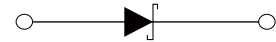


FEATURES

- | Low Forward Voltage Schottky Rectifier
- | Matte Tin (Sn) Lead finish
- | Meet AEC-Q101 Requirements



SOD-123



Schematic Symbol

MECHANICAL DATA

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

APPROVALS

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

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

Parameter	Symbol	MBR0520LQ	MBR0530LQ	MBR0540LQ	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°C)

Parameter	Symbol	Test Conditions	MBR0520LQ	MBR0530LQ	MBR0540LQ	Unit
Forward Voltage	V _F	I _F =0.1A	0.3	0.375		V
		I _F =0.5A	0.39	0.43	0.51	V
		I _F =1.0A			0.62	V
Reverse Leakage Current	I _R	V _R =10V	75			μA
		V _R =20V	250			μA
		V _R =15V		20		μA
		V _R =30V		130		μA
		V _R =20V			10	μA
		V _R =40V			20	μA
		V _R =40V, T _J =100°C				5000
Type Junction Capacitance*	C _J	V _R =0V, f=1MHz	170			pF

* C_J is typical value, other parameters are maximum values.

CHARACTERISTIC CURVES

Fig.1 Typical Reverse Current of MBR0520LQ

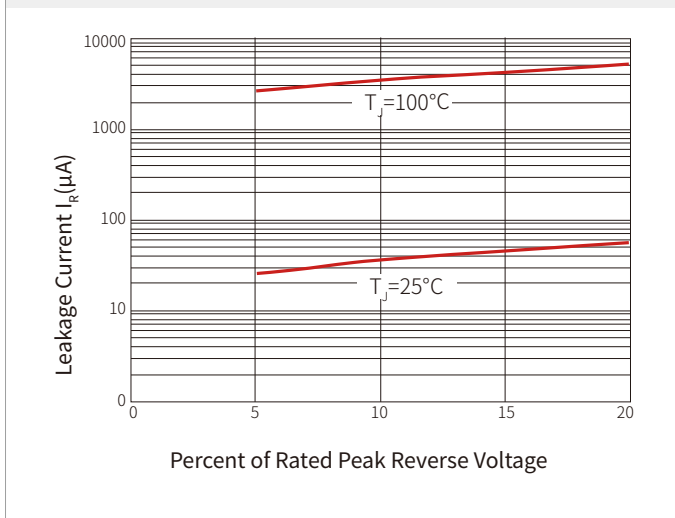


Fig.2 Typical Reverse Current of MBR0530LQ

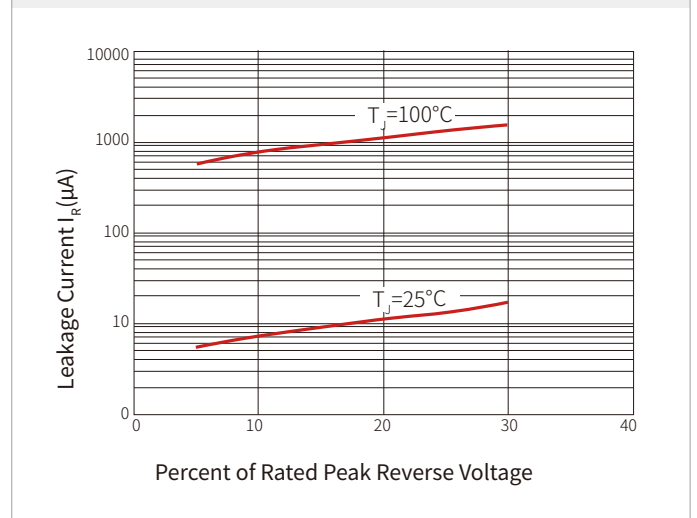


Fig.3 Typical Reverse Current of MBR0540LQ

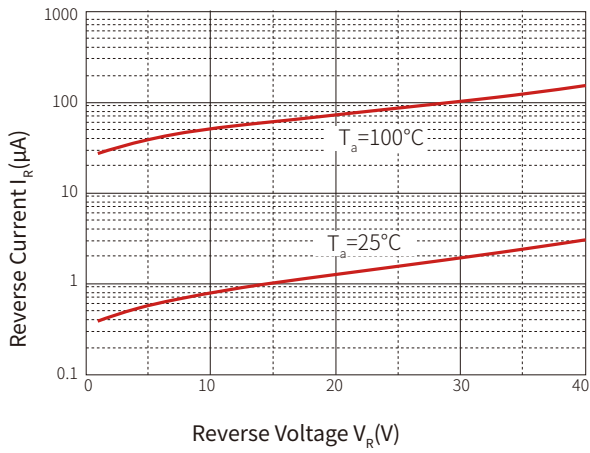


Fig.4 Typical Forward Characteristics of MBR0520LQ

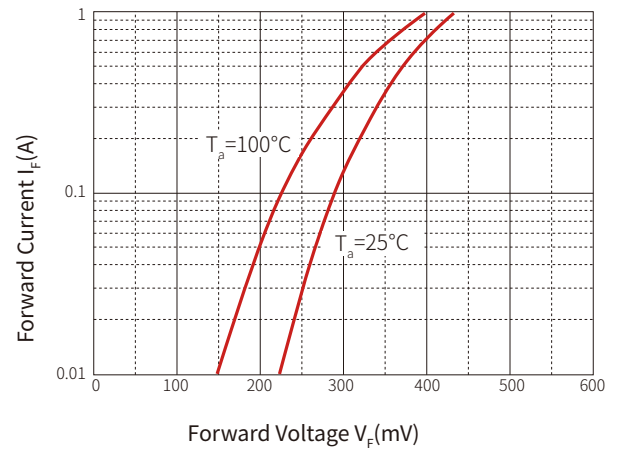


Fig.5 Typical Forward Characteristics of MBR0530LQ

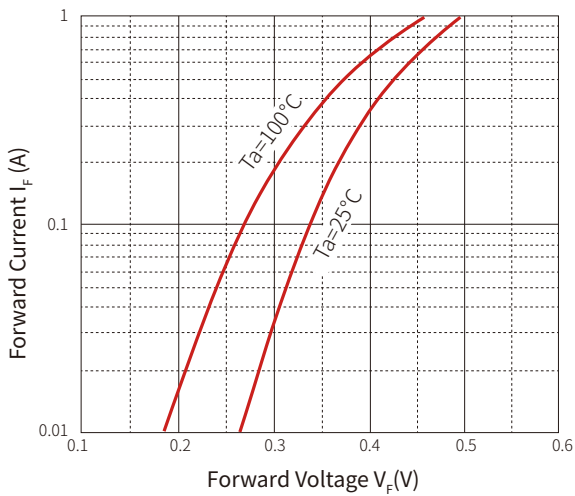
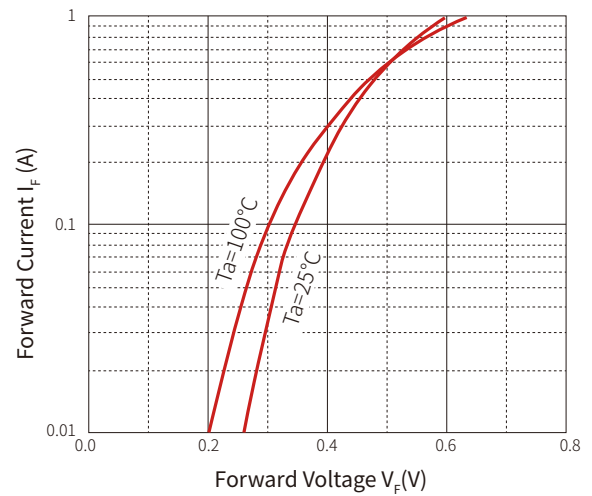
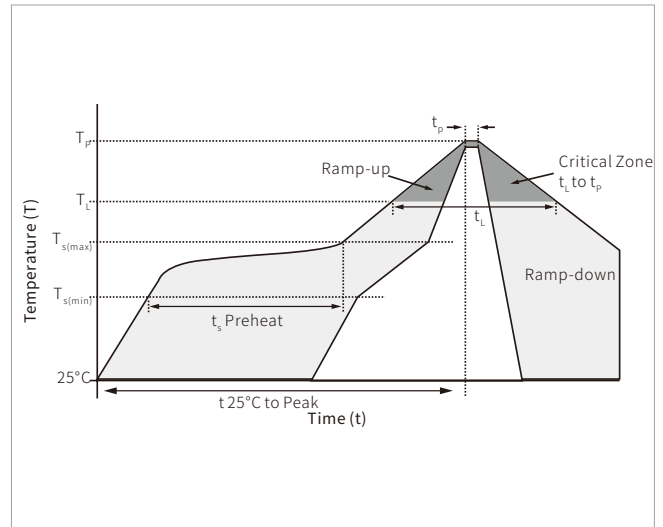


Fig.6 Typical Forward Characteristics of MBR0540LQ

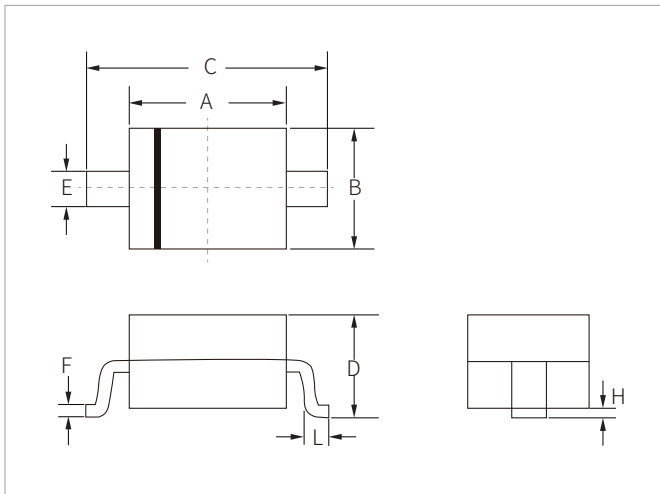


SOLDERING PARAMETERS

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

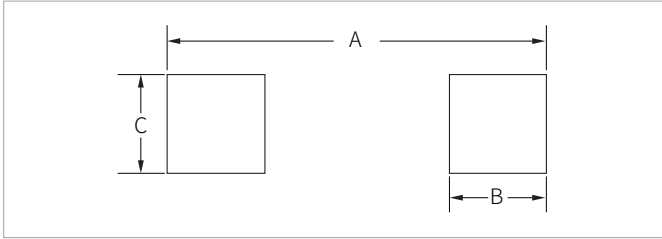


SOD-123 PACKAGE INFORMATION



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
MBR0520LQ-MBR0540LQ	SOD-123	3000PCS	7"

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