

Schottky Barrier Diode

Parameter	Value	Unit
V_R	20~40	V
$I_{F(AV)}$	500	mA



SOD-123

Features

- Low Forward Voltage
- High conductance
- Small Surface Mount device
- PN Junction Guard Ring for Transient and ESD Protection

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	MBR0520	MBR0530	MBR0540	Unit
Peak Reverse Voltage	V_R	20	30	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	
Maximum DC Blocking Voltage	V_{RM}	20	30	40	
Average rectified output current	$I_{F(AV)}$	500			mA
Non-Repetitive Peak Forward Surge Current@t=8.3ms	I_{FSM}	5.5			A
Power Dissipation	P_D	410			mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	305			$^\circ\text{C/W}$
Junction Temperature	T_J	125			$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~+150			$^\circ\text{C}$

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	MBR0520	MBR0530	MBR0540	Unit	Conditions
Maximum Forward voltage	V_F	0.300	0.375	0.510	V	$I_F=100\text{mA}$
		0.385	0.430	0.620		$I_F=500\text{mA}$
Minimum Reverse voltage	V_R	20	30	40	V	$I=I_R$
Maximum Reverse voltage leakage current@Rated DC Blocking Voltage	I_R	75	20	10	μA	$V=1/2V_R$
		250	130	20		$V=V_R$
Typical Junction capacitance	C_J	170			pF	$V_R=0\text{V}, f=1\text{MHz}$

Typical Characteristics

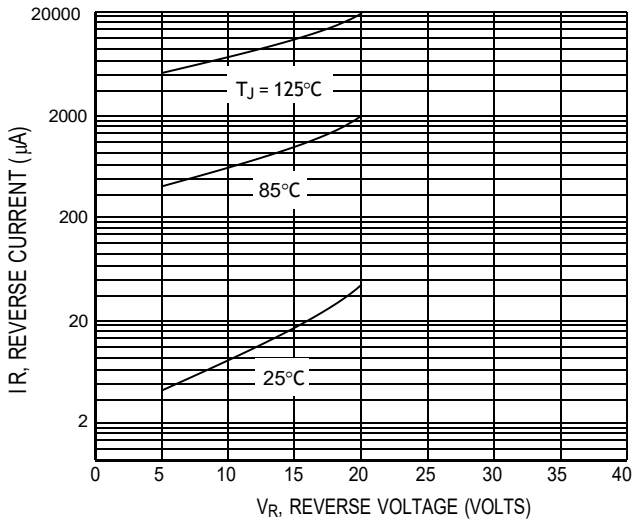


Figure 1. Typical Reverse Current of MBR0520

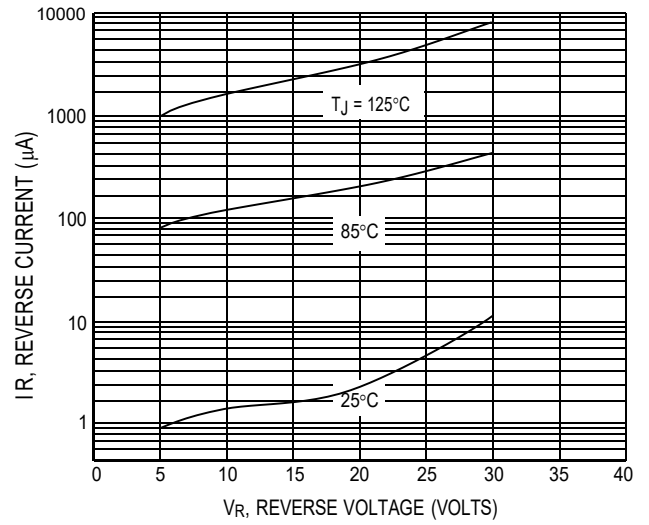


Figure 2. Typical Reverse Current of MBR0530

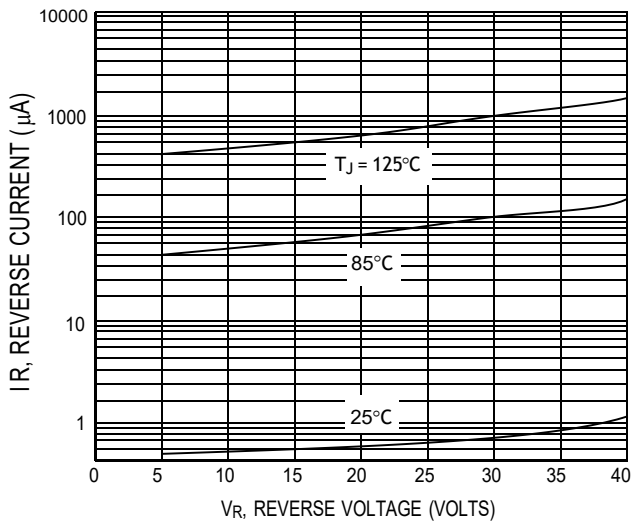
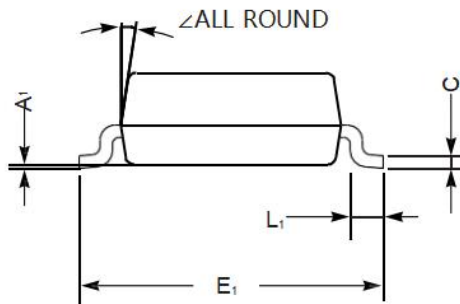
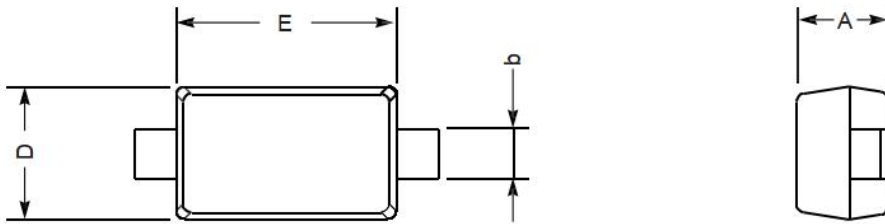


Figure 3. Typical Reverse Current of MBR0540

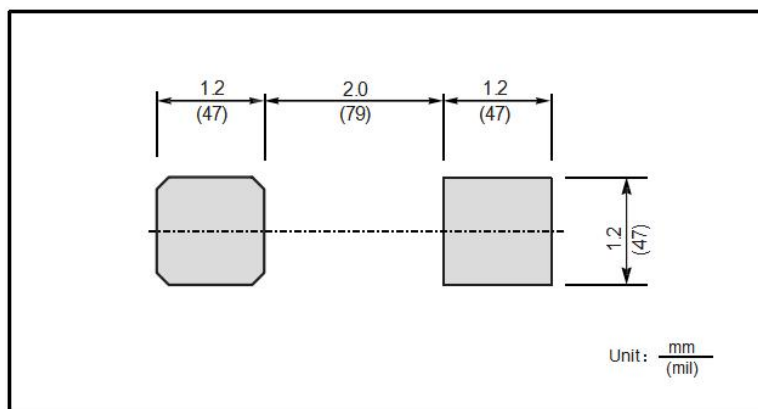
Package Outlines



SOD-123 mechanical data

UNIT		A	C	D	E	E ₁	L ₁	b	A ₁	∠
mm	max	1.3	0.22	1.8	2.8	3.9	0.45	0.7	0.2	9°
	min	0.9	0.09	1.5	2.5	3.6	0.25	0.5		
mil	max	51	8.7	71	110	154	18	28	8	
	min	35	3.5	59	98	142	10	20		

The recommended mounting pad size



***Important Usage Information and Disclaimer**

The specifications of Zhuhai Hypersemi Co., Ltd. products are not guarantees of product characteristics. They reflect typical performance expected in standard applications, which may vary with specific uses. Users must conduct prior testing for their applications and make necessary adjustments.

Users are responsible for the safety of applications utilizing our products and must implement adequate safety measures to prevent physical injury, fire, or other risks in case of product failure. It is the user's duty to ensure that application designs comply with all applicable laws and standards. Our products must not be used in any applications where a product failure could reasonably result in personal injury, unless specifically authorized in a signed document by Zhuhai Hypersemi Co., Ltd.

No representations or warranties are made regarding the accuracy or completeness of this information, including any claims of non-infringement of third-party intellectual property rights. Zhuhai Hypersemi Co., Ltd. assumes no liability for any applications or uses of its products and does not grant any licenses to its intellectual property rights or those of others. We also make no claims regarding non-infringement of third-party intellectual property rights that may arise from applications.

Due to technical requirements, our products may contain hazardous substances. For details, please contact your nearest sales office. This document replaces all previous information and may be updated. We reserve the right to make changes.