

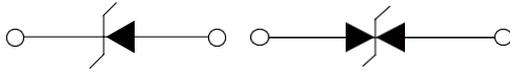
Applications

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

Features

- ◆ Low profile package
- ◆ Ideal for automated placement
- ◆ 1500 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-214AB(SMC)



DO-214AB(SMC)

Uni-directional

Bi-directional

Product and Packing Information

Part Number	QTY/Reel	Reel Size
SMCJxx(C)A	3,000	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}	1500	W
Steady State Power Dissipation at $T_L=50^\circ\text{C}$, Lead lengths .375" (9.5mm) (Note2)	P_D	6.5	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	$R_{\theta JA}$	75	$^\circ\text{C/W}$

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

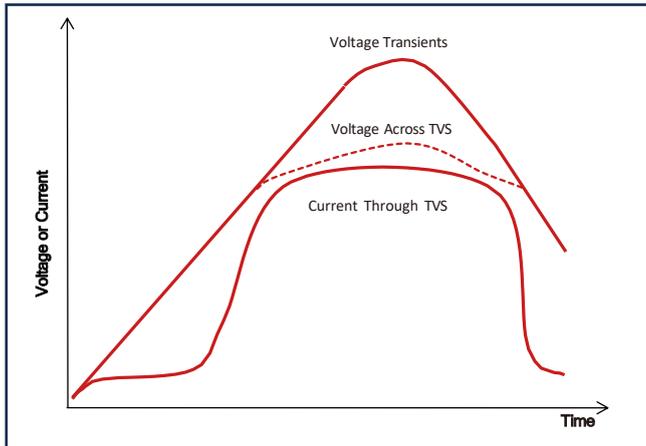
Electrical Characteristics (T_A=25°C)

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 (uA)
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.00	10	9.2	163.0	800
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.7	800
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	134.0	500
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.40	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.00	11.10	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	GDX	BDX	10.0	11.10	12.30	1	17.0	88.3	5
SMCJ11A	SMCJ11CA	GDZ	BDZ	11.0	12.20	13.50	1	18.2	82.5	1
SMCJ12A	SMCJ12CA	GEE	BEE	12.0	13.30	14.70	1	19.9	75.4	1
SMCJ13A	SMCJ13CA	GEG	BEG	13.0	14.40	15.90	1	21.5	69.8	1
SMCJ14A	SMCJ14CA	GEK	BEK	14.0	15.60	17.20	1	23.2	64.7	1
SMCJ15A	SMCJ15CA	GEM	BEM	15.0	16.70	18.50	1	24.4	61.5	1
SMCJ16A	SMCJ16CA	GEP	BEP	16.0	17.80	19.70	1	26.0	57.7	1
SMCJ17A	SMCJ17CA	GER	BER	17.0	18.90	20.90	1	27.6	54.4	1
SMCJ18A	SMCJ18CA	GET	BET	18.0	20.00	22.10	1	29.2	51.4	1
SMCJ20A	SMCJ20CA	GEV	BEV	20.0	22.20	24.50	1	32.4	46.3	1
SMCJ22A	SMCJ22CA	GEX	BEX	22.0	24.40	26.90	1	35.5	42.3	1
SMCJ24A	SMCJ24CA	GEZ	BEZ	24.0	26.70	29.50	1	38.9	38.6	1
SMCJ26A	SMCJ26CA	GFE	BFE	26.0	28.90	31.90	1	42.1	35.7	1
SMCJ28A	SMCJ28CA	GFG	BFG	28.0	31.10	34.40	1	45.4	33.1	1
SMCJ30A	SMCJ30CA	GFK	BFK	30.0	33.30	36.80	1	48.4	31.0	1
SMCJ33A	SMCJ33CA	GFM	BFM	33.0	36.70	40.60	1	53.3	28.2	1
SMCJ36A	SMCJ36CA	GFP	BFP	36.0	40.00	44.20	1	58.1	25.9	1
SMCJ40A	SMCJ40CA	GFR	BFR	40.0	44.40	49.10	1	64.5	23.3	1
SMCJ43A	SMCJ43CA	GFT	BFT	43.0	47.80	52.80	1	69.4	21.7	1
SMCJ45A	SMCJ45CA	GFV	BFV	45.0	50.00	55.30	1	72.7	20.6	1
SMCJ48A	SMCJ48CA	GFX	BFX	48.0	53.30	58.90	1	77.4	19.4	1
SMCJ51A	SMCJ51CA	GFZ	BFZ	51.0	56.70	62.70	1	82.4	18.2	1
SMCJ54A	SMCJ54CA	GGE	BGE	54.0	60.00	66.30	1	87.1	17.3	1
SMCJ58A	SMCJ58CA	GGG	BGG	58.0	64.40	71.20	1	93.6	16.1	1

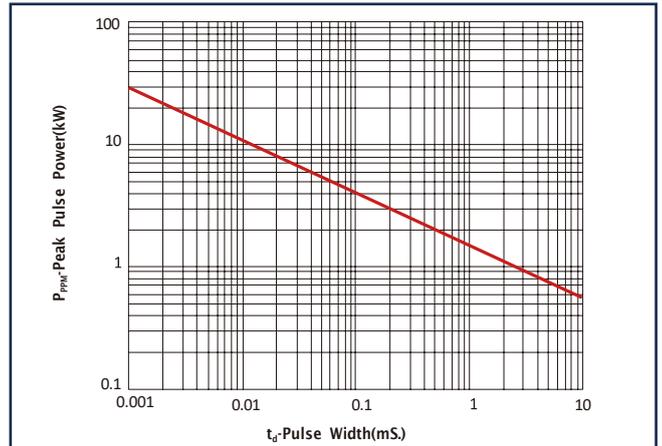
Electrical Characteristics (T_A=25°C)

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 (uA)
SMCJ60A	SMCJ60CA	GGK	BGK	60.0	66.7	73.7	1	96.8	15.5	1
SMCJ64A	SMCJ64CA	GGM	BGM	64.0	71.1	78.6	1	103.0	14.6	1
SMCJ70A	SMCJ70CA	GGP	BGP	70.0	77.8	86.0	1	113.0	13.3	1
SMCJ75A	SMCJ75CA	GGR	BGR	75.0	83.3	92.1	1	121.0	12.4	1
SMCJ78A	SMCJ78CA	GGT	BGT	78.0	86.7	95.8	1	126.0	11.9	1
SMCJ85A	SMCJ85CA	GGV	BGV	85.0	94.4	104.0	1	137.0	11.0	1
SMCJ90A	SMCJ90CA	GGX	BGX	90.0	100.0	111.0	1	146.0	10.3	1
SMCJ100A	SMCJ100CA	GGZ	BGZ	100.0	111.0	123.0	1	162.0	9.3	1
SMCJ110A	SMCJ110CA	GHE	BHE	110.0	122.0	135.0	1	177.0	8.5	1
SMCJ120A	SMCJ120CA	GHG	BHG	120.0	133.0	147.0	1	193.0	7.8	1
SMCJ130A	SMCJ130CA	GHK	BHK	130.0	144.0	159.0	1	209.0	7.2	1
SMCJ150A	SMCJ150CA	GHM	BHM	150.0	167.0	185.0	1	243.0	6.2	1
SMCJ160A	SMCJ160CA	GHP	BHP	160.0	178.0	197.0	1	259.0	5.8	1
SMCJ170A	SMCJ170CA	GHR	BHR	170.0	189.0	209.0	1	275.0	5.5	1
SMCJ180A	SMCJ180CA	GHT	BHT	180.0	201.0	222.0	1	292.0	5.1	1
SMCJ200A	SMCJ200CA	GHV	BHV	200.0	224.0	247.0	1	324.0	4.6	1
SMCJ220A	SMCJ220CA	GHX	BHX	220.0	246.0	272.0	1	356.0	4.2	1
SMCJ250A	SMCJ250CA	GHZ	BHZ	250.0	279.0	309.0	1	405.0	3.7	1
SMCJ300A	SMCJ300CA	GJE	BJE	300.0	335.0	371.0	1	486.0	3.1	1
SMCJ350A	SMCJ350CA	GJG	BJG	350.0	391.0	432.0	1	567.0	2.6	1
SMCJ400A	SMCJ400CA	GJK	BJK	400.0	447.0	494.0	1	648.0	2.3	1
SMCJ440A	SMCJ440CA	GJM	BJM	440.0	492.0	543.0	1	713.0	2.1	1
SMCJ480A	SMCJ480CA	GJP	BJP	480.0	536.0	593.0	1	750.0	2.0	1
SMCJ520A	SMCJ520CA	GJR	BJR	520.0	578.0	640.0	1	762.0	2.0	1
SMCJ550A	SMCJ550CA	GJT	BJT	550.0	615.0	680.0	1	860.0	1.7	1

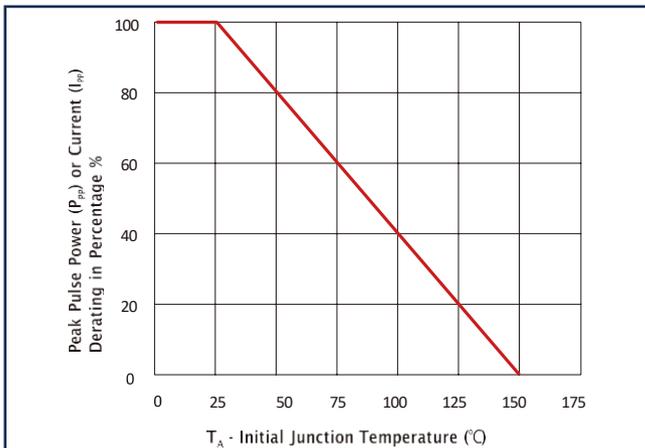
Characteristic Curves



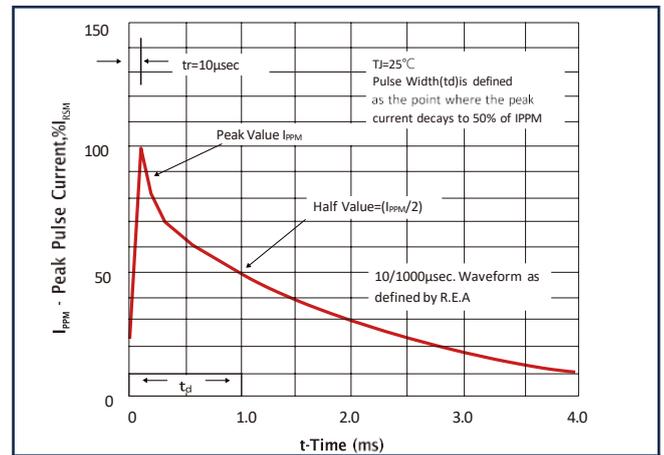
TVS Transients Clamping Waveform



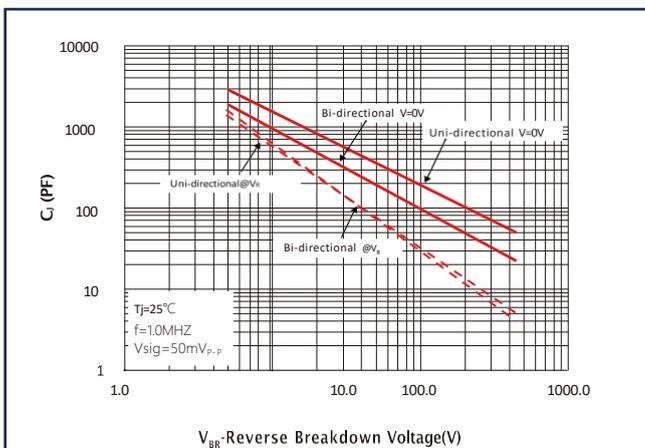
Peak Pulse Power Rating Curve



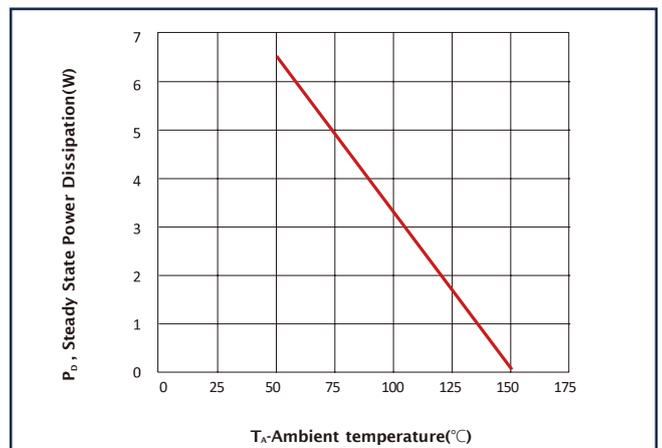
Pulse Derating Curve



Pulse Waveform



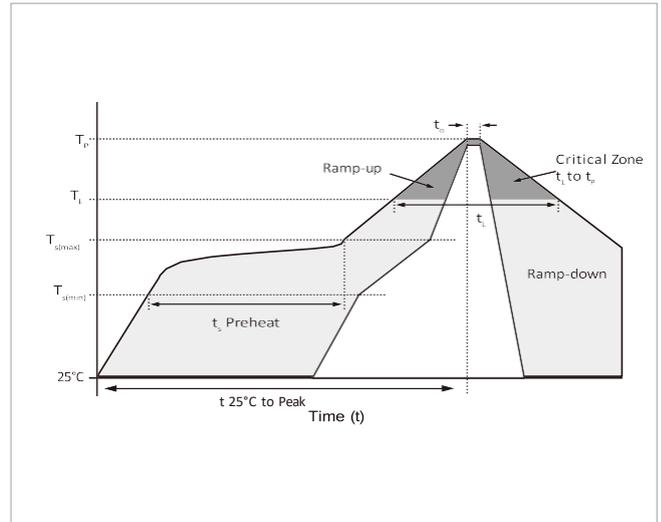
Typical Junction Capacitance



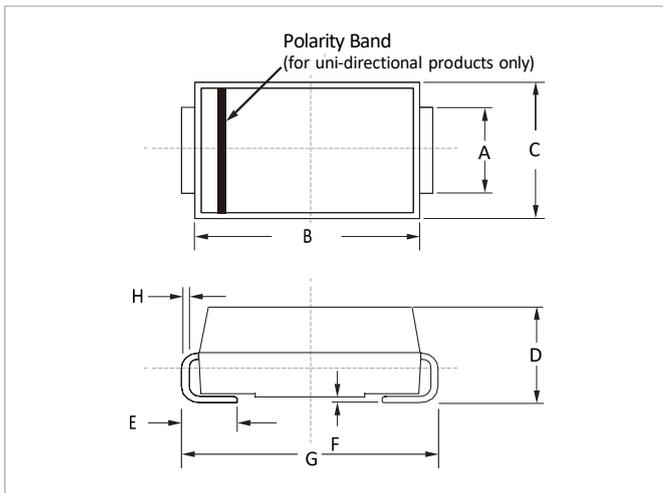
Steady State Power Dissipation Derating Curve

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

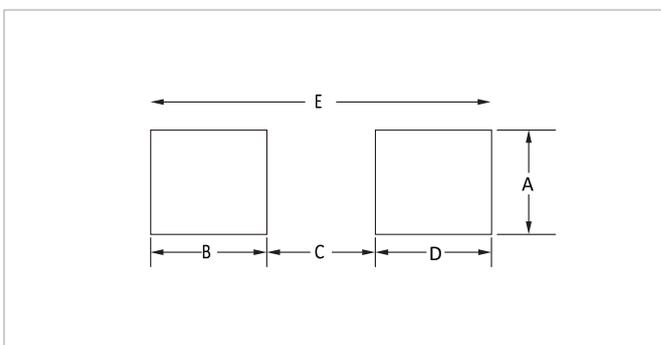


DO-214AB(SMC) Package Information



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.20	0.110	0.126
B	6.60	7.20	0.260	0.283
C	5.70	6.10	0.224	0.240
D	2.15	2.75	0.085	0.108
E	1.00	1.60	0.039	0.063
F	0.02	0.20	0.000	0.008
G	7.60	8.00	0.299	0.315
H	0.15	0.30	0.006	0.012

Recommended Pad Lay Out Dimensions



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.30	-	0.129	-
B	2.40	-	0.094	-
C	-	4.20	-	0.165
D	2.40	-	0.094	-
E	8.20 REF		0.323 REF	

Tape And Reel Specification - SMC

