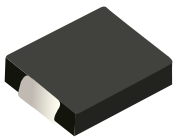
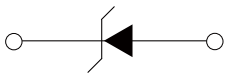
FEATURES

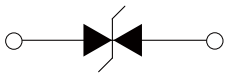
- Low profile package
- Ideal for automated placement
- 3000 Watt peak pulse power capability with a 10/1000μs waveform
- For surface mounted applicatons to optimize board space
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meet AEC-Q101 Requirements



DO-214AB(SMC)



Uni-directionnal



Bi-directionnal

APPLICATIONS

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

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000us waveform (Note1, Note2).	P_{PPM}	3000	Watts
Steady State Power Dissipation at T_L=50°C,Lead lengths.375”(9.5mm) (Note2)	P_D	6.5	Watts

Notes : 1.Non-repetitive current pulse,T_A=25°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	$R_{\theta JA}$	75	°C/W

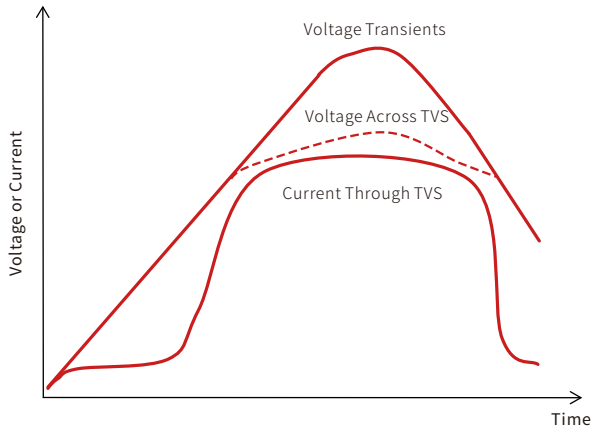
ELECTRICAL CHARACTERISTICS (T_A=25°C)

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)
TPSMDJ5.0A	TPSMDJ5.0CA	RDEA	DDEA	5.0	6.4	7.0	10	9.2	326.1	800
TPSMDJ6.0A	TPSMDJ6.0CA	RDGA	DDGA	6.0	6.67	7.37	10	10.3	291.3	800
TPSMDJ6.5A	TPSMDJ6.5CA	RDKA	DDKA	6.5	7.22	7.98	10	11.2	267.9	500
TPSMDJ7.0A	TPSMDJ7.0CA	PDMA	DDMA	7.0	7.78	8.60	10	12.0	250.0	200
TPSMDJ7.5A	TPSMDJ7.5CA	PDPA	DDPA	7.5	8.33	9.21	1	12.9	232.6	100
TPSMDJ8.0A	TPSMDJ8.0CA	PDRA	DDRA	8.0	8.89	9.83	1	13.6	220.6	50
TPSMDJ8.5A	TPSMDJ8.5CA	PDTA	DDTA	8.5	9.44	10.4	1	14.4	208.3	20
TPSMDJ9.0A	TPSMDJ9.0CA	PDVA	DDVA	9.0	10.0	11.1	1	15.4	194.8	10
TPSMDJ10A	TPSMDJ10CA	PDXA	DDXA	10.0	11.1	12.3	1	17.0	176.5	5
TPSMDJ11A	TPSMDJ11CA	PDZA	DDZA	11.0	12.2	13.5	1	18.2	164.8	2
TPSMDJ12A	TPSMDJ12CA	PEEA	DEEA	12.0	13.3	14.7	1	19.9	150.8	2
TPSMDJ13A	TPSMDJ13CA	PEGA	DEGA	13.0	14.4	15.9	1	21.5	139.5	2
TPSMDJ14A	TPSMDJ14CA	PEKA	DEKA	14.0	15.6	17.2	1	23.2	129.3	2
TPSMDJ15A	TPSMDJ15CA	PEMA	DEMA	15.0	16.7	18.5	1	24.4	123.0	2
TPSMDJ16A	TPSMDJ16CA	PEPA	DEPA	16.0	17.8	19.7	1	26.0	115.4	2
TPSMDJ17A	TPSMDJ17CA	PERA	DERA	17.0	18.9	20.9	1	27.6	108.7	2
TPSMDJ18A	TPSMDJ18CA	PETA	DETA	18.0	20.0	22.1	1	29.2	102.7	2
TPSMDJ20A	TPSMDJ20CA	PEVA	DEVA	20.0	22.2	24.5	1	32.4	92.6	2
TPSMDJ22A	TPSMDJ22CA	PEXA	DEXA	22.0	24.4	26.9	1	35.5	84.5	2
TPSMDJ24A	TPSMDJ24CA	PEZA	DEZA	24.0	26.7	29.5	1	38.9	77.1	2
TPSMDJ26A	TPSMDJ26CA	PFEA	DFEA	26.0	28.9	31.9	1	42.1	71.3	2
TPSMDJ28A	TPSMDJ28CA	PFGA	DFGA	28.0	31.1	34.4	1	45.4	66.1	2
TPSMDJ30A	TPSMDJ30CA	PFKA	DFKA	30.0	33.3	36.8	1	48.4	62.0	2
TPSMDJ33A	TPSMDJ33CA	PFMA	DFMA	33.0	36.7	40.6	1	53.3	56.3	2
TPSMDJ36A	TPSMDJ36CA	PFPA	DFPA	36.0	40.0	44.2	1	58.1	51.6	2
TPSMDJ40A	TPSMDJ40CA	PFRA	DFRA	40.0	44.4	49.1	1	64.5	46.5	2
TPSMDJ43A	TPSMDJ43CA	PFTA	DFTA	43.0	47.8	52.8	1	69.4	43.2	2
TPSMDJ45A	TPSMDJ45CA	PFVA	DFVA	45.0	50.0	55.3	1	72.7	41.3	2
TPSMDJ48A	TPSMDJ48CA	PFXA	DFXA	48.0	53.3	58.9	1	77.4	38.8	2
TPSMDJ51A	TPSMDJ51CA	PFZA	DFZA	51.0	56.7	62.7	1	82.4	36.4	2
TPSMDJ54A	TPSMDJ54CA	RGEA	DGEA	54.0	60.0	66.3	1	87.1	34.4	2
TPSMDJ58A	TPSMDJ58CA	PGGA	DGGA	58.0	64.4	71.2	1	93.6	32.1	2

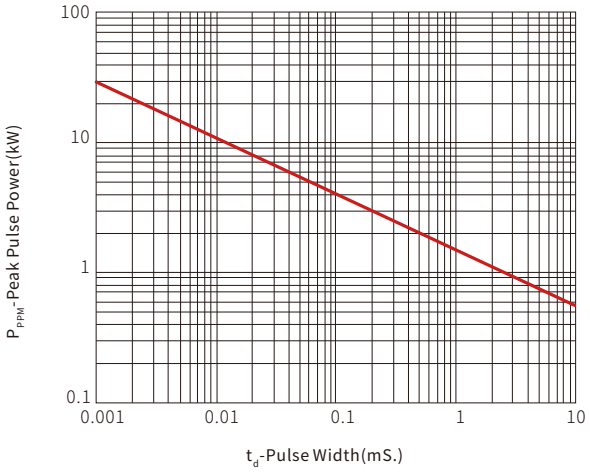
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I_T	Breakdown Voltage Max.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V_{RWM}(V)	V_{BR}(V)	V_{BR}(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(uA)
TPSMDJ60A	TPSMDJ60CA	PGKA	DGKA	60.0	66.7	73.7	1	96.8	31.0	2
TPSMDJ64A	TPSMDJ64CA	PGMA	DGMA	64.0	71.1	78.6	1	103.0	29.1	2
TPSMDJ70A	TPSMDJ70CA	PGPA	DGPA	70.0	77.8	86.0	1	113.0	26.5	2
TPSMDJ75A	TPSMDJ75CA	PGRA	DGRA	75.0	83.3	92.1	1	121.0	24.8	2
TPSMDJ78A	TPSMDJ78CA	PGTA	DGTA	78.0	86.7	95.8	1	126.0	23.8	2
TPSMDJ85A	TPSMDJ85CA	PGVA	DGVA	85.0	94.4	104.0	1	137.0	21.9	2
TPSMDJ90A	TPSMDJ90CA	PGXA	DGXA	90.0	100.0	111.0	1	146.0	20.5	2
TPSMDJ100A	TPSMDJ100CA	PGZA	DGZA	100.0	111.0	123.0	1	162.0	18.5	2
TPSMDJ110A	TPSMDJ110CA	PHEA	DHEA	110.0	122.0	135.0	1	177.0	16.9	2
TPSMDJ120A	TPSMDJ120CA	PHGA	DHGA	120.0	133.0	147.0	1	193.0	15.5	2
TPSMDJ130A	TPSMDJ130CA	PHKA	DHKA	130.0	144.0	159.0	1	209.0	14.4	2
TPSMDJ150A	TPSMDJ150CA	PHMA	DHMA	150.0	167.0	185.0	1	243.0	12.3	2
TPSMDJ160A	TPSMDJ160CA	PHPA	DHPA	160.0	178.0	197.0	1	259.0	11.6	2
TPSMDJ170A	TPSMDJ170CA	PHRA	DHRA	170.0	189.0	209.0	1	275.0	10.9	2
TPSMDJ180A	TPSMDJ180CA	PHTA	DHTA	180.0	201.0	222.0	1	292.0	10.3	2
TPSMDJ190A	TPSMDJ190CA	PHUA	DHUA	190.0	209.0	243.0	1	308.0	9.7	2
TPSMDJ200A	TPSMDJ200CA	PHVA	DHVA	200.0	224.0	247.0	1	324.0	9.3	2
TPSMDJ210A	TPSMDJ210CA	PHWA	DHWA	210.0	231.0	269.0	1	340.0	8.8	2
TPSMDJ220A	TPSMDJ220CA	PKEA	DKEA	220.0	246.0	272.0	1	356.0	8.4	2
TPSMDJ250A	TPSMDJ250CA	PKGA	DKGA	250.0	279.0	309.0	1	405.0	7.4	2
TPSMDJ300A	TPSMDJ300CA	PKKA	DKKA	300.0	335.0	371.0	1	486.0	6.2	2
TPSMDJ350A	TPSMDJ350CA	PKMA	DKMA	350.0	391.0	432.0	1	567.0	5.3	2
TPSMDJ400A	TPSMDJ400CA	PKPA	DKPA	400.0	447.0	494.0	1	648.0	4.6	2
TPSMDJ440A	TPSMDJ440CA	PKRA	DKRA	440.0	492.0	543.0	1	713.0	4.2	2

CHARACTERISTIC CURVES

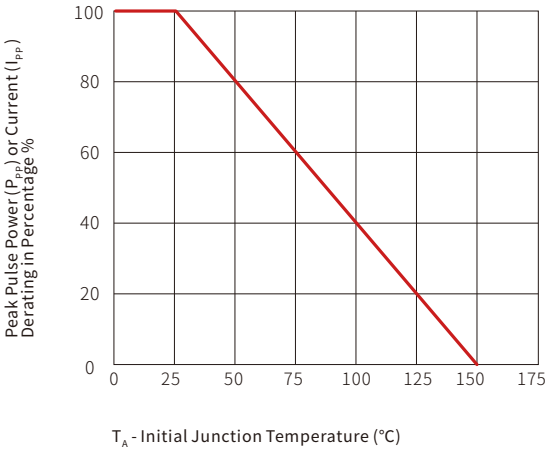
TVS Transients Clamping Waveform



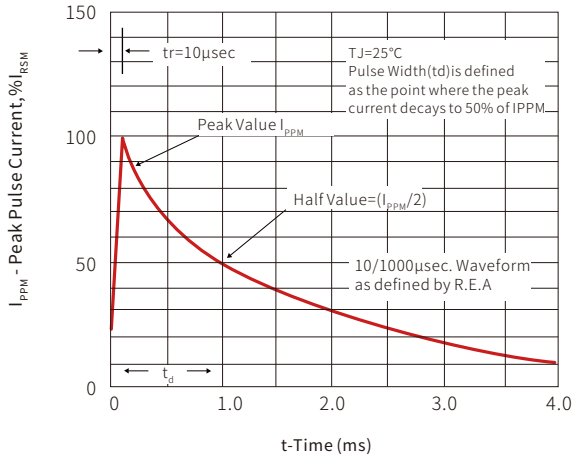
Peak Pulse Power Rating Curve



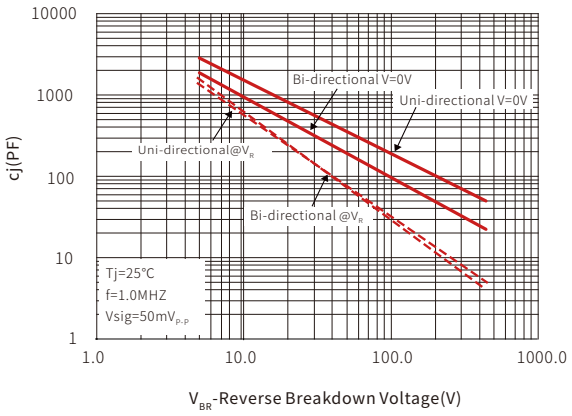
Pulse Derating Curve



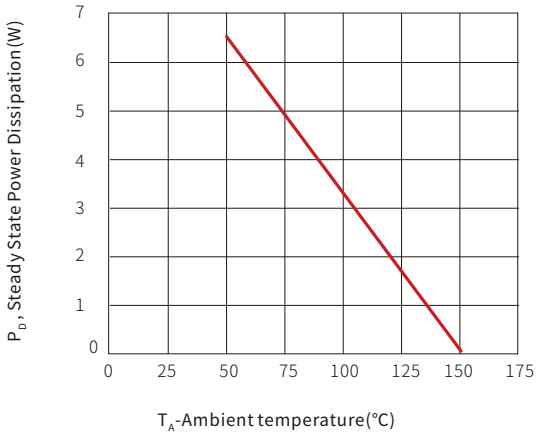
Pulse Waveform



Typical Junction Capacitance

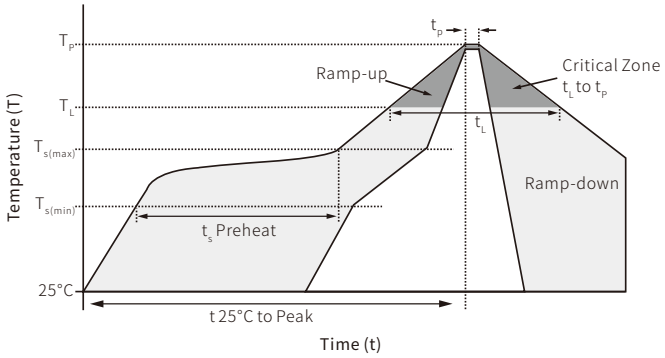


Steady State Power Dissipaton Deraiting Curve

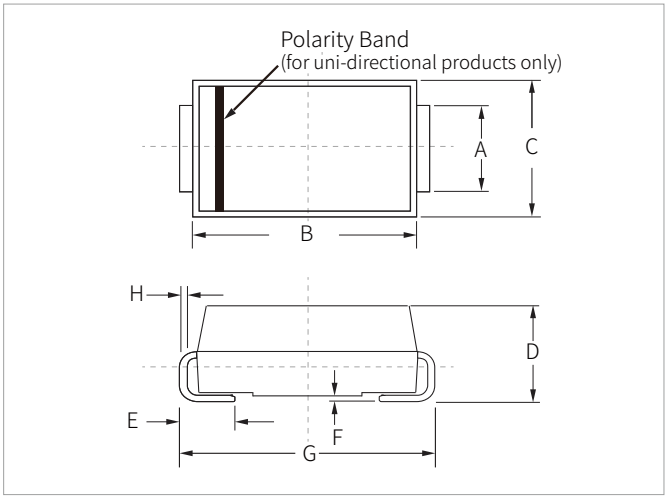


SOLDERING PARAMETERS

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_s)	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_L)	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

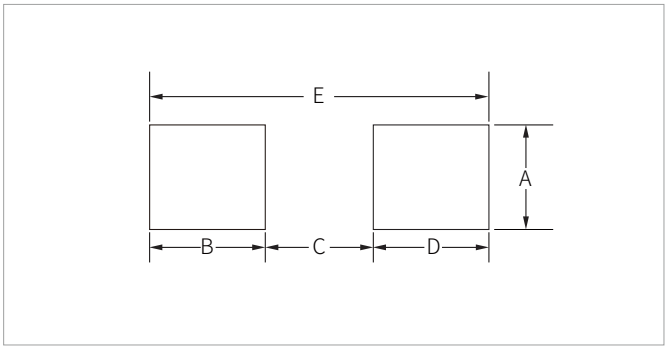


DO-214AB(SMC) PACKAGE INFORMATION



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 LAYOUT 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	8.20REF		0.323REF	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
TPSMDJxx(C)A	DO-214AB(SMC)	3000PCS	13"

Headquarters
No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code
Website
Wechat

To find your local partner within Semiware' s global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.