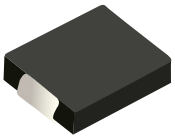
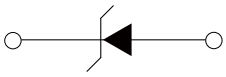
FEATURES

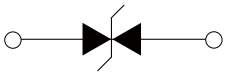
- Low profile package
- Ideal for automated placement
- 5000 Watt peak pulse power capability with a 10/1000μs waveform
- For surface mounted applicatons to optimize board space
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meet AEC-Q101 Requirements



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

MAXIMUMRATINGS (T_A=25°C)

Parameter	Symbo	Value	Unit
Peak Pulse Power Dissipation on 10/1000us waveform (Note1, Note2).	P_{PPM}	5000	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

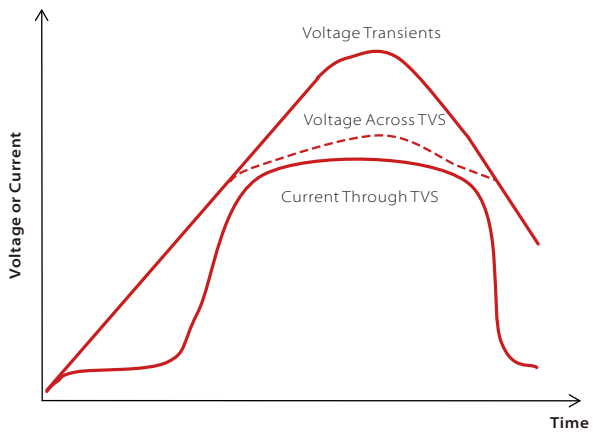
Parameter	Symbol	Value	Unit
Operating Junction Temperature	T_J	-55 to +150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃
Junction to Ambient on printed circuit	$R_{\theta JA}$	75	℃/W

ELECTRICAL CHARACTERISTICS (T_A=25℃)

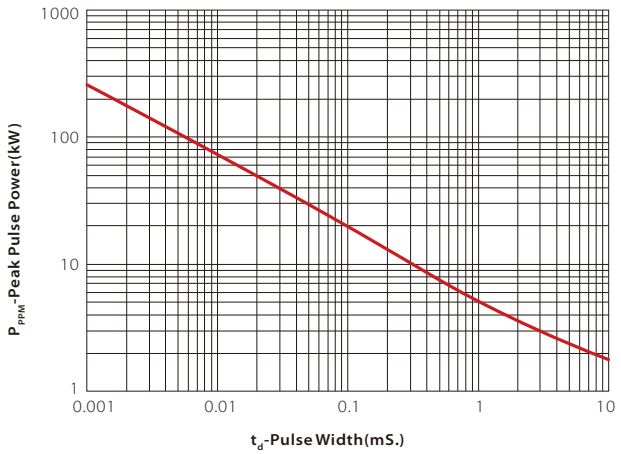
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I_T	Breakdown Voltage Max.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V_{RWM}(V)	V_{BR}(V)	V_{BR}(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(uA)
TP5.0SMDJ11A	TP5.0SMDJ11CA	5SAF	5DAF	11.0	12.20	13.50	1	18.2	275.0	1
TP5.0SMDJ12A	TP5.0SMDJ12CA	5SAG	5DAG	12.0	13.20	14.70	1	19.9	252.0	1
TP5.0SMDJ13A	TP5.0SMDJ13CA	5SAK	5DAK	13.0	14.40	15.90	1	21.5	233.0	1
TP5.0SMDJ14A	TP5.0SMDJ14CA	5SAM	5DAM	14.0	15.60	17.20	1	23.2	216.0	1
TP5.0SMDJ15A	TP5.0SMDJ15CA	5SAP	5DAP	15.0	16.70	18.50	1	24.4	205.0	1
TP5.0SMDJ16A	TP5.0SMDJ16CA	5SAR	5DAR	16.0	17.80	19.70	1	26.0	193.0	1
TP5.0SMDJ18A	TP5.0SMDJ18CA	5SAV	5DAV	18.0	20.00	22.10	1	29.2	172.0	1
TP5.0SMDJ20A	TP5.0SMDJ20CA	5SAZ	5DAZ	20.0	22.20	24.50	1	32.4	155.0	1
TP5.0SMDJ22A	TP5.0SMDJ22CA	5SBE	5DBE	22.0	24.40	26.90	1	35.5	141.0	1
TP5.0SMDJ24A	TP5.0SMDJ24CA	5SBF	5DBF	24.0	26.70	29.50	1	38.9	129.0	1
TP5.0SMDJ26A	TP5.0SMDJ26CA	5SBG	5DBG	26.0	28.90	31.90	1	42.1	119.0	1
TP5.0SMDJ28A	TP5.0SMDJ28CA	5SBK	5DBK	28.0	31.10	34.40	1	45.4	110.0	1
TP5.0SMDJ30A	TP5.0SMDJ30CA	5SBM	5DBM	30.0	33.30	36.80	1	48.4	103.0	1
TP5.0SMDJ33A	TP5.0SMDJ33CA	5SBP	5DBP	33.0	36.70	40.60	1	53.3	93.9	1
TP5.0SMDJ36A	TP5.0SMDJ36CA	5SBR	5DBR	36.0	40.00	44.20	1	58.1	86.1	1
TP5.0SMDJ40A	TP5.0SMDJ40CA	5SBT	5DBT	40.0	44.40	49.10	1	64.5	77.6	1
TP5.0SMDJ43A	TP5.0SMDJ43CA	5SBV	5DBV	43.0	47.80	52.80	1	69.4	72.1	1
TP5.0SMDJ45A	TP5.0SMDJ45CA	5SBX	5DBX	45.0	50.00	55.30	1	72.7	68.8	1
TP5.0SMDJ48A	TP5.0SMDJ48CA	5SBZ	5DBZ	48.0	53.30	58.90	1	77.4	64.7	1
TP5.0SMDJ51A	TP5.0SMDJ51CA	5SCE	5DCE	51.0	56.70	62.70	1	82.4	60.7	1
TP5.0SMDJ54A	TP5.0SMDJ54CA	5SCF	5DCF	54.0	60.00	66.30	1	87.1	57.5	1
TP5.0SMDJ58A	TP5.0SMDJ58CA	5SCG	5DCG	58.0	64.40	71.20	1	93.6	53.5	1

CHARACTERISTIC CURVES

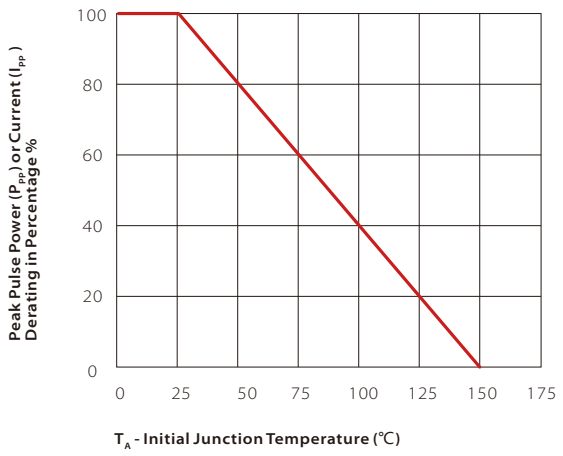
TVS Transients Clamping Waveform



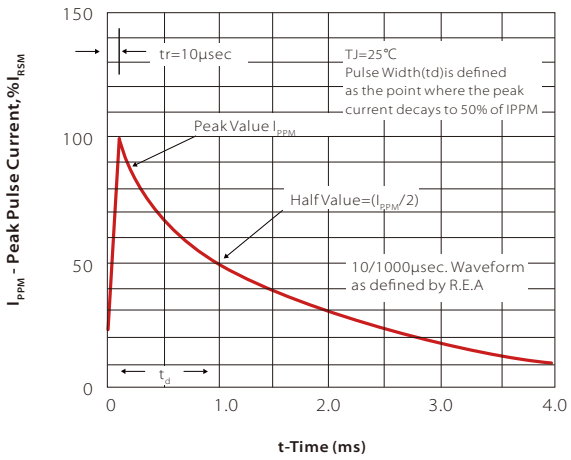
Peak Pulse Power Rating Curve



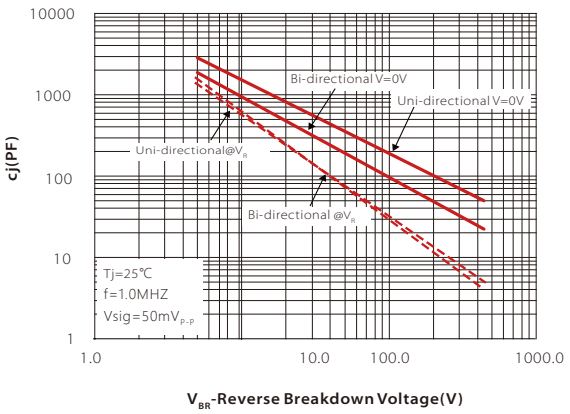
Pulse Derating Curve



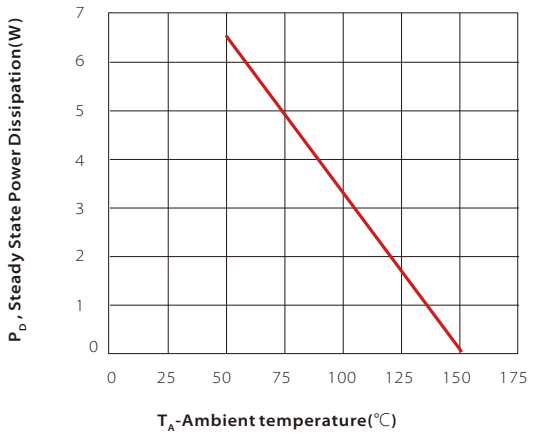
Pulse Waveform



Typical Junction Capacitance

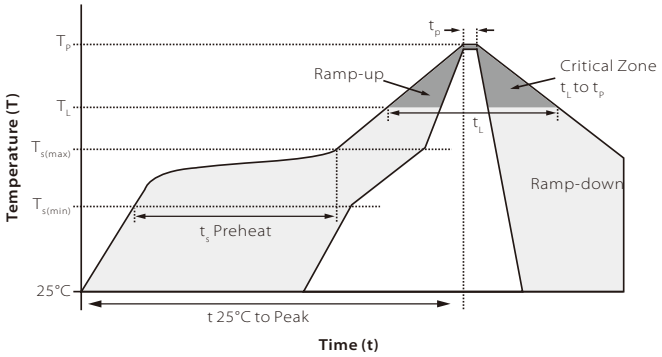


Steady State Power Dissipaton Deraiting Curve

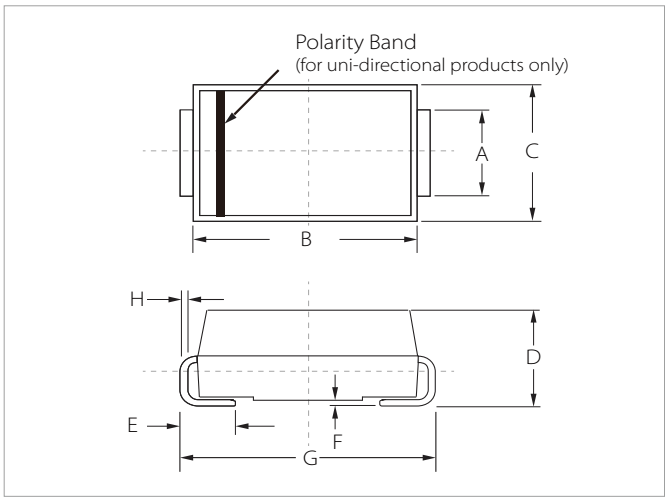


SOLDERING PARAMETERS

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

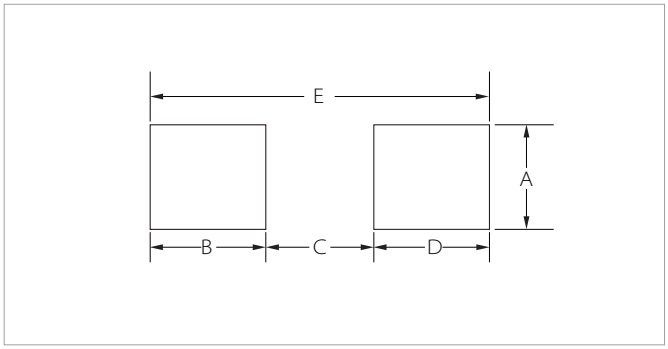


DO-214AB(SMC) PACKAGE INFORMATION



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
TP5.0SMDJxx(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 network: www.semiware.com