

Applications

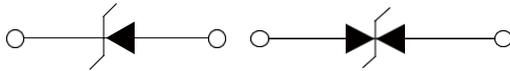
- ◆ Power supply protection
- ◆ Automotive application
- ◆ Industrial application
- ◆ Power management

Features

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

DO-214AA(SMB)

Product and Packing Information



DO-214AA(SMB)

Uni-directional

Bi-directional

Part Number	QTY/Reel	Reel Size
SMB15Jxx(C)A	3,000	13 inch

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

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000us waveform (Note1,Note2)	P _{PPM}	1500	W
Steady State Power Dissipation at $T_A=50^{\circ}\text{C}$ (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	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Junction to Ambient on printed circuit	R _{θJA}	90	°C/W

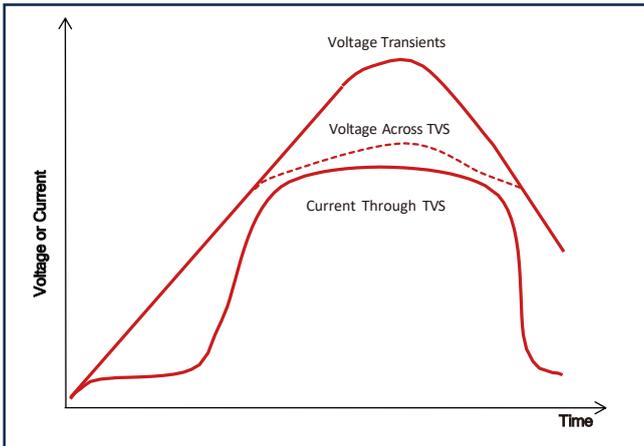
Electrical Characteristics (T_A=25°C)

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 (uA)
SMB15J5.0A	SMB15J5.0CA	GDE	BDE	5.0	6.40	7.00	10	9.2	163.0	800
SMB15J6.0A	SMB15J6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.7	800
SMB15J6.5A	SMB15J6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	134.0	500
SMB15J7.0A	SMB15J7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200
SMB15J7.5A	SMB15J7.5CA	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
SMB15J8.0A	SMB15J8.0CA	GDR	BDR	8.0	8.89	9.83	1	13.6	110.3	50
SMB15J8.5A	SMB15J8.5CA	GDT	BDT	8.5	9.44	10.40	1	14.4	104.2	20
SMB15J9.0A	SMB15J9.0CA	GDV	BDV	9.0	10.00	11.10	1	15.4	97.4	10
SMB15J10A	SMB15J10CA	GDX	BDX	10.0	11.10	12.30	1	17.0	88.3	5
SMB15J11A	SMB15J11CA	GDZ	BDZ	11.0	12.20	13.50	1	18.2	82.5	1
SMB15J12A	SMB15J12CA	GEE	BEE	12.0	13.30	14.70	1	19.9	75.4	1
SMB15J13A	SMB15J13CA	GEG	BEG	13.0	14.40	15.90	1	21.5	69.8	1
SMB15J14A	SMB15J14CA	GEK	BEK	14.0	15.60	17.20	1	23.2	64.7	1
SMB15J15A	SMB15J15CA	GEM	BEM	15.0	16.70	18.50	1	24.4	61.5	1
SMB15J16A	SMB15J16CA	GEP	BEP	16.0	17.80	19.70	1	26.0	57.7	1
SMB15J17A	SMB15J17CA	GER	BER	17.0	18.90	20.90	1	27.6	54.4	1
SMB15J18A	SMB15J18CA	GET	BET	18.0	20.00	22.10	1	29.2	51.4	1
SMB15J20A	SMB15J20CA	GEV	BEV	20.0	22.20	24.50	1	32.4	46.3	1
SMB15J22A	SMB15J22CA	GEX	BEX	22.0	24.40	26.90	1	35.5	42.3	1
SMB15J24A	SMB15J24CA	GEZ	BEZ	24.0	26.70	29.50	1	38.9	38.6	1
SMB15J26A	SMB15J26CA	GFE	BFE	26.0	28.90	31.90	1	42.1	35.7	1
SMB15J28A	SMB15J28CA	GFG	BFG	28.0	31.10	34.40	1	45.4	33.1	1
SMB15J30A	SMB15J30CA	GFK	BFK	30.0	33.30	36.80	1	48.4	31.0	1
SMB15J33A	SMB15J33CA	GFM	BFM	33.0	36.70	40.60	1	53.3	28.2	1
SMB15J36A	SMB15J36CA	GFP	BFP	36.0	40.00	44.20	1	58.1	25.9	1
SMB15J40A	SMB15J40CA	GFR	BFR	40.0	44.40	49.10	1	64.5	23.3	1
SMB15J43A	SMB15J43CA	GFT	BFT	43.0	47.80	52.80	1	69.4	21.7	1
SMB15J45A	SMB15J45CA	GFV	BFV	45.0	50.00	55.30	1	72.7	20.6	1
SMB15J48A	SMB15J48CA	GFX	BFX	48.0	53.30	58.90	1	77.4	19.4	1
SMB15J51A	SMB15J51CA	GFZ	BFZ	51.0	56.70	62.70	1	82.4	18.2	1
SMB15J54A	SMB15J54CA	GGE	BGE	54.0	60.00	66.30	1	87.1	17.3	1
SMB15J58A	SMB15J58CA	GGG	BGG	58.0	64.40	71.20	1	93.6	16.1	1

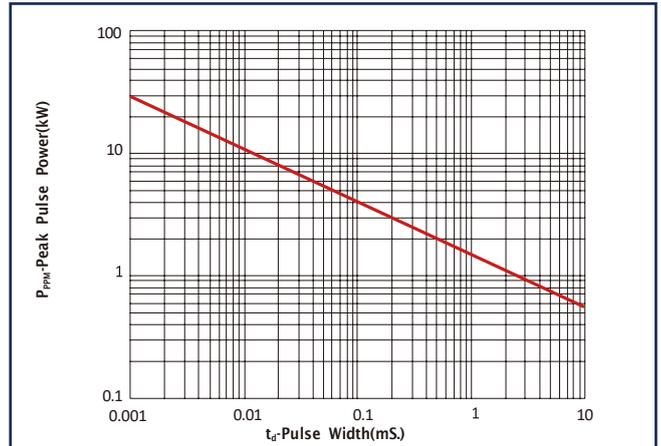
Electrical Characteristics (T_A=25°C)

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 (μA)
SMB15J60A	SMB15J60CA	GGK	BGK	60.0	66.7	73.7	1	96.8	15.5	1
SMB15J64A	SMB15J64CA	GGM	BGM	64.0	71.1	78.6	1	103.0	14.6	1
SMB15J70A	SMB15J70CA	GGP	BGP	70.0	77.8	86.0	1	113.0	13.3	1
SMB15J75A	SMB15J75CA	GGR	BGR	75.0	83.3	92.1	1	121.0	12.4	1
SMB15J78A	SMB15J78CA	GGT	BGT	78.0	86.7	95.8	1	126.0	11.9	1
SMB15J85A	SMB15J85CA	GGV	BGV	85.0	94.4	104.0	1	137.0	11.0	1
SMB15J90A	SMB15J90CA	GGX	BGX	90.0	100.0	111.0	1	146.0	10.3	1
SMB15J100A	SMB15J100CA	GGZ	BGZ	100.0	111.0	123.0	1	162.0	9.3	1
SMB15J110A	SMB15J110CA	GHE	BHE	110.0	122.0	135.0	1	177.0	8.5	1
SMB15J120A	SMB15J120CA	GHG	BHG	120.0	133.0	147.0	1	193.0	7.8	1
SMB15J130A	SMB15J130CA	GHK	BHK	130.0	144.0	159.0	1	209.0	7.2	1
SMB15J150A	SMB15J150CA	GHM	BHM	150.0	167.0	185.0	1	243.0	6.2	1
SMB15J160A	SMB15J160CA	GHP	BHP	160.0	178.0	197.0	1	259.0	5.8	1
SMB15J170A	SMB15J170CA	GHR	BHR	170.0	189.0	209.0	1	275.0	5.5	1
SMB15J180A	SMB15J180CA	GHT	BHT	180.0	201.0	222.0	1	292.0	5.1	1
SMB15J200A	SMB15J200CA	GHV	BHV	200.0	224.0	247.0	1	324.0	4.6	1
SMB15J220A	SMB15J220CA	GHX	BHX	220.0	246.0	272.0	1	356.0	4.2	1
SMB15J250A	SMB15J250CA	GHZ	BHZ	250.0	279.0	309.0	1	405.0	3.7	1
SMB15J300A	SMB15J300CA	GJE	BJE	300.0	335.0	371.0	1	486.0	3.1	1
SMB15J350A	SMB15J350CA	GJG	BJG	350.0	391.0	432.0	1	567.0	2.6	1
SMB15J400A	SMB15J400CA	GJK	BJK	400.0	447.0	494.0	1	648.0	2.3	1
SMB15J440A	SMB15J440CA	GJM	BJM	440.0	492.0	543.0	1	713.0	2.1	1
SMB15J480A	SMB15J480CA	GJP	BJP	480.0	536.0	593.0	1	750.0	2.0	1
SMB15J520A	SMB15J520CA	GJR	BJR	520.0	578.0	640.0	1	762.0	2.0	1
SMB15J550A	SMB15J550CA	GJT	BJT	550.0	615.0	680.0	1	860.0	1.7	1

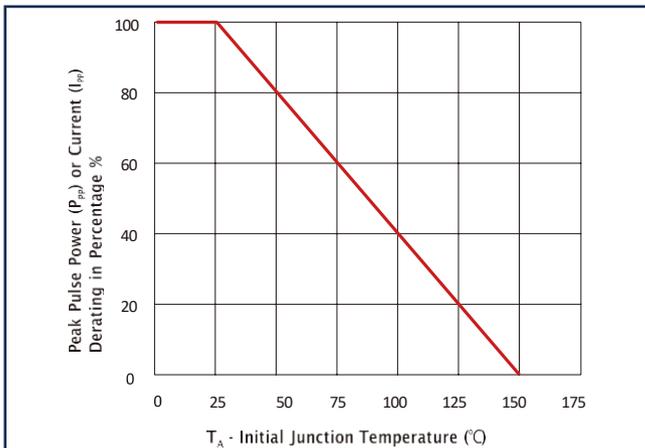
Characteristic Curves



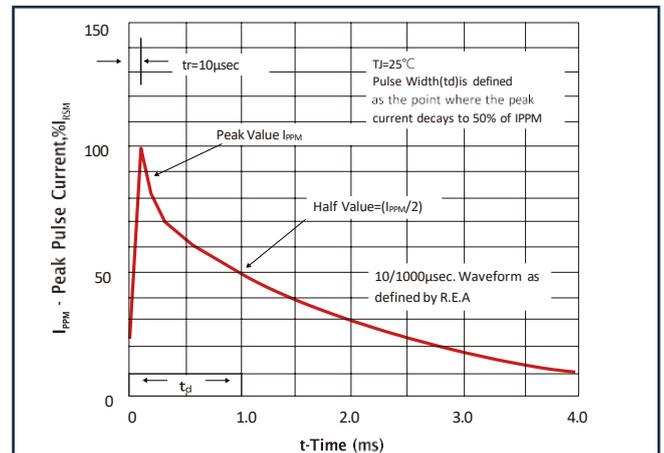
TVS Transients Clamping Waveform



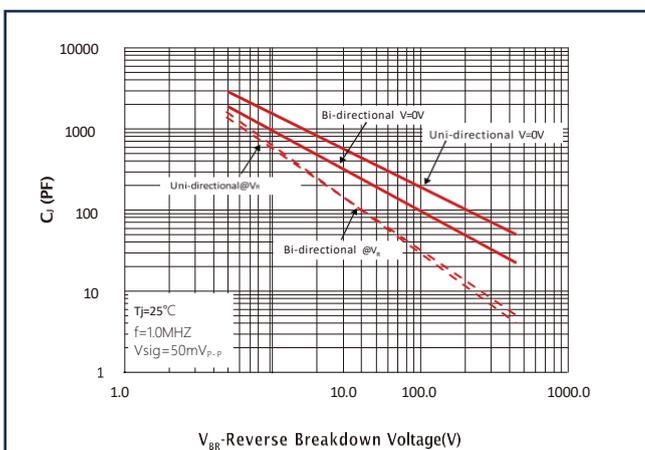
Peak Pulse Power Rating Curve



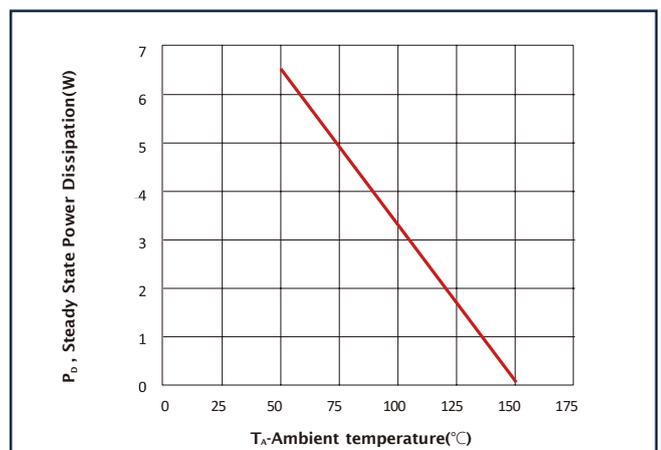
Pulse Derating Curve



Pulse Waveform



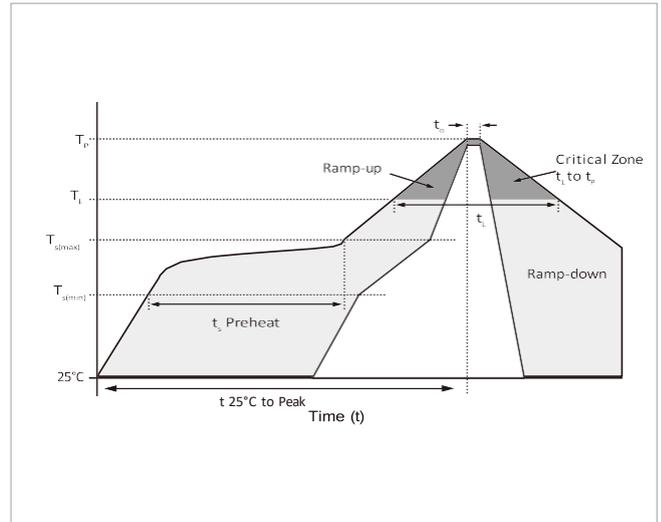
Typical Junction Capacitance



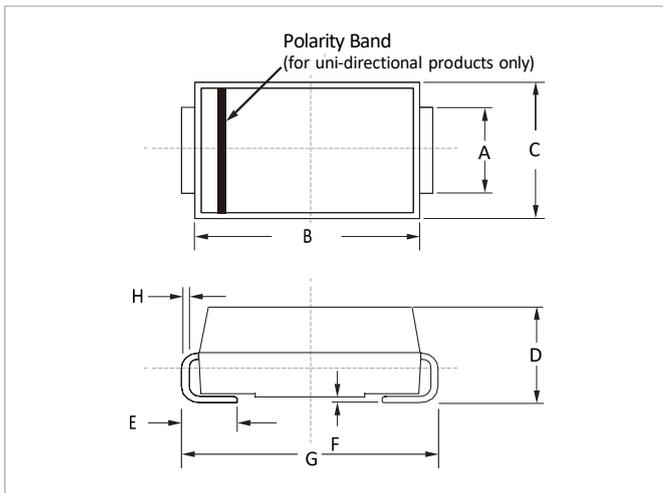
Steady State Power Dissipation Derating Curve

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

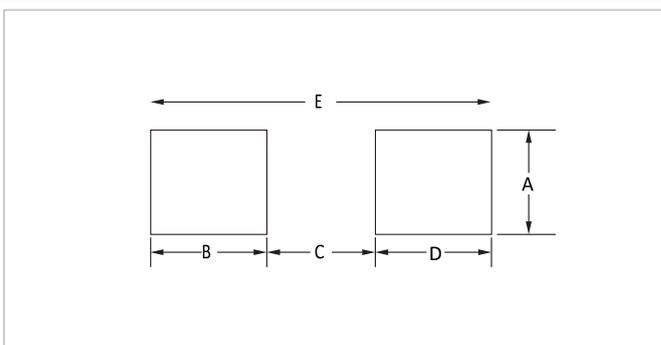


DO-214AA(SMB) Package Information



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.80	2.20	0.071	0.087
B	4.30	4.70	0.170	0.185
C	3.40	3.90	0.134	0.153
D	2.15	2.55	0.085	0.100
E	1.00	1.50	0.039	0.059
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.200	0.216
H	0.15	0.30	0.006	0.012

Recommended Pad Lay Out Dimensions



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.010
D	1.45	-	0.057	-
E	5.60 REF		0.220 REF	

Tape And Reel Specification - SMB

