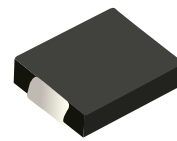
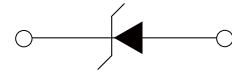


FEATURES

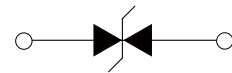
- | Low profile package
- | Ideal for automated placement
- | 1500 Watt peak pulse power capability with a 10/1000 μ s waveform
- | For surface mounted applications to optimize board space
- | Excellent clamping capability
- | Very fast response time
- | Low incremental surge resistance
- | Meet AEC-Q101 Requirements



DO-214AB(SMC)



Uni-directional



Bi-directional

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

Parameter	Symbo	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note1, Note2).	P_{PPM}	1500	Watts
Steady State Power Dissipation at $T_L=50^{\circ}\text{C}$, Lead lengths.375"(9.5mm) (Note2)	P_D	6.5	Watts

Notes : 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	$^{\circ}\text{C}/\text{W}$

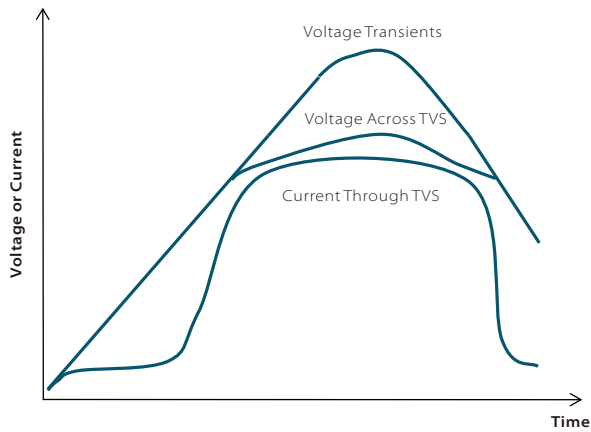
ELECTRICAL CHARACTERISTICS (T_A=25°C)

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)
TPSMCJ11A	TPSMCJ11CA	GDZA	BDZA	11.0	12.20	13.50	1	18.2	82.5	1
TPSMCJ12A	TPSMCJ12CA	GEEA	BEEA	12.0	13.30	14.70	1	19.9	75.4	1
TPSMCJ13A	TPSMCJ13CA	GEGA	BEGA	13.0	14.40	15.90	1	21.5	69.8	1
TPSMCJ14A	TPSMCJ14CA	GEKA	BEKA	14.0	15.60	17.20	1	23.2	64.7	1
TPSMCJ15A	TPSMCJ15CA	GEMA	BEMA	15.0	16.70	18.50	1	24.4	61.5	1
TPSMCJ16A	TPSMCJ16CA	GEPA	BEPA	16.0	17.80	19.70	1	26.0	57.7	1
TPSMCJ18A	TPSMCJ18CA	GETA	BETA	18.0	20.00	22.10	1	29.2	51.4	1
TPSMCJ20A	TPSMCJ20CA	GEVA	BEVA	20.0	22.20	24.50	1	32.4	46.3	1
TPSMCJ22A	TPSMCJ22CA	GEXA	BEXA	22.0	24.40	26.90	1	35.5	42.3	1
TPSMCJ24A	TPSMCJ24CA	GEZA	BEZA	24.0	26.70	29.50	1	38.9	38.6	1
TPSMCJ26A	TPSMCJ26CA	GFEA	BFEA	26.0	28.90	31.90	1	42.1	35.7	1
TPSMCJ28A	TPSMCJ28CA	GFGA	BFGA	28.0	31.10	34.40	1	45.4	33.1	1
TPSMCJ30A	TPSMCJ30CA	GFKA	BFKA	30.0	33.30	36.80	1	48.4	31.0	1
TPSMCJ33A	TPSMCJ33CA	GFMA	BFMA	33.0	36.70	40.60	1	53.3	28.2	1
TPSMCJ36A	TPSMCJ36CA	GFPA	BFPA	36.0	40.00	44.20	1	58.1	25.9	1
TPSMCJ40A	TPSMCJ40CA	GFRA	BFRA	40.0	44.40	49.10	1	64.5	23.3	1
TPSMCJ43A	TPSMCJ43CA	GFTA	BFTA	43.0	47.80	52.80	1	69.4	21.7	1
TPSMCJ45A	TPSMCJ45CA	GFVA	BFVA	45.0	50.00	55.30	1	72.7	20.6	1
TPSMCJ48A	TPSMCJ48CA	GFXA	BFXA	48.0	53.30	58.90	1	77.4	19.4	1
TPSMCJ51A	TPSMCJ51CA	GFZA	BFZA	51.0	56.70	62.70	1	82.4	18.2	1
TPSMCJ54A	TPSMCJ54CA	GGEA	BGEA	54.0	60.00	66.30	1	87.1	17.3	1
TPSMCJ58A	TPSMCJ58CA	GGGA	BGGA	58.0	64.40	71.20	1	93.6	16.1	1
TPSMCJ60A	TPSMCJ60CA	GGKA	BGKA	60.0	66.70	73.70	1	96.8	15.5	1
TPSMCJ64A	TPSMCJ64CA	GGMA	BGMA	64.0	71.10	78.60	1	103.0	14.6	1
TPSMCJ70A	TPSMCJ70CA	GGPA	BGPA	70.0	77.80	86.00	1	113.0	13.3	1
TPSMCJ75A	TPSMCJ75CA	GGRA	BGRA	75.0	83.30	92.10	1	121.0	12.4	1
TPSMCJ78A	TPSMCJ78CA	GGTA	BGTA	78.0	86.70	95.80	1	126.0	11.9	1
TPSMCJ85A	TPSMCJ85CA	GGVA	BGVA	85.0	94.40	104.00	1	137.0	11.0	1
TPSMCJ90A	TPSMCJ90CA	GGXA	BGXA	90.0	100.00	111.00	1	146.0	10.3	1
TPSMCJ100A	TPSMCJ100CA	GGZA	BGZA	100.0	111.00	123.00	1	162.0	9.3	1

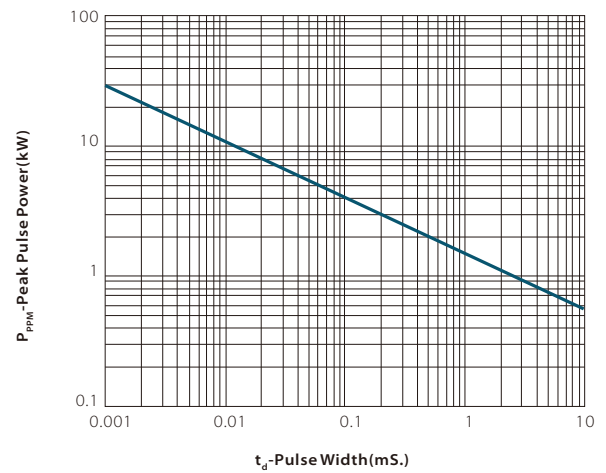
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I _T	Breakdown Voltage Max.@I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
TPSMCJ110A	TPSMCJ110CA	GHEA	BHEA	110.0	122.00	135.00	1	177.0	8.5	1
TPSMCJ120A	TPSMCJ120CA	GHGA	BHGA	120.0	133.00	147.00	1	193.0	7.8	1
TPSMCJ130A	TPSMCJ130CA	GHKA	BHKA	130.0	144.00	159.00	1	209.0	7.2	1
TPSMCJ150A	TPSMCJ150CA	GHMA	BHMA	150.0	167.00	185.00	1	243.0	6.2	1
TPSMCJ160A	TPSMCJ160CA	GHPA	BHPA	160.0	178.00	197.00	1	259.0	5.8	1
TPSMCJ170A	TPSMCJ170CA	GHRA	BHRA	170.0	189.00	209.00	1	275.0	5.5	1
TPSMCJ180A	TPSMCJ180CA	GHTA	BHTA	180.0	201.00	222.00	1	292.0	5.1	1
TPSMCJ200A	TPSMCJ200CA	GHVA	BHVA	200.0	224.00	247.00	1	324.0	4.6	1
TPSMCJ220A	TPSMCJ220CA	GHXA	BHXA	220.0	246.00	272.00	1	356.0	4.2	1
TPSMCJ250A	TPSMCJ250CA	GHZA	BHZA	250.0	279.00	309.00	1	405.0	3.7	1
TPSMCJ300A	TPSMCJ300CA	GJEA	BJEA	300.0	335.00	371.00	1	486.0	3.1	1
TPSMCJ350A	TPSMCJ350CA	GJGA	BJGA	350.0	391.00	432.00	1	567.0	2.6	1
TPSMCJ400A	TPSMCJ400CA	GJKA	BJKA	400.0	447.00	494.00	1	648.0	2.3	1
TPSMCJ440A	TPSMCJ440CA	GJMA	BJMA	440.0	492.00	543.00	1	713.0	2.1	1

CHARACTERISTIC CURVES

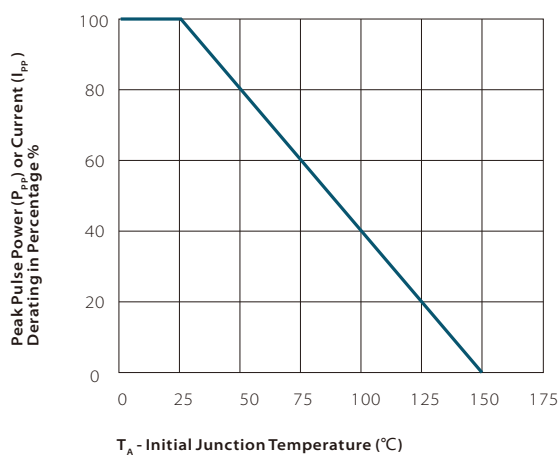
TVS Transients Clamping Waveform



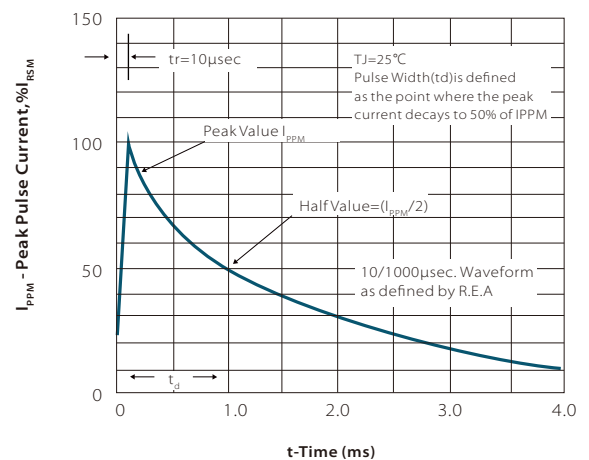
Peak Pulse Power Rating Curve

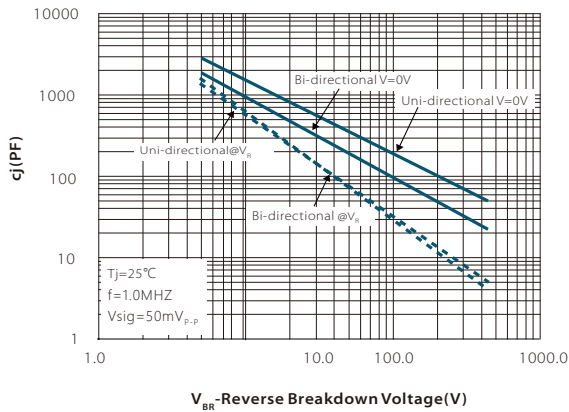
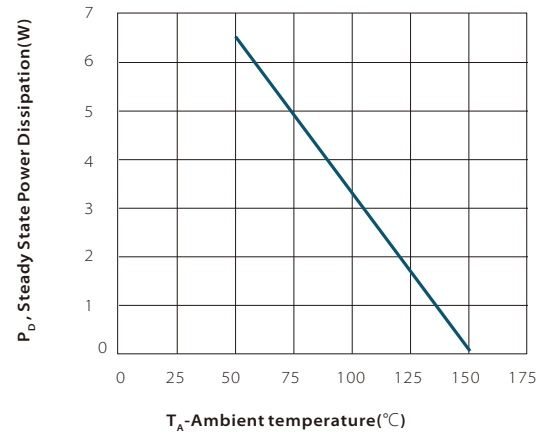


Pulse Derating Curve



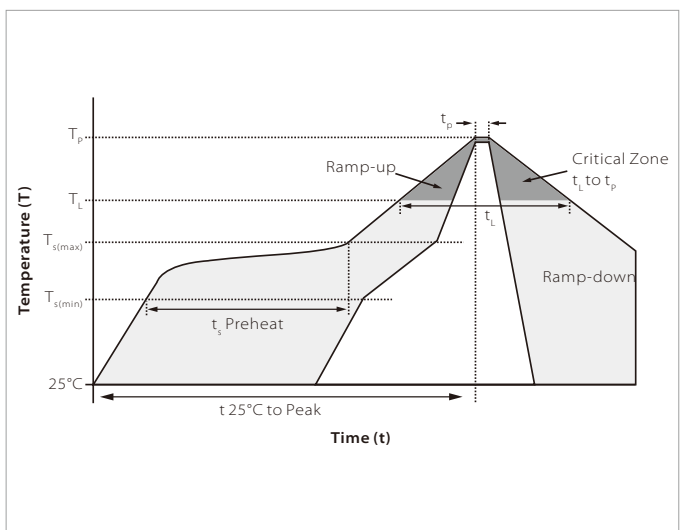
Pulse Waveform



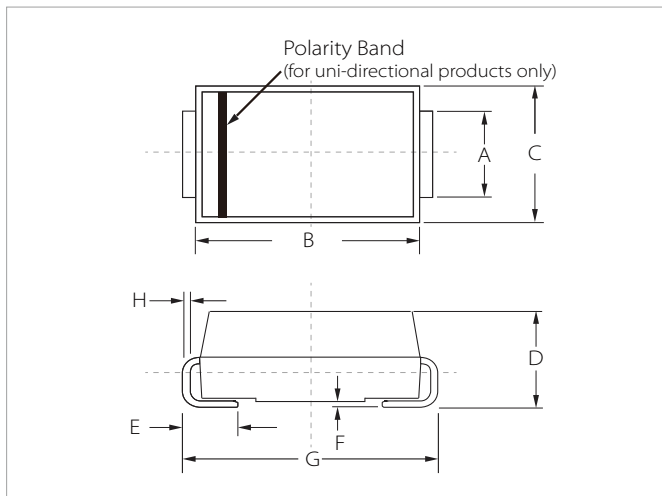
Typical Junction Capacitance

Steady State Power Dissipation Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150 $^\circ\text{C}$
	Temperature Max ($T_{s(max)}$)	200 $^\circ\text{C}$
	Time (min to max) (t_2)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3 $^\circ\text{C}/\text{second}$ max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 $^\circ\text{C}/\text{second}$ max
Reflow	Temperature (T_L) (Liquidus)	217 $^\circ\text{C}$
	Time (min to max) (t_1)	60 – 150 seconds
Peak Temperature (T_p)		260 $^\circ\text{C}$
Time within 5 $^\circ\text{C}$ of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6 $^\circ\text{C}/\text{second}$ max
Time 25 $^\circ\text{C}$ to peak Temperature (T_p)		8 minutes max.
Do not exceed		260 $^\circ\text{C}$

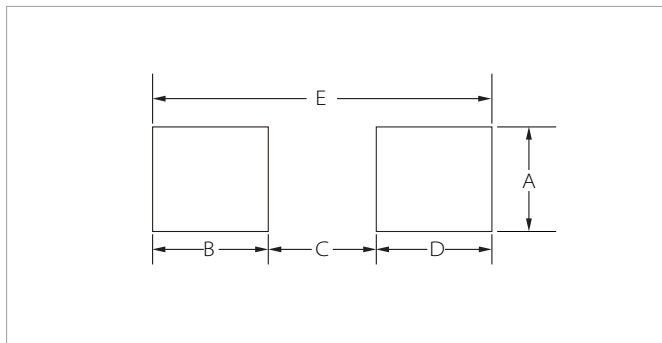


DO-214AB(SMC) PACKAGE INFORMATION



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
TPSMCJxx(C)A	DO-214AB(SMC)	3000PCS	13"

To find your local partner within Semiwell's website : www.semiwell.com.cn

© 2023 Semiwell Microelectronics Co.,Ltd.

The content of this document has been carefully checked and understood. However, neither Semiwell 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. Semiwell 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 Semiwell. Latest publications and a complete disclaimer can be downloaded from the Semiwell website. All trademarks recognized.