9.0A	SMA6J9.0CA	6KV	6AV	9.0	10.0	11.1	1	15.4	39.0	10
SMA6J10A	SMA6J10CA	6KX	6AX	10.0	11.1	12.3	1	17.0	35.3	5
SMA6J11A	SMA6J11CA	6KZ	6AZ	11.0	12.2	13.5	1	18.2	33.0	1
SMA6J12A	SMA6J12CA	6LE	6BE	12.0	13.3	14.7	1	19.9	30.2	1
SMA6J13A	SMA6J13CA	6LG	6BG	13.0	14.4	15.9	1	21.5	28.0	1
SMA6J14A	SMA6J14CA	6LK	6BK	14.0	15.6	17.2	1	23.2	25.9	1
SMA6J15A	SMA6J15CA	6LM	6BM	15.0	16.7	18.5	1	24.4	24.6	1
SMA6J16A	SMA6J16CA	6LP	6BP	16.0	17.8	19.7	1	26.0	23.1	1
SMA6J17A	SMA6J17CA	6LR	6BR	17.0	18.9	20.9	1	27.6	21.8	1
SMA6J18A	SMA6J18CA	6LT	6BT	18.0	20.0	22.1	1	29.2	20.6	1
SMA6J20A	SMA6J20CA	6LV	6BV	20.0	22.2	24.5	1	32.4	18.6	1
SMA6J22A	SMA6J22CA	6LX	6BX	22.0	24.4	26.9	1	35.5	16.9	1
SMA6J24A	SMA6J24CA	6LZ	6BZ	24.0	26.7	29.5	1	38.9	15.5	1
SMA6J26A	SMA6J26CA	6ME	6CE	26.0	28.9	31.9	1	42.1	14.3	1
SMA6J28A	SMA6J28CA	6MG	6CG	28.0	31.1	34.4	1	45.4	13.3	1
SMA6J30A	SMA6J30CA	6MK	6CK	30.0	33.3	36.8	1	48.4	12.4	1
SMA6J33A	SMA6J33CA	6MM	6CM	33.0	36.7	40.6	1	53.3	11.3	1
SMA6J36A	SMA6J36CA	6MP	6CP	36.0	40.0	44.2	1	58.1	10.4	1
SMA6J40A	SMA6J40CA	6MR	6CR	40.0	44.4	49.1	1	64.5	9.3	1
SMA6J43A	SMA6J43CA	6MT	6CT	43.0	47.8	52.8	1	69.4	8.7	1
SMA6J45A	SMA6J45CA	6MV	6CV	45.0	50.0	55.3	1	72.7	8.3	1
SMA6J48A	SMA6J48CA	6MX	6CX	48.0	53.3	58.9	1	77.4	7.8	1
SMA6J51A	SMA6J51CA	6MZ	6CZ	51.0	56.7	62.7	1	82.4	7.3	1
SMA6J54A	SMA6J54CA	6NE	6DE	54.0	60.0	66.3	1	87.1	6.9	1
SMA6J58A	SMA6J58CA	6NG	6DG	58.0	64.4	71.2	1	93.6	6.5	1

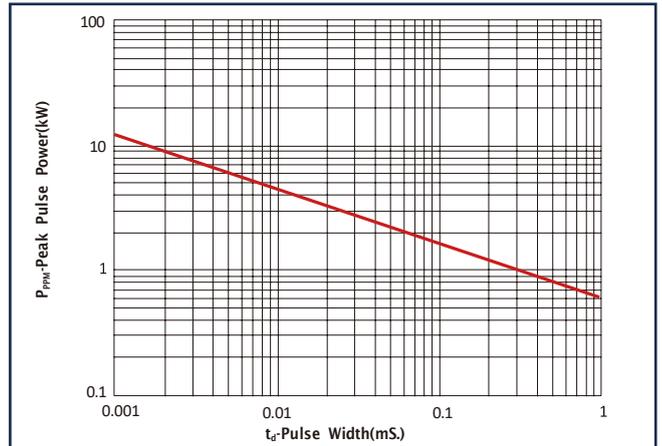
Electrical Characteristics (T_A=25°C)

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μ A)
SMA6J60A	SMA6J60CA	6NK	6DK	60.0	66.7	73.7	1	96.8	6.2	1
SMA6J64A	SMA6J64CA	6NM	6DM	64.0	71.1	78.6	1	103.0	5.9	1
SMA6J70A	SMA6J70CA	6NP	6DP	70.0	77.8	86.0	1	113.0	5.3	1
SMA6J75A	SMA6J75CA	6NR	6DR	75.0	83.3	92.1	1	121.0	5.0	1
SMA6J78A	SMA6J78CA	6NT	6DT	78.0	86.7	95.8	1	126.0	4.8	1
SMA6J85A	SMA6J85CA	6NV	6DV	85.0	94.4	104.0	1	137.0	4.4	1
SMA6J90A	SMA6J90CA	6NX	6DX	90.0	100.0	111.0	1	146.0	4.1	1
SMA6J100A	SMA6J100CA	6NZ	6DZ	100.0	111.0	123.0	1	162.0	3.7	1
SMA6J110A	SMA6J110CA	6PE	6EE	110.0	122.0	135.0	1	177.0	3.4	1
SMA6J120A	SMA6J120CA	6PG	6EG	120.0	133.0	147.0	1	193.0	3.1	1
SMA6J130A	SMA6J130CA	6PK	6EK	130.0	144.0	159.0	1	209.0	2.9	1
SMA6J150A	SMA6J150CA	6PM	6EM	150.0	167.0	185.0	1	243.0	2.5	1
SMA6J160A	SMA6J160CA	6PP	6EP	160.0	178.0	197.0	1	259.0	2.3	1
SMA6J170A	SMA6J170CA	6PR	6ER	170.0	189.0	209.0	1	275.0	2.2	1
SMA6J180A	SMA6J180CA	6PT	6ET	180.0	201.0	222.0	1	292.0	2.1	1
SMA6J190A	SMA6J190CA	6PA	6EC	190.0	209.0	243.0	1	308.0	2.0	1
SMA6J200A	SMA6J200CA	6PV	6EV	200.0	224.0	247.0	1	324.0	1.9	1
SMA6J210A	SMA6J210CA	6PB	6ED	210.0	231.0	269.0	1	340.0	1.8	1
SMA6J220A	SMA6J220CA	6PX	6EX	220.0	246.0	272.0	1	356.0	1.7	1
SMA6J250A	SMA6J250CA	6PZ	6EZ	250.0	279.0	309.0	1	405.0	1.5	1
SMA6J300A	SMA6J300CA	6QE	6FE	300.0	335.0	371.0	1	486.0	1.3	1
SMA6J350A	SMA6J350CA	6QG	6FG	350.0	391.0	432.0	1	567.0	1.1	1
SMA6J400A	SMA6J400CA	6QK	6FK	400.0	447.0	494.0	1	648.0	0.9	1
SMA6J440A	SMA6J440CA	6QM	6FM	440.0	492.0	543.0	1	713.0	0.8	1

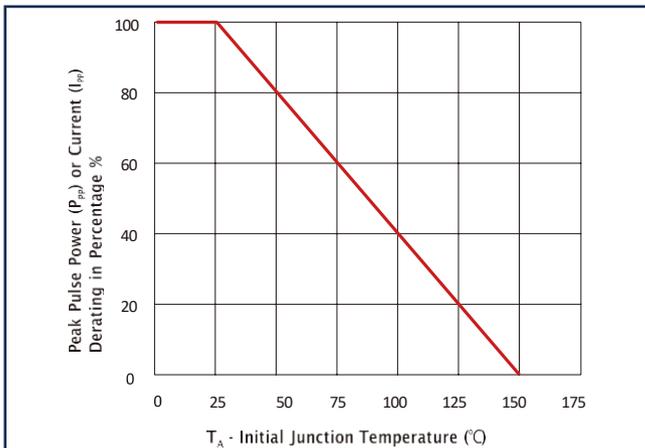
Characteristic Curves



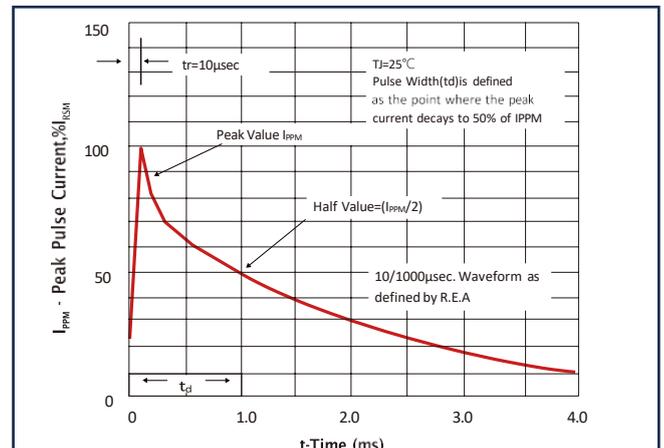
TVS Transients Clamping Waveform



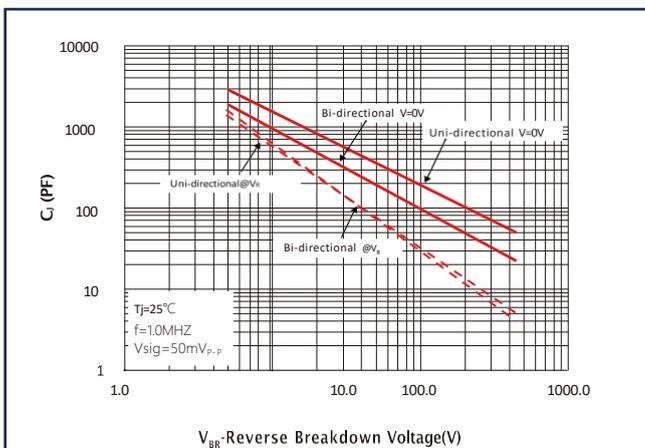
Peak Pulse Power Rating Curve



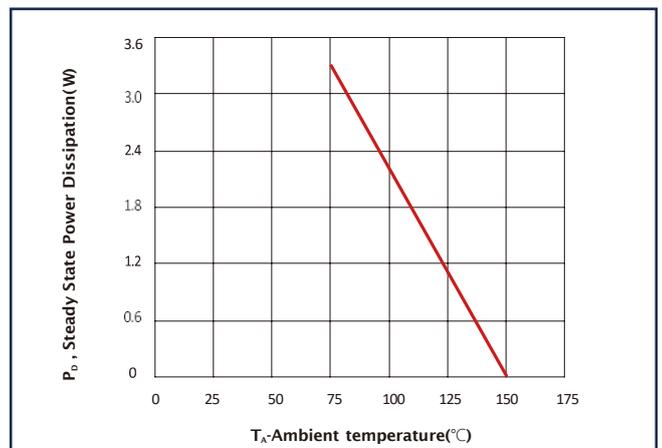
Pulse Derating Curve



Pulse Waveform



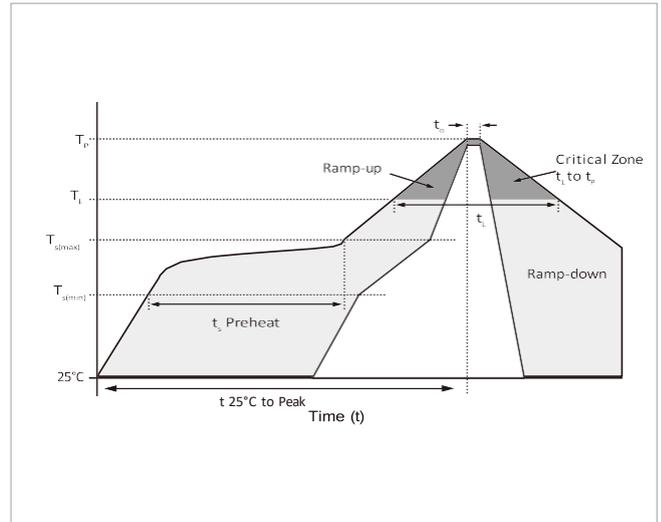
Typical Junction Capacitance



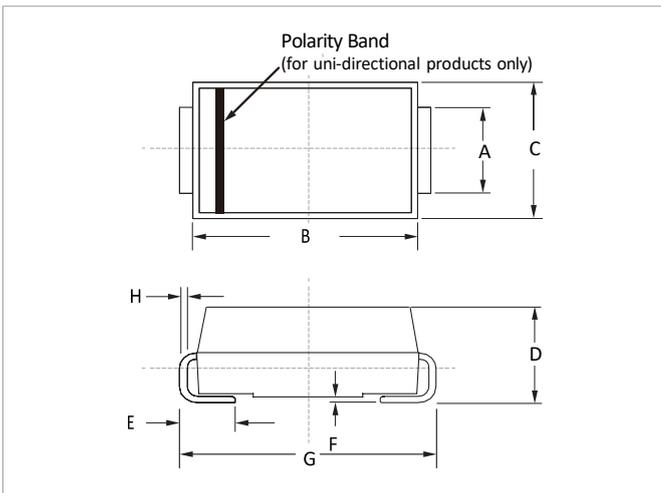
Steady State Power Dissipation Derating Curve

Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_p)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_r)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

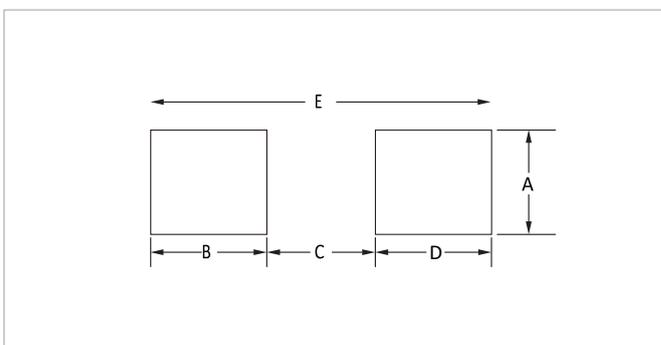


DO-214AC(SMA) Package Information



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.20	1.60	0.047	0.063
B	4.20	4.60	0.165	0.181
C	2.60	2.80	0.102	0.110
D	2.10	2.40	0.083	0.094
E	0.76	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	4.85	5.25	0.191	0.207
H	0.15	0.30	0.006	0.012

Recommended Pad Lay Out Dimensions



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.63	-	0.064	-
B	1.45	-	0.057	-
C	-	2.80	-	0.090
D	1.45	-	0.057	-
E	5.28 REF		0.208 REF	

Tape And Reel Specification - SMA

