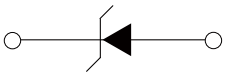
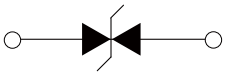
FEATURES

- Low profile package
- Ideal for automated placement
- 400 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-214AC(SMA)



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}	400	Watts
Steady State Power Dissipation at T_L=75°C,Lead lengths.375”(9.5mm) (Note2)	P_D	3.3	Watts

Notes : 1.Non-repetitive current pulse,T_A=25°C.
2.Mounted on 5.0mm x 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	$R_{\theta JA}$	120	°C/W

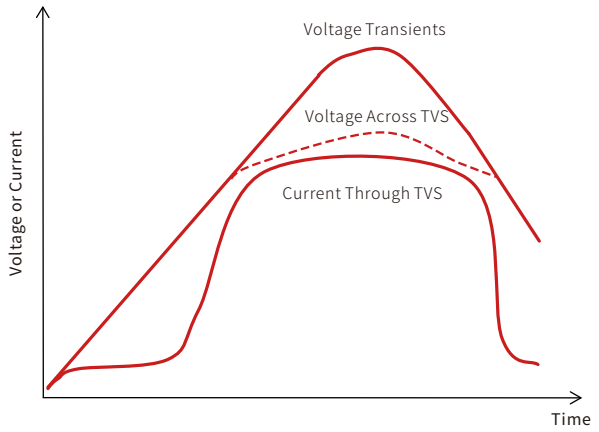
ELECTRICAL CHARACTERISTICS (T_A=25℃)

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)
TPSMAJ5.0A	TPSMAJ5.0CA	AEA	WEA	5.0	6.40	7.00	10	9.2	43.5	800
TPSMAJ6.0A	TPSMAJ6.0CA	AGA	WGA	6.0	6.67	7.37	10	10.3	38.8	800
TPSMAJ6.5A	TPSMAJ6.5CA	AKA	WKA	6.5	7.22	7.98	10	11.2	35.7	500
TPSMAJ7.0A	TPSMAJ7.0CA	AMA	WMA	7.0	7.78	8.60	10	12.0	33.3	200
TPSMAJ7.5A	TPSMAJ7.5CA	APA	WPA	7.5	8.33	9.21	1	12.9	31.0	100
TPSMAJ8.0A	TPSMAJ8.0CA	ARA	WRA	8.0	8.89	9.83	1	13.6	29.4	50
TPSMAJ8.5A	TPSMAJ8.5CA	ATA	WTA	8.5	9.44	10.40	1	14.4	27.8	20
TPSMAJ9.0A	TPSMAJ9.0CA	AVA	WVA	9.0	10.00	11.10	1	15.4	26.0	10
TPSMAJ10A	TPSMAJ10CA	AXA	WXA	10.0	11.10	12.30	1	17.0	23.5	5
TPSMAJ11A	TPSMAJ11CA	AZA	WZA	11.0	12.20	13.50	1	18.2	22.0	1
TPSMAJ12A	TPSMAJ12CA	BEA	XEA	12.0	13.30	14.70	1	19.9	20.1	1
TPSMAJ13A	TPSMAJ13CA	BGA	XGA	13.0	14.40	15.90	1	21.5	18.6	1
TPSMAJ14A	TPSMAJ14CA	BKA	XKA	14.0	15.60	17.20	1	23.2	17.2	1
TPSMAJ15A	TPSMAJ15CA	BMA	XMA	15.0	16.70	18.50	1	24.4	16.4	1
TPSMAJ16A	TPSMAJ16CA	BPA	XPA	16.0	17.80	19.70	1	26.0	15.4	1
TPSMAJ17A	TPSMAJ17CA	BRA	XRA	17.0	18.90	20.90	1	27.6	14.5	1
TPSMAJ18A	TPSMAJ18CA	BTA	XTA	18.0	20.00	22.10	1	29.2	13.7	1
TPSMAJ20A	TPSMAJ20CA	BVA	XVA	20.0	22.20	24.50	1	32.4	12.3	1
TPSMAJ22A	TPSMAJ22CA	BXA	XXA	22.0	24.40	26.90	1	35.5	11.3	1
TPSMAJ24A	TPSMAJ24CA	BZA	XZA	24.0	26.70	29.50	1	38.9	10.3	1
TPSMAJ26A	TPSMAJ26CA	CEA	YEA	26.0	28.90	31.90	1	42.1	9.5	1
TPSMAJ28A	TPSMAJ28CA	CGA	YGA	28.0	31.10	34.40	1	45.4	8.8	1
TPSMAJ30A	TPSMAJ30CA	CKA	YKA	30.0	33.30	36.80	1	48.4	8.3	1
TPSMAJ33A	TPSMAJ33CA	CMA	YMA	33.0	36.70	40.60	1	53.3	7.5	1
TPSMAJ36A	TPSMAJ36CA	CPA	YPA	36.0	40.00	44.20	1	58.1	6.9	1
TPSMAJ40A	TPSMAJ40CA	CRA	YRA	40.0	44.40	49.10	1	64.5	6.2	1
TPSMAJ43A	TPSMAJ43CA	CTA	YTA	43.0	47.80	52.80	1	69.4	5.8	1
TPSMAJ45A	TPSMAJ45CA	CVA	YVA	45.0	50.00	55.30	1	72.7	5.5	1
TPSMAJ48A	TPSMAJ48CA	CXA	YXA	48.0	53.30	58.90	1	77.4	5.2	1
TPSMAJ51A	TPSMAJ51CA	CZA	YZA	51.0	56.70	62.70	1	82.4	4.9	1
TPSMAJ54A	TPSMAJ54CA	REA	ZEA	54.0	60.00	66.30	1	87.1	4.6	1
TPSMAJ58A	TPSMAJ58CA	RGA	ZGA	58.0	64.40	71.20	1	93.6	4.3	1

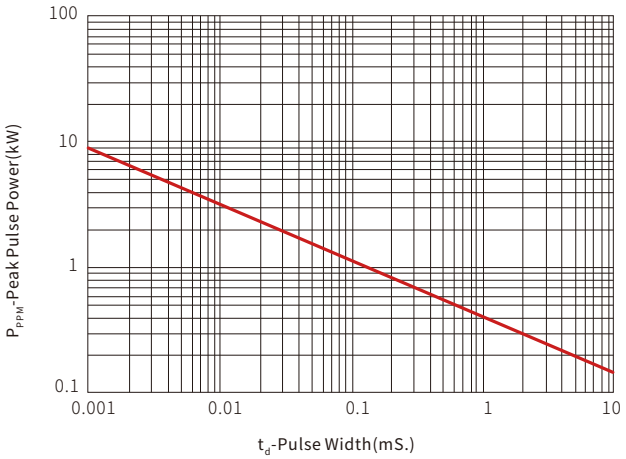
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I_T	Breakdown Voltage Max.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V_{RWM}(V)	V_{BR}(V)	V_{BR}(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(uA)
TPSMAJ60A	TPSMAJ60CA	RKA	ZKA	60.0	66.70	73.70	1	96.8	4.1	1
TPSMAJ64A	TPSMAJ64CA	RMA	ZMA	64.0	71.10	78.60	1	103.0	3.9	1
TPSMAJ70A	TPSMAJ70CA	RPA	ZPA	70.0	77.80	86.00	1	113.0	3.5	1
TPSMAJ75A	TPSMAJ75CA	RRA	ZRA	75.0	83.30	92.10	1	121.0	3.3	1
TPSMAJ78A	TPSMAJ78CA	RTA	ZTA	78.0	86.70	95.80	1	126.0	3.2	1
TPSMAJ85A	TPSMAJ85CA	RVA	ZVA	85.0	94.40	104.00	1	137.0	2.9	1
TPSMAJ90A	TPSMAJ90CA	RXA	ZXA	90.0	100.00	111.00	1	146.0	2.7	1
TPSMAJ100A	TPSMAJ100CA	RZA	ZZA	100.0	111.00	123.00	1	162.0	2.5	1
TPSMAJ110A	TPSMAJ110CA	SEA	VEA	110.0	122.00	135.00	1	177.0	2.3	1
TPSMAJ120A	TPSMAJ120CA	SGA	VGA	120.0	133.00	147.00	1	193.0	2.1	1
TPSMAJ130A	TPSMAJ130CA	SKA	VKA	130.0	144.00	159.00	1	209.0	1.9	1
TPSMAJ150A	TPSMAJ150CA	SMA	VMA	150.0	167.00	185.00	1	243.0	1.6	1
TPSMAJ160A	TPSMAJ160CA	SPA	VPA	160.0	178.00	197.00	1	259.0	1.5	1
TPSMAJ170A	TPSMAJ170CA	SRA	VRA	170.0	189.00	209.00	1	275.0	1.5	1
TPSMAJ180A	TPSMAJ180CA	STA	VTA	180.0	201.00	222.00	1	292.0	1.4	1
TPSMAJ200A	TPSMAJ200CA	SVA	VVA	200.0	224.00	247.00	1	324.0	1.2	1
TPSMAJ220A	TPSMAJ220CA	SXA	VXA	220.0	246.00	272.00	1	356.0	1.1	1
TPSMAJ250A	TPSMAJ250CA	SZA	VZA	250.0	279.00	309.00	1	405.0	1.0	1
TPSMAJ300A	TPSMAJ300CA	TEA	UEA	300.0	335.00	371.00	1	486.0	0.8	1
TPSMAJ350A	TPSMAJ350CA	TGA	UGA	350.0	391.00	432.00	1	567.0	0.7	1
TPSMAJ400A	TPSMAJ400CA	TKA	UKA	400.0	447.00	494.00	1	648.0	0.6	1
TPSMAJ440A	TPSMAJ440CA	TMA	UMA	440.0	492.00	543.00	1	713.0	0.6	1

CHARACTERISTIC CURVES

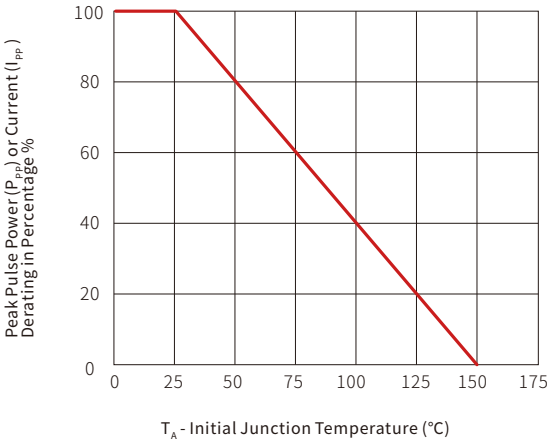
TVS Transients Clamping Waveform



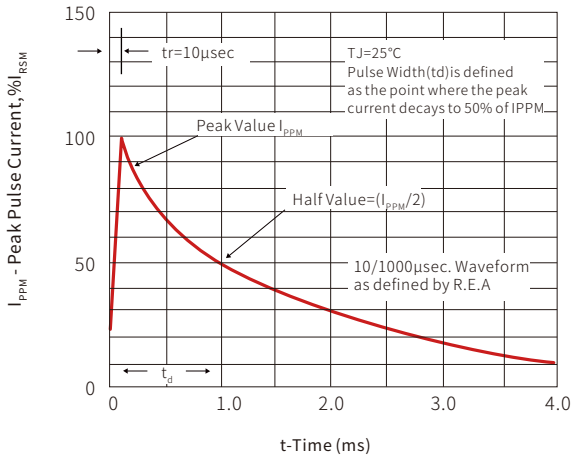
Peak Pulse Power Rating Curve



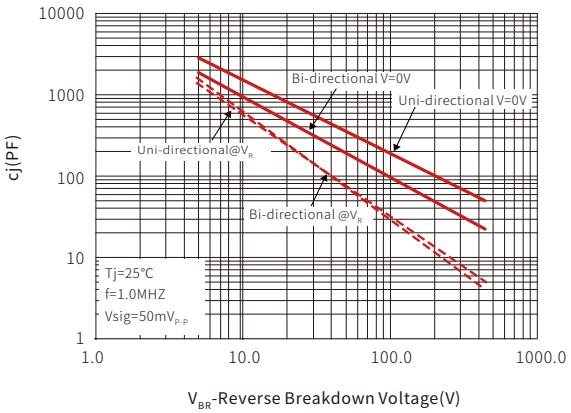
Pulse Derating Curve



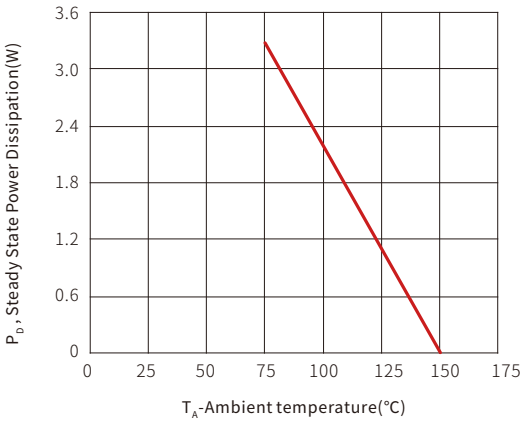
Pulse Waveform



Typical Junction Capacitance

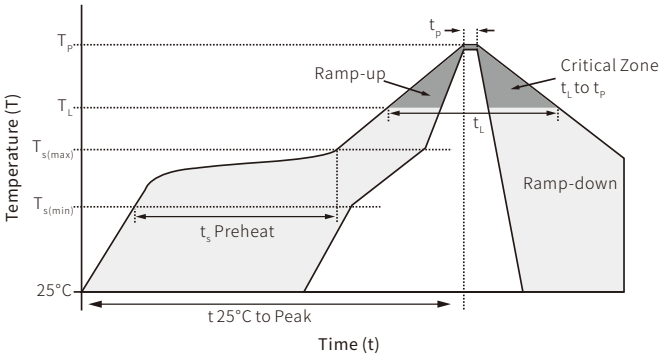


Steady State Power Dissipaton Deraiting Curve

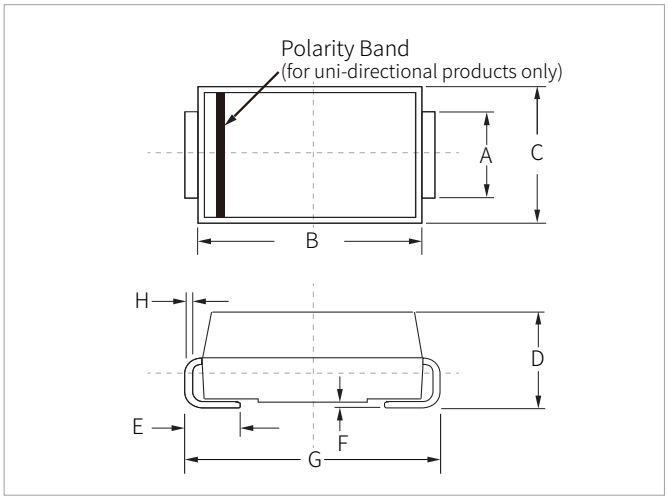


SOLDERING PARAMETERS

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

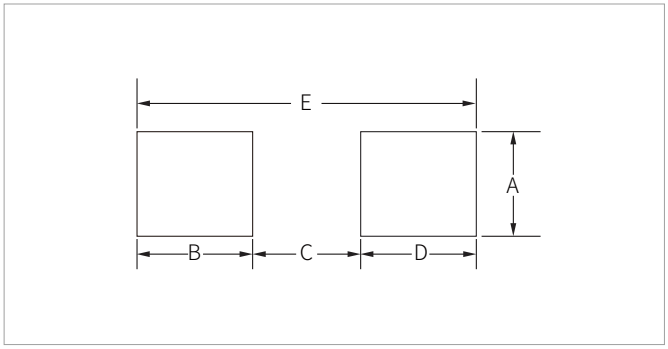


DO-214AC(SMA) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.20	1.60	0.047	0.063
B	4.20	4.60	0.165	0.181
C	2.40	2.80	0.094	0.110
D	2.00	2.40	0.079	0.094
E	0.76	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	4.85	5.25	0.191	0.207
H	0.15	0.30	0.006	0.012

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.63	-	0.064	-
B	1.45	-	0.057	-
C	-	2.80	-	0.090
D	1.45	-	0.057	-
E	5.28REF		0.208REF	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
TPSMAJxx(C)A	DO-214AC(SMA)	5000PCS	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

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