

## FEATURES

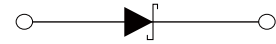
- Low Forward Voltage Schottky Rectifier
- Matte Tin (Sn) Lead finish



SOD-123

## MECHANICAL DATA

- SOD-123 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



Schematic Symbol

## APPROVALS

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

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	MBR0520L	MBR0530L	MBR0540L	Unit
Marking		SD	SE	SF	
Peak Repetitive Reverse Voltage	$V_{RRM}$	20	30	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	V
Continuous Forward Current	$I_O$	0.5			A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave	$I_{FSM}$	5.5			A
Power Dissipation	$P_D$	410			mW
Operating Junction Temperature	$T_J$	-55-+150			$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-65-+150			$^{\circ}\text{C}$

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

Parameter	Symbol	Test Conditions	MBR0520L	MBR0530L	MBR0540L	Unit
Forward Voltage	$V_F$	$I_F=0.1\text{A}$	0.3	0.375		V
		$I_F=0.5\text{A}$	0.39	0.43	0.51	V
		$I_F=1.0\text{A}$			0.62	V
Reverse Leakage Current	$I_R$	$V_R=10\text{V}$	75			$\mu\text{A}$
		$V_R=20\text{V}$	250			$\mu\text{A}$
		$V_R=15\text{V}$		20		$\mu\text{A}$
		$V_R=30\text{V}$		130		$\mu\text{A}$
		$V_R=20\text{V}$			10	$\mu\text{A}$
		$V_R=40\text{V}$			20	$\mu\text{A}$
		$V_R=40\text{V}, T_J=100^{\circ}\text{C}$				5000
Type Junction Capacitance*	$C_j$	$V_R=0\text{V}, f=1\text{MHz}$	170			pF

\*  $C_j$  is typical value, other parameters are maximum values.

## CHARACTERISTIC CURVES

Fig.1 Typical Reverse Current of MBR0520L

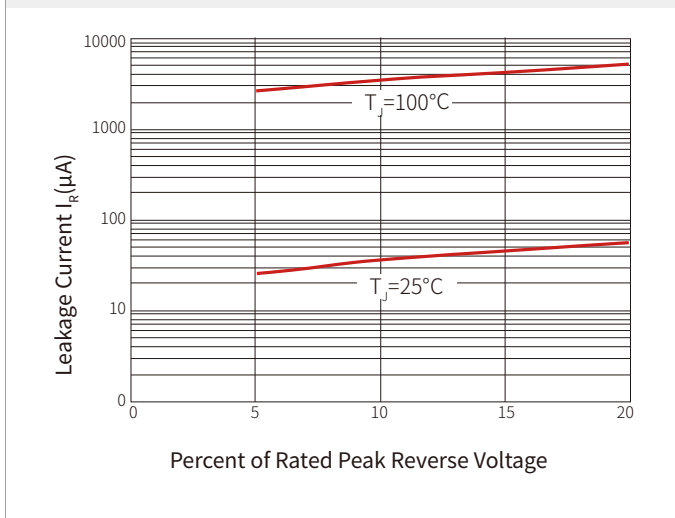


Fig.2 Typical Reverse Current of MBR0530L

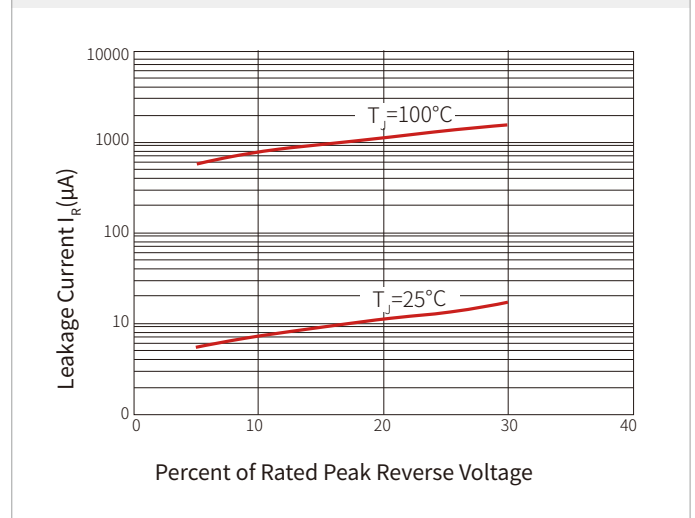


Fig.3 Typical Reverse Current of MBR0540L

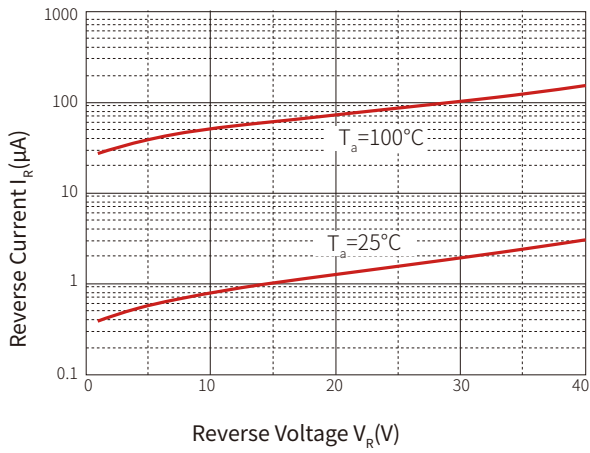


Fig.4 Typical Forward Characteristics of MBR0520L

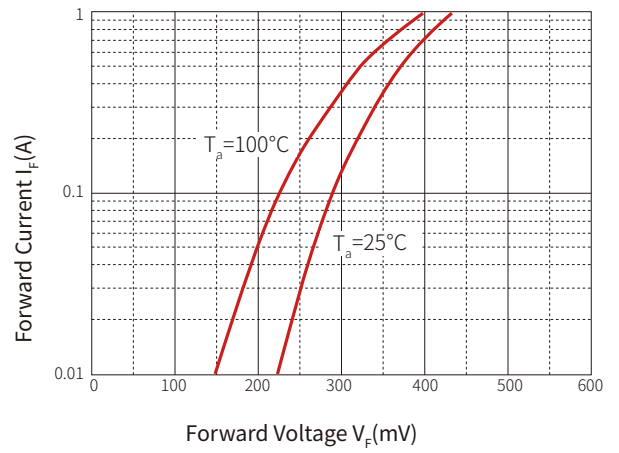


Fig.5 Typical Forward Characteristics of MBR0530L

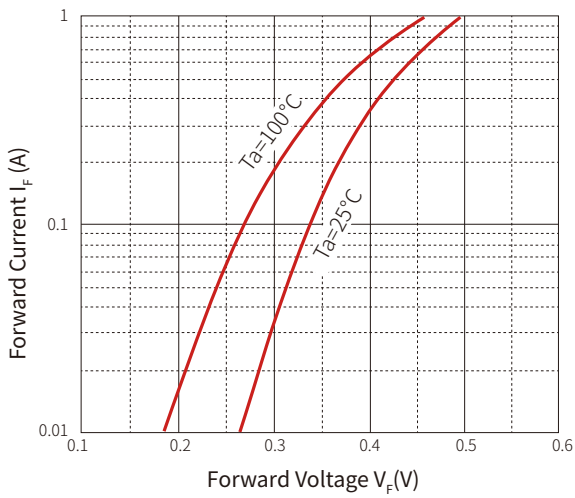
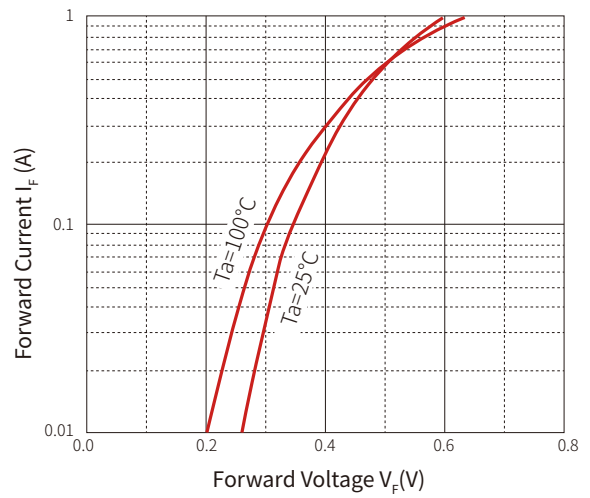
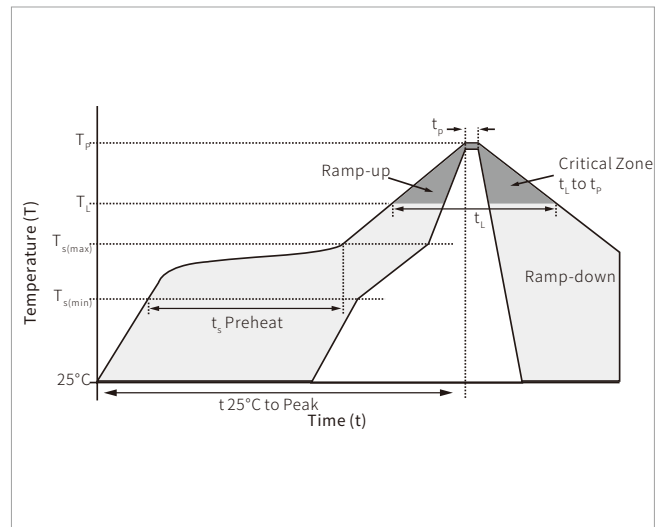


Fig.6 Typical Forward Characteristics of MBR0540L

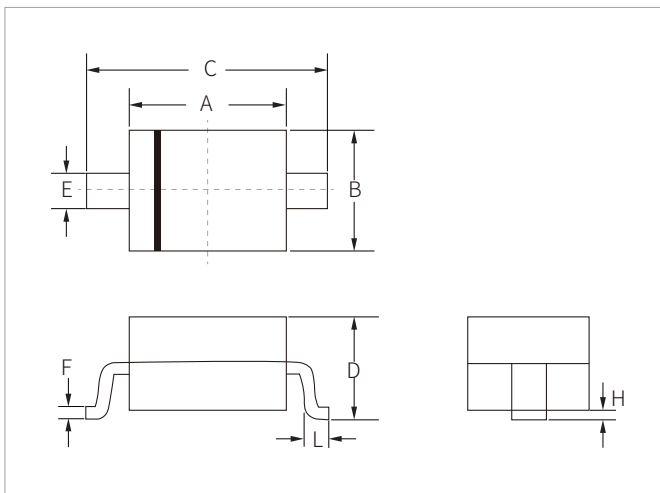


## SOLDERING PARAMETERS

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
Reflow	$T_{s(max)}$ to $T_L$ - Ramp-up Rate	3°C/second max
	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

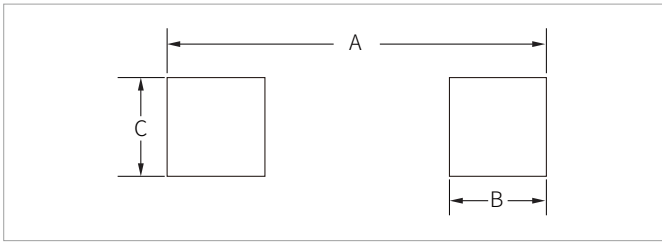


## SOD-123 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	2.80	0.102	0.110
B	1.50	1.70	0.059	0.067
C	3.55	3.85	0.140	0.152
D	1.05	1.25	0.041	0.049
E	0.45	0.65	0.018	0.026
F	0.08	0.15	0.003	0.006
H	0.00	0.10	0.000	0.004
L	0.25	0.45	0.010	0.018

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.00	4.30	0.157	0.169
B	0.75	0.85	0.030	0.033
C	0.95	1.05	0.037	0.041

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MBR0520L-MBR0540L	SOD-123	3000PCS	7"

**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)

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