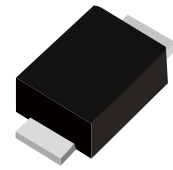


## FEATURES

- Idea for printed circuit board
- Glass passivated junction chip
- Low reverse leakage
- High forward surge current capability



SMBF



Schematic Symbol

## MECHANICAL DATA

- Case : Molded plastic body
- Polarity : Polarity symbol marking on body
- Mounting Position : Any

## APPROVALS

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

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

Parameter		Symbol	ES5ABF	ES5BBF	ES5CBF	ES5DBF	ES5FBF	ES5GBF	ES5JBF	Unit
Marking			ES5ABF	ES5BBF	ES5CBF	ES5DBF	ES5FBF	ES5GBF	ES5JBF	
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	50	100	150	200	300	400	600	V
Maximum RMS voltage		V <sub>RMS</sub>	35	70	105	140	210	280	420	
Maximum DC blocking voltage		V <sub>DC</sub>	50	100	150	200	300	400	600	
Maximum average forward rectified current at T <sub>L</sub> =100°C		I <sub>F(AV)</sub>	5.0							A
Surge peak forward current,8.3ms single half sine-wave superimposed on rated load per diode		I <sub>FSM</sub>	150.0							
Maximum instantaneous forward voltage at 5.0A		V <sub>F</sub>	1.0				1.3		1.7	V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> =25°C	I <sub>R</sub>	2.0							μA
	T <sub>A</sub> =125°C		200							
Maxinum reverse recovery time(Note 1)		T <sub>rr</sub>	35							ns
Typical junction capacitance (Note2)		C <sub>J</sub>	76.0							pF
Typical thermal resistance		R <sub>θJA</sub>	78.0							°C/W
Operating junction and storage temperature range		T <sub>J</sub> ,T <sub>STG</sub>	-55 to +150							°C

Note :

- Reverse recovery time test condition: I<sub>F</sub>=0.5A I<sub>R</sub>=1.0A I<sub>RR</sub>=0.25A
- Measured at 1MHz and applied reverse voltage of 4.0V D.C.

# CHARACTERISTIC CURVES

Fig. 1- Derating Curve Output Rectified Current

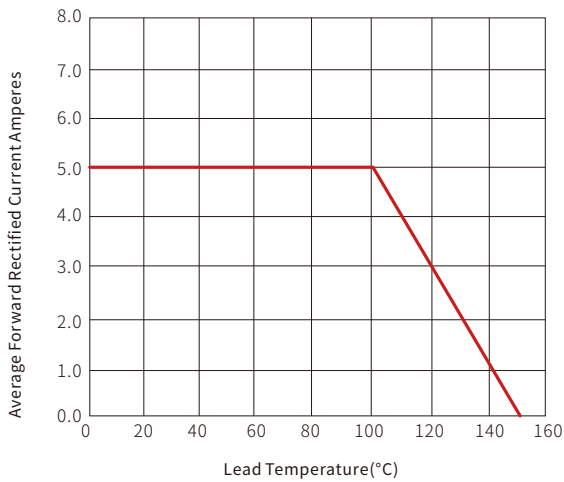


Fig. 2-Maximum Non-Repetitive Peak Forward Surge Current Perleg

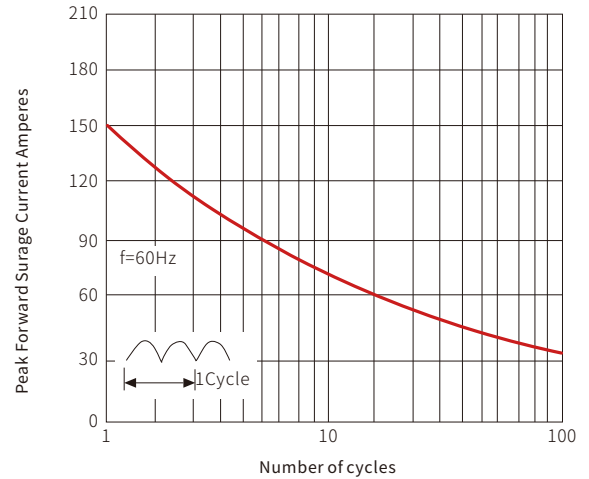


Fig. 3-Typical Forward Voltage Characteristics

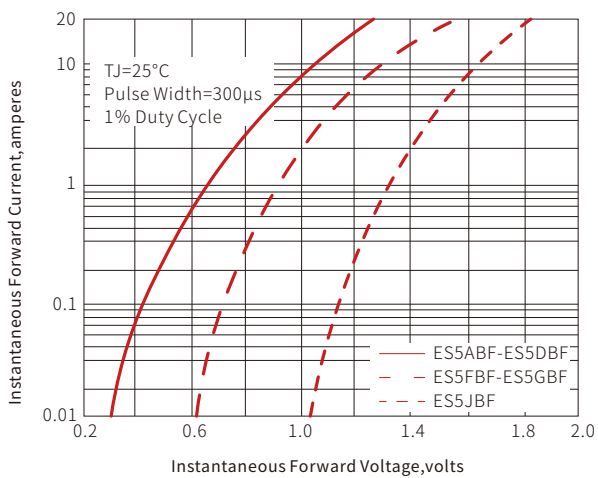
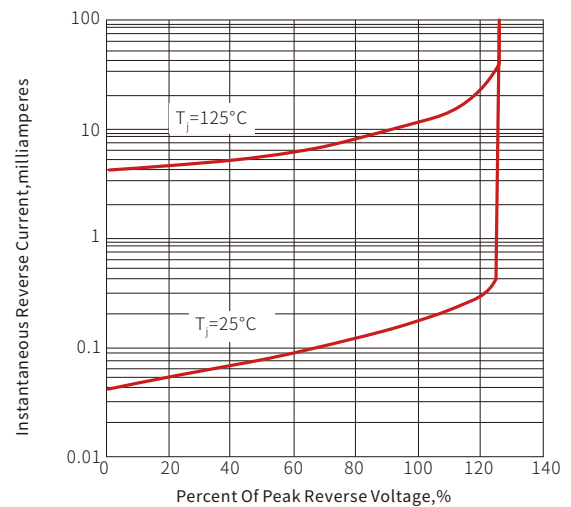
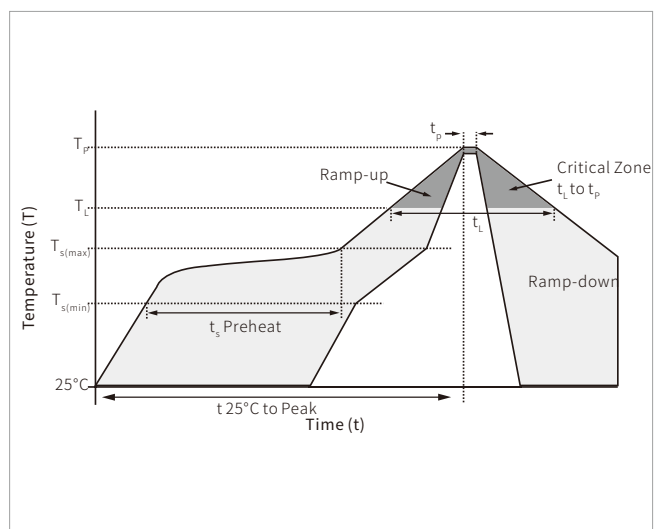


Fig. 4-Typical Reverse Leakage Characteristics

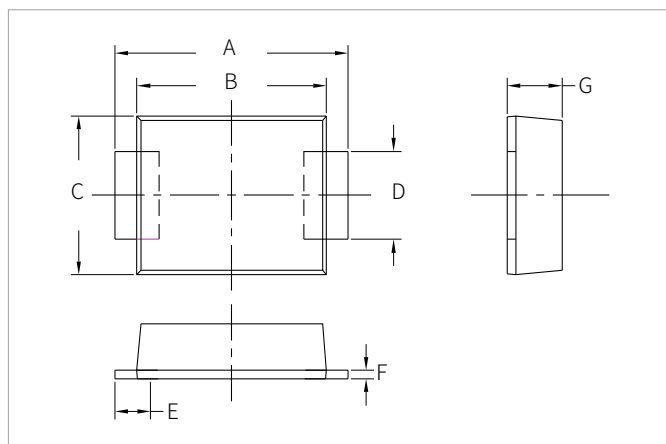


## SOLDERING PARAMETERS

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

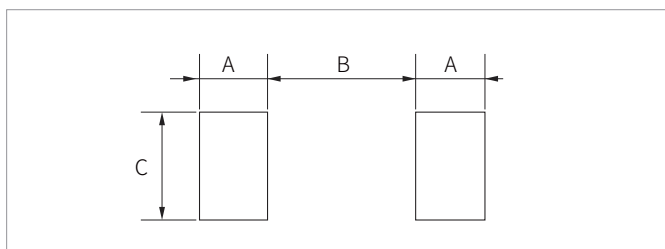


## SMBF PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.10	5.50	0.201	0.217
B	4.10	4.50	0.161	0.177
C	3.40	3.80	0.134	0.150
D	1.90	2.10	0.075	0.083
E	0.70	-	0.028	-
F	0.15	0.25	0.006	0.010
G	1.20	2.20	0.047	0.087

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.0	-	0.079	-
B	-	2.5	-	0.098
C	2.2	-	0.087	-

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
ES5ABF-ES5JBF	SMBF	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.