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October 2014

MBR0540 Schottky Rectifier

Features

- 0.5 A, Low Forward Voltage less than 460 mV
- 400 mW Power Dissipation Package
- Compact Surface Mount Package with The Same Footprint as Mini-melf



SOD-123

* Band marking denotes cathode

Ordering Information

Part Number	Top Mark	Package	Packing Method
MBR0540	B4	SOD-123 2L	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{RRM}	Maximum Repetitive Reverse Voltage	40	V
$I_{F(AV)}$	Average Rectified Forward Current	500	mA
I_{FSM}	Non Repetitive Peak Forward Current (Surge Applied at Rated Load Conditions Half-Wave, Single-Phase, 60 Hz)	5.5	A
T_{STG}	Storage Temperature Range	-65 to +150	$^\circ\text{C}$
T_{Jmax}	Operating Junction Temperature	-65 to +125	$^\circ\text{C}$

Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient ⁽¹⁾	206	$^\circ\text{C/W}$
$R_{\theta JL}$	Thermal Resistance, Junction-to-Lead ⁽²⁾	118	$^\circ\text{C/W}$

Notes:

1. 1.0 inch pad size (1.0 x 0.5 inch for each lead) on FR4 board.
2. Device is mounted on FR-4 PCB 0.013 mm.

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_F	Forward Voltage	$I_F = 500 \text{ mA}$		510	mV
		$I_F = 500 \text{ mA}, T_A = 100^\circ\text{C}$		460	
		$I_F = 1.0 \text{ A}$		620	
		$I_F = 1.0 \text{ A}, T_A = 100^\circ\text{C}$		610	
I_R	Reverse Current	$V_R = 20 \text{ V}$		10	μA
		$V_R = 20 \text{ V}, T_A = 100^\circ\text{C}$		5.0	mA
		$V_R = 40 \text{ V}$		20	μA
		$V_R = 40 \text{ V}, T_A = 100^\circ\text{C}$		13	mA

Typical Performance Characteristics

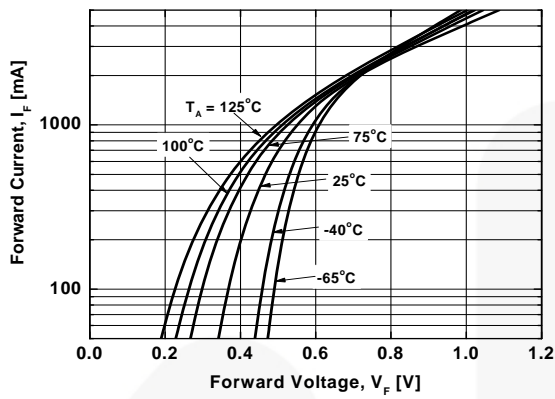


Figure 1. Forward Current vs. Forward Voltage

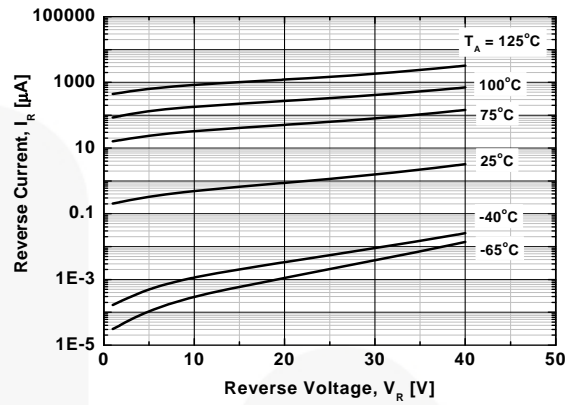


Figure 2. Reverse Current vs. Reverse Voltage

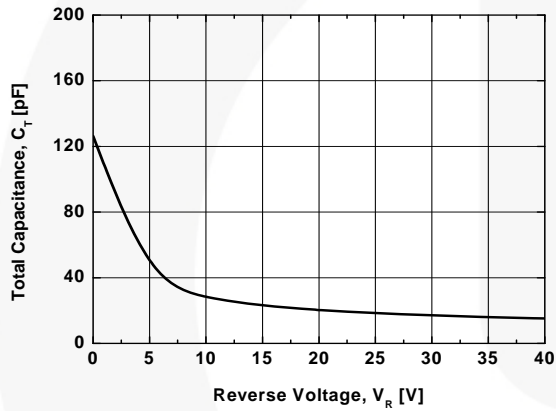
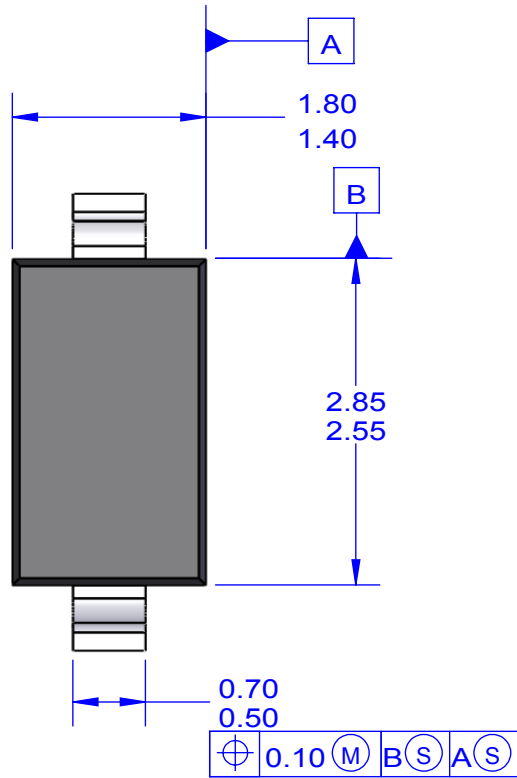
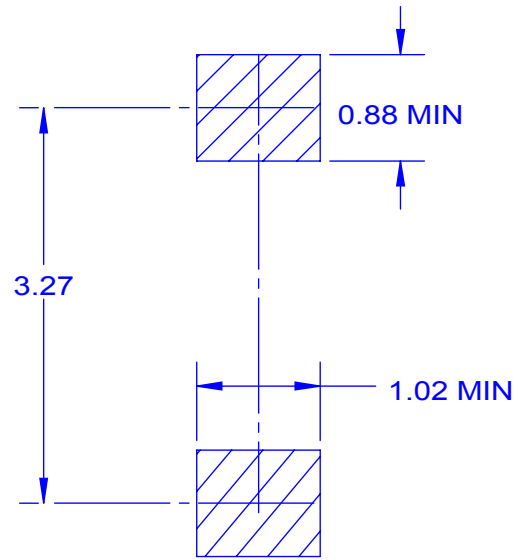


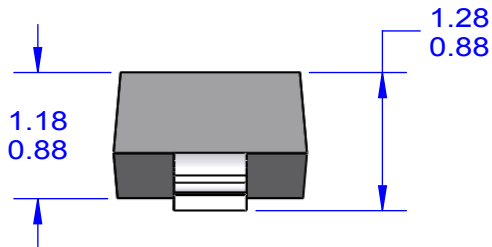
Figure 3. Total Capacitance



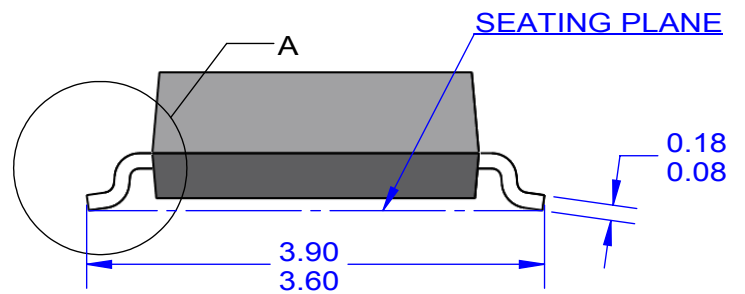
TOP VIEW



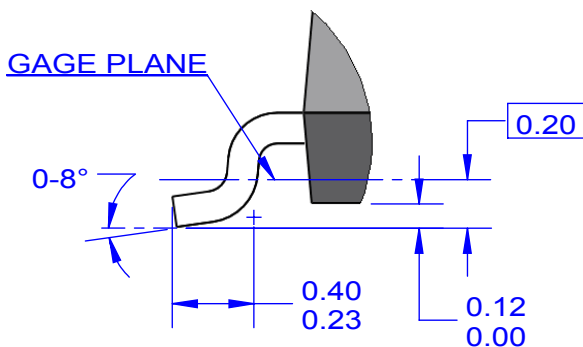
LAND PATTERN RECOMMENDATION



FRONT VIEW



SIDE VIEW



DETAIL "A"
SCALE 2:1

- NOTES: UNLESS OTHERWISE SPECIFIED
- A) PACKAGE REFERENCE: JEDEC, DO-215 ISSUE D, VARIATION AD.
 - B) ALL DIMENSIONS ARE IN MILLIMETERS.
 - C) DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
 - E) DRAWING FILE NAME: MA02AREV4



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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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