

FEATURES

- | Glass passivated chip junction
- | Ideal for automated placement
- | Low forward voltage drop
- | Meet AEC-Q101 Requirements



DO-214AC(SMA)



Schematic Symbol

MECHANICAL DATA

- | Case:SMA Molded plastic
- | Epoxy: UL 94V-0 rate flame retardant

APPROVALS

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

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Symbol	Parameter	M1Q	M2Q	M3Q	M4Q	M5Q	M6Q	M7Q	Unit
	Marking	M1	M2	M3	M4	M5	M6	M7	
V _{RRM}	Maximum repetitive peak reverse voltage	50	100	200	400	600	800	1000	V
V _{RMS}	Maximum RMS voltage	35	70	140	280	420	560	700	
V _{DC}	Maximum DC blocking voltage	50	100	200	400	600	800	1000	
I _{F(AV)}	Maximum average forward rectified current	1.0							A
I _{FSM}	Non-repetitive peak forward surge current 8.3 ms singlehalf sine-wave	30							
V _F	Maximum forward voltage I _F =1A	1.1							V
I _R	Maximum reverse current @ rated V _R	T _J =25°C		5					μA
		T _J =125°C		50					
t _{rr}	Typical reverse recovery time (Note 2)	2.0							μs
C _J	Typical junction capacitance (Note 3)	12							pF
E _{RSM}	Non-repetitive peak reverse avalanche energy at 25°C, I _{AS} =1A, L=10mH	5							mJ
R _{θJL}	Typical thermal resistance	27					30		°C/W
R _{θJA}	Typical thermal resistance	75					85		°C/W
T _J	Operating junction temperature range	-55~+150							°C
T _{STG}	Storage temperature range	-55~+150							°C

Note 1: Pulse test with PW=300μs, 1% duty cycle

 Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

CHARACTERISTIC CURVES

Fig. 1- Forward Current Derating Curve

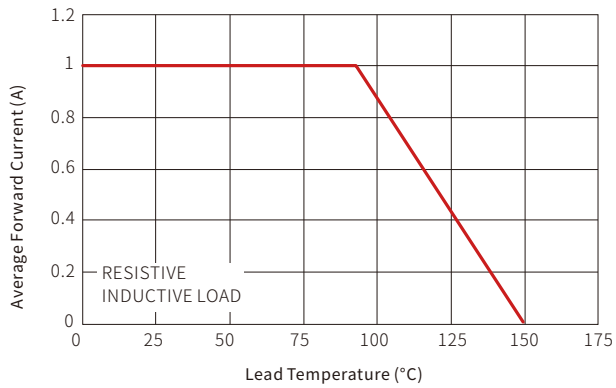


Fig. 2-Typical Reverse Characteristics

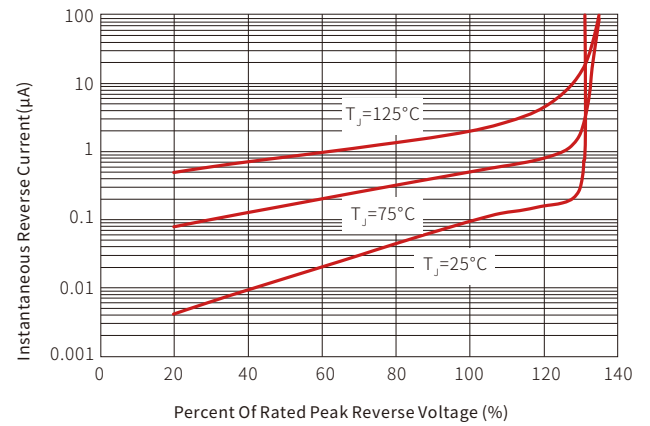


Fig. 3-Maximum Non-repetitive Forward Surge Current

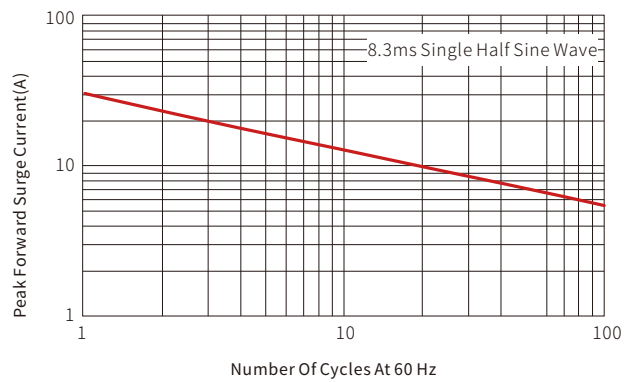


Fig. 4-Typical Forward Characteristics

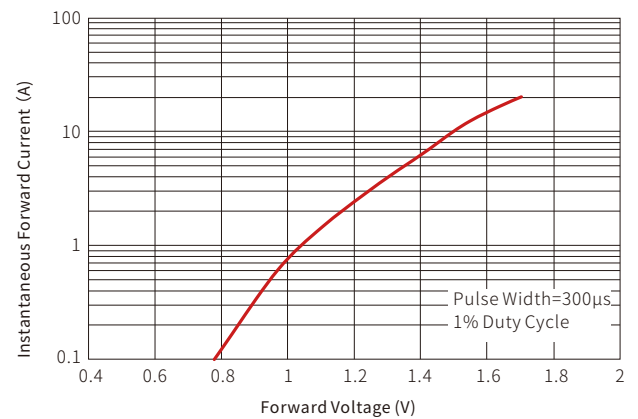
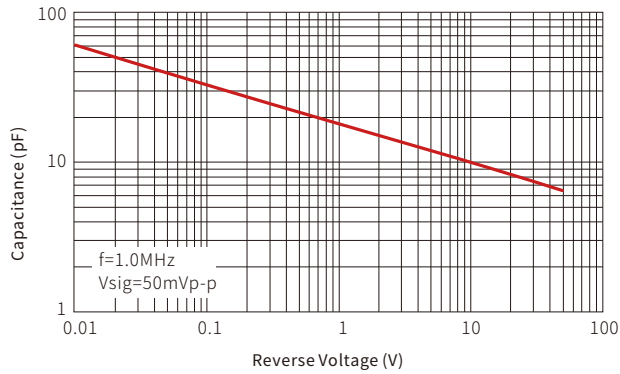
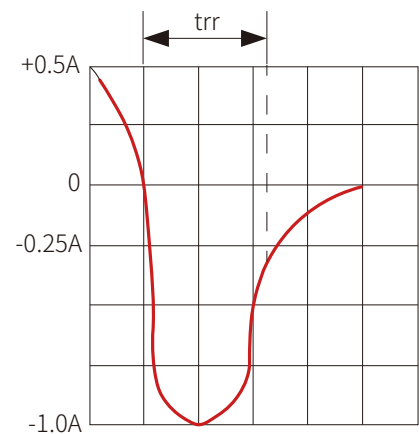
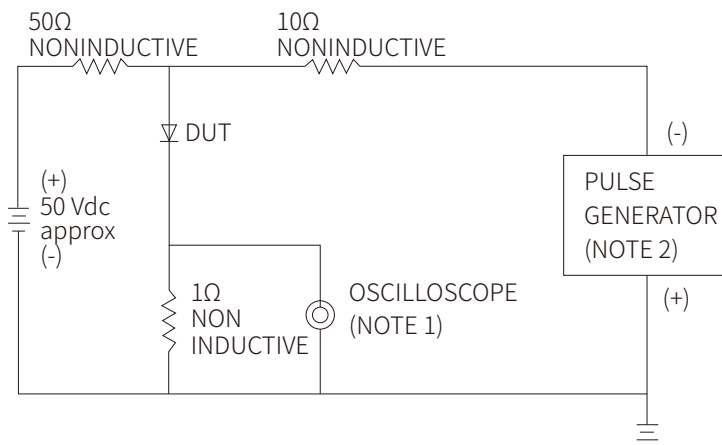
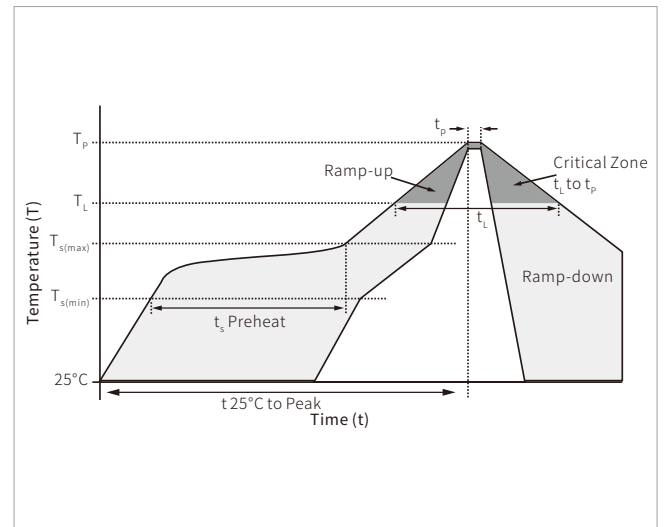


Fig. 5-Typical Junction Capacitance

Fig. 6-Reverse Recovery Time Characteristic And Test Circuit Diagram


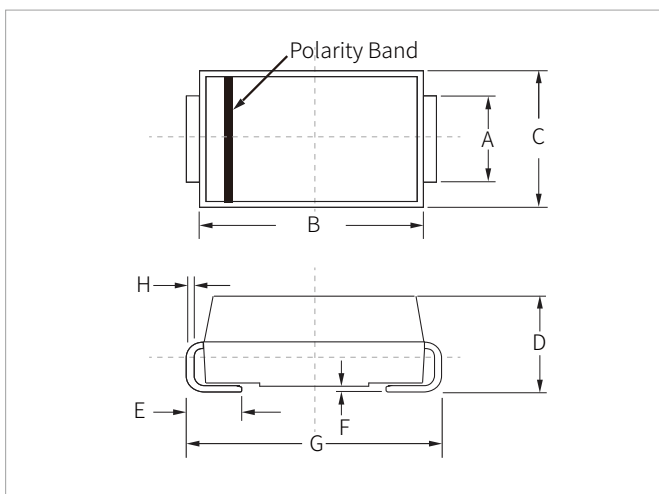
NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF
 2. Rise time = 10 ns max., Source Impedance = 50 ohms

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

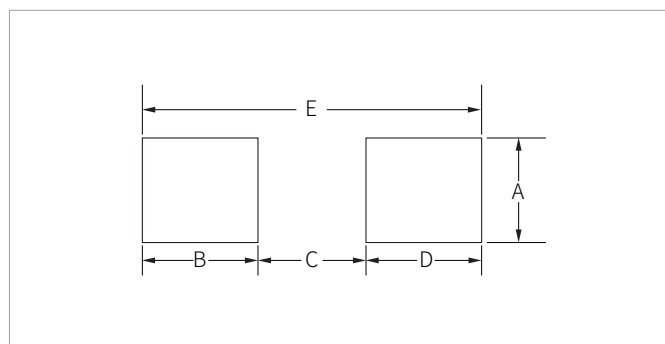


DO-214AC(SMA) PACKAGE INFORMATION



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
M1Q-M7Q	DO-214AC(SMA)	7500PCS	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.