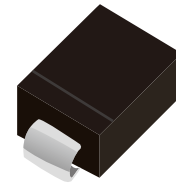


## FEATURES

- | Low Power Loss, High Efficiency
- | Ideal For Automated Placement
- | Glass Passivated Junction Chip
- | Fast Switching For High Efficiency



DO-214AA(SMB)



Schematic Symbol

## APPLICATIONS

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

## APPROVALS

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

## MAXIMUM RATINGS AND CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	ES 2AB	ES 2BB	ES 2CB	ES 2DB	ES 2FB	ES 2GB	ES 2HB	ES 2JB	ES 2KB	Unit
Marking		ES2A	ES2B	ES2C	ES2D	ES2F	ES2G	ES2H	ES2J	ES2K	
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	300	400	500	600	800	V
Reverse Voltage, Total RMS Value	V <sub>RMS</sub>	35	70	105	140	210	280	350	420	560	
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	300	400	500	600	800	
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (Fig.1)	I <sub>O</sub>	2.0									A
Forward Surge Current (Non-Repetitive) @60Hz Half-Sine Wave, 1 Cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	50									A
Forward Surge Current (Non-repetitive) @1ms, Square Wave, 1 Cycle, T <sub>J</sub> =25°C		100									
Maximum Instantaneous Forward Voltage I <sub>FM</sub> =2.0A	V <sub>F</sub>	0.95			1.3		1.7		1.85		V
Reverse Current @ Rated V <sub>R</sub> Per Diode <sup>(2)</sup>	T <sub>J</sub> =25°C	5									μA
	T <sub>J</sub> =125°C	100									
Maximum Reverse Recovery Time I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>FF</sub> =0.25A	T <sub>rr</sub>	35									ns
Typical Junction Capacitance Measured at 1MHz And Applied Reverse Voltage Of 4.0 V.D.C	C <sub>J</sub>	31			17		12		12		pF
Current Squared Time @1ms ≤ t ≤ 8.3ms T <sub>J</sub> =25°C	I <sup>2</sup> t	10.375									A <sup>2</sup> s
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150									°C

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

Parameter	Symbol	ES 2AB	ES 2BB	ES 2CB	ES 2DB	ES 2FB	ES 2GB	ES 2HB	ES 2JB	ES 2KB	Unit	
Typical Thermal Resistance	$R_{\theta J-A}^{(1)}$	60										$^{\circ}\text{C}/\text{W}$
	$R_{\theta J-L}^{(1)}$	22										
	$R_{\theta J-C}^{(1)}$	16										

Note: (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

## CHARACTERISTIC CURVES

Fig. 1- $I_o$  - TL Curve

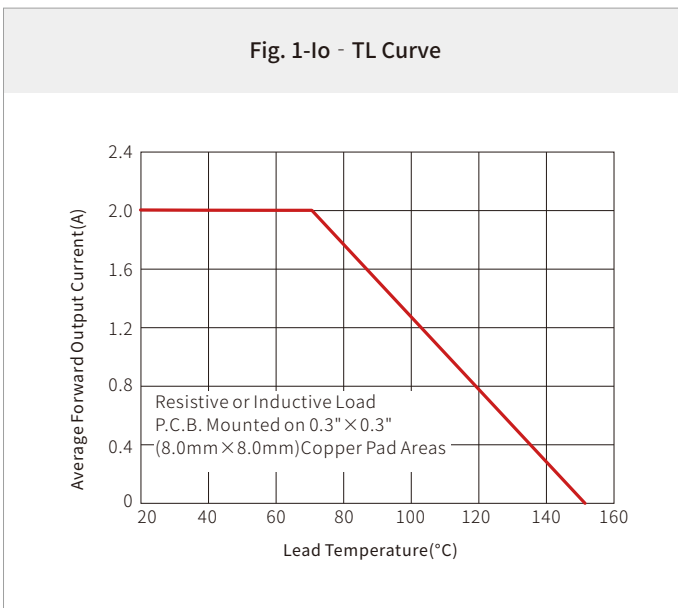
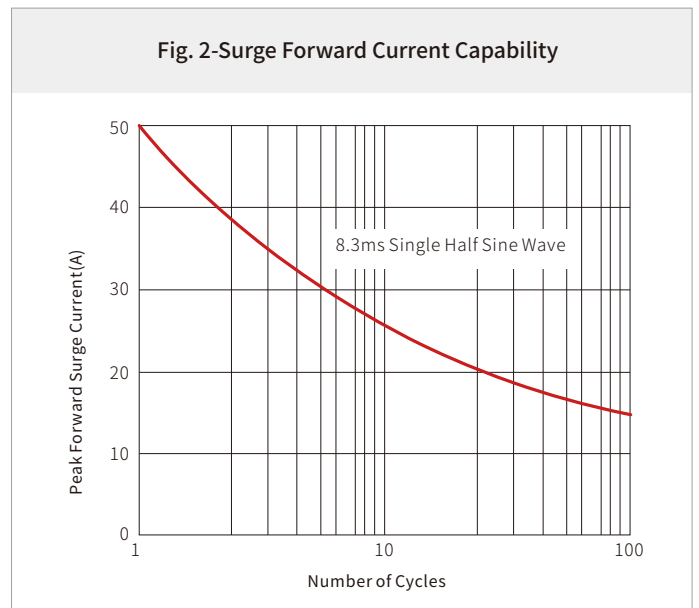
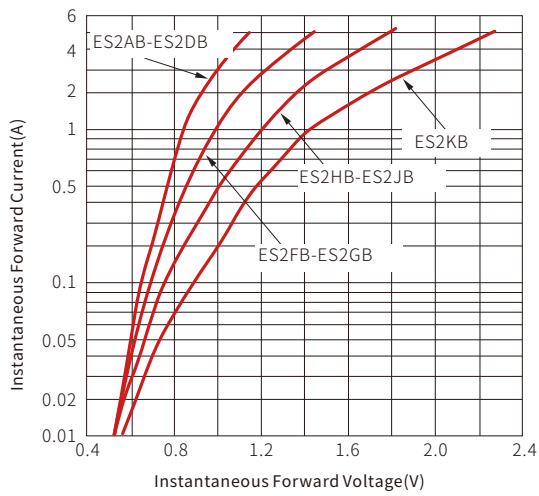
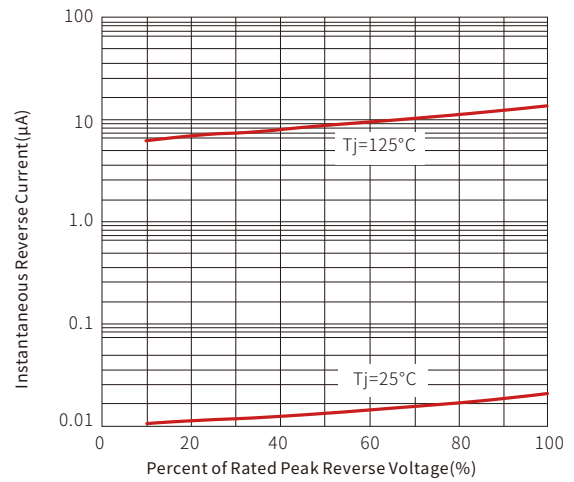


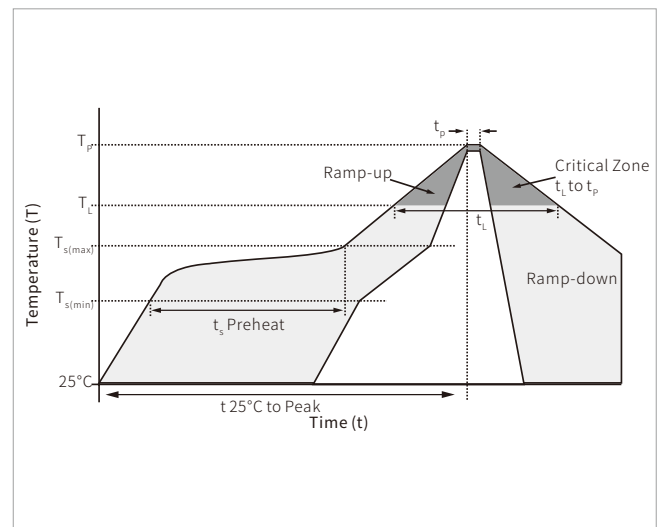
Fig. 2-Surge Forward Current Capability



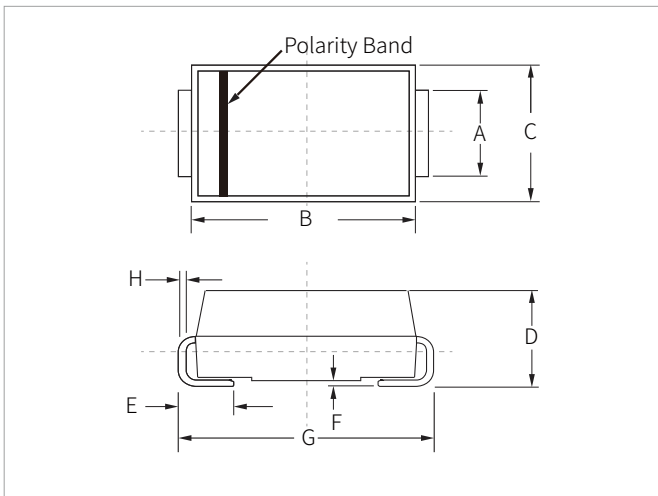
**Fig. 3-Typical Forward Voltage**

**Fig. 4-Typical Reverse Characteristics**


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max (T <sub>s(min)</sub> )	150°C
	Temperature Max (T <sub>s(max)</sub> )	200°C
	Time (min to max) (t <sub>s</sub> )	60 – 180 secs
Average ramp up rate (Liquidus Temp (T <sub>L</sub> ) to peak)		3°C/second max
T <sub>s(max)</sub> to T <sub>L</sub> - Ramp-up Rate		3°C/second max
Reflow	Temperature (T <sub>L</sub> ) (Liquidus)	217°C
	Time (min to max) (t <sub>L</sub> )	60 – 150 seconds
Peak Temperature (T <sub>p</sub> )		260°C
Time within 5°C of actual peak Temperature (t <sub>p</sub> )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T <sub>p</sub> )		8 minutes max.
Do not exceed		260°C

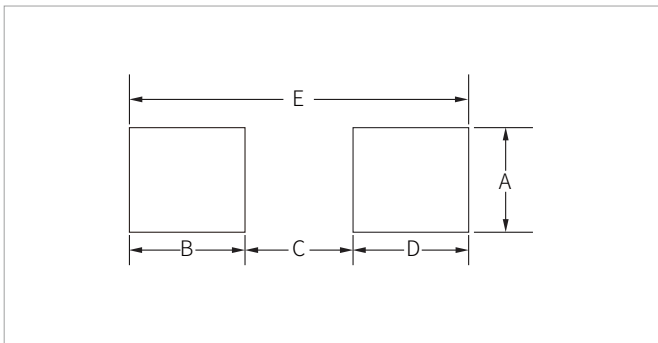


## DO-214AA(SMB) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.80	2.20	0.071	0.087
B	4.30	4.70	0.170	0.185
C	3.40	3.90	0.134	0.153
D	2.15	2.75	0.085	0.108
E	1.00	1.50	0.039	0.059
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.200	0.216
H	0.15	0.30	0.006	0.012

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.010
D	1.45	-	0.057	-
E	5.60REF		0.220REF	

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
ES2AB-ES2KB	DO-214AA(SMB)	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](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

**By QR Code**

Website



Wechat

To find your local partner within Semiware's global website: [www.semiware.com](http://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.