

FEATURES

- Low Power Loss, High Efficiency
- Ideal For Automated Placement
- Glass Passivated Junction Chip
- Fast Switching For High Efficiency
- Meet AEC-Q101 Requirements



DO-214AC(SMA)



Schematic Symbol

APPLICATIONS

- For Use In High Frequency Rectification Of Power Supplies, Inverters, Converters, and Freewheeling Diodes For Consumer and Telecommunication

APPROVALS

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

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter		Symbol	RS1AQ	RS1BQ	RS1DQ	RS1GQ	RS1JQ	RS1KQ	RS1MQ	Unit
Marking			RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	
Repetitive Peak Reverse Voltage		V _{RRM}	50	100	200	400	600	800	1000	V
Reverse Voltage, Total RMS Value		V _{RMS}	35	70	140	280	420	560	700	
Maximum DC Blocking Voltage		V _{DC}	50	100	200	400	600	800	1000	
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (Fig.1)		I _o	1.0							A
Forward Surge Current (Non-Repetitive) @60Hz Half-Sine Wave,1 Cycle, T _j =25°C		I _{FSM}	30							A
Forward Surge Current (Non-repetitive) @1ms, Square Wave, 1 Cycle, T _j =25°C			60							
Maximum Instantaneous Forward Voltage I _{FM} =1.0A		V _F	1.3							V
Reverse Current @ Rated V _R Per Diode ⁽²⁾	T _J =25°C	I _R	5							μA
	T _J =125°C		100							
Maximum Reverse Recovery Time I _F =0.5A , I _R =1.0A,I _{rr} =0.25A		T _{rr}	150				250	500		ns
Typical Junction Capacitance Measured at 1MHz And Applied Reverse Voltage Of 4.0 V.D.C		C _J	11				6			pF
Current Squared Time @1ms≤t≤8.3ms T _j =25°C		I ² t	3.735							A ² s
Operating Junction and Storage Temperature Range		T _J ,T _{STG}	-55 to +150							°C

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

Parameter	Symbol	RS1AQ	RS1BQ	RS1DQ	RS1GQ	RS1JQ	RS1KQ	RS1MQ	Unit
Typical Thermal Resistance	$R_{\theta J-A}^{(1)}$	75 ¹⁾							°C/W
	$R_{\theta J-L}^{(1)}$	35 ¹⁾							
	$R_{\theta J-C}^{(1)}$	20 ¹⁾							

Note: (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

CHARACTERISTIC CURVES

Fig. 1-Io - TL Curve

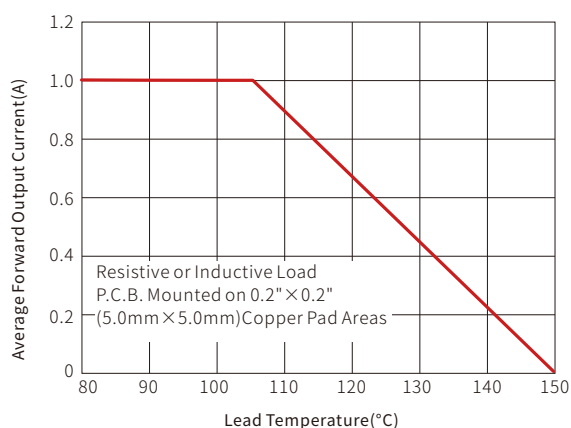


Fig. 2-Surge Forward Current Capability

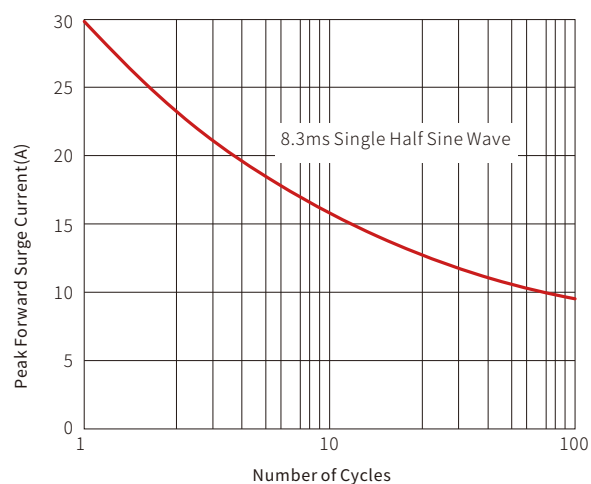
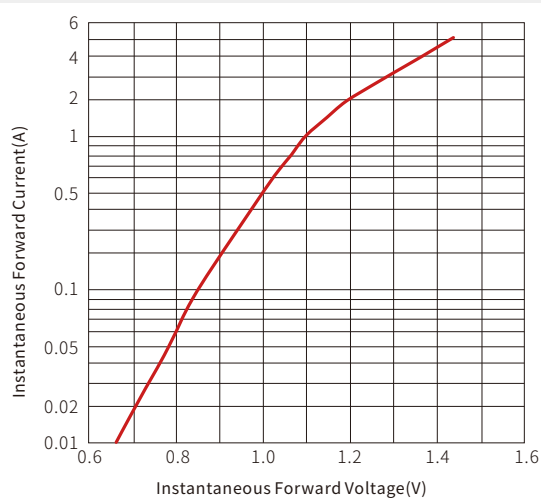
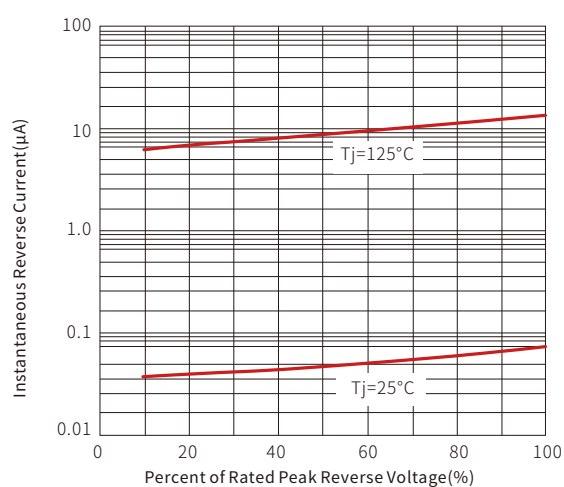
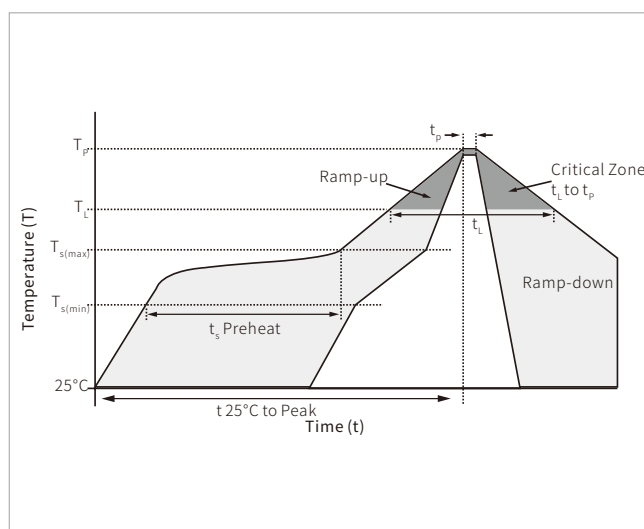


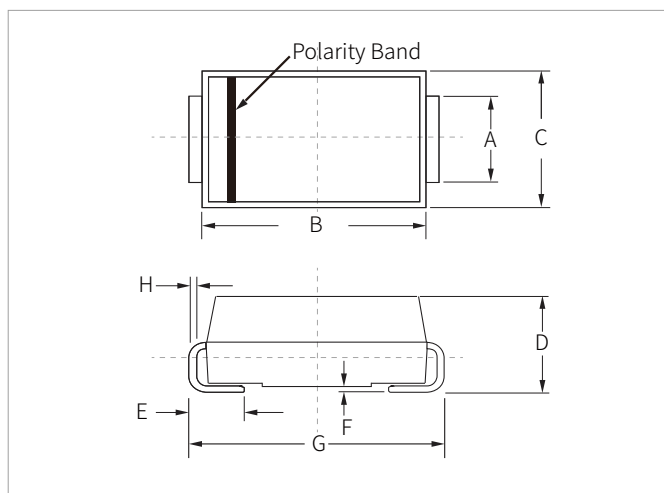
Fig. 3-Typical Forward Voltage

Fig. 4-Typical Reverse Characteristics


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

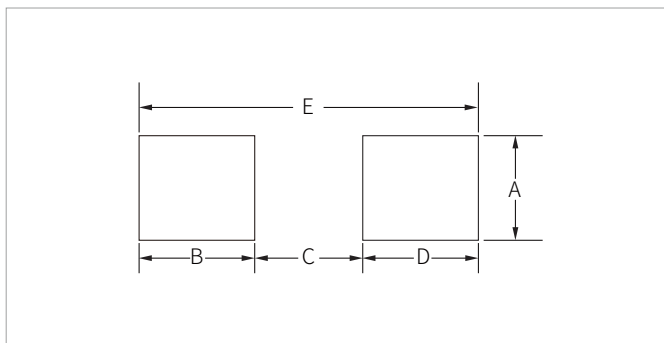


DO-214AC(SMA) PACKAGE INFORMATION



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
RS1AQ-RS1MQ	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

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.