



# THE DATASHEET OF MBR0530



# MBR0530

## Schottky Rectifier

### Features

- 0.5 A, Low Forward Voltage less than 430 mV
- Compact Surface Mount Package with The Same Footprint as Mini-melf

### Applications

- Solid-State Relays
- Industrial Controls
- Lighting Controls
- Static Power Switches
- AC Motor Starters

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Description	Value	Unit
V <sub>RRM</sub>	Maximum Repetitive Reverse Voltage	30	V
I <sub>F(AV)</sub>	Average Rectified Forward Current	500	mA
I <sub>FSM</sub>	Non Repetitive Peak Forward Current (Surge Applied at Rated Load Conditions Half-Wave, Single-Phase, 60 Hz)	5.5	A
T <sub>STG</sub>	Storage Temperature Range	-65 to +150	°C
T <sub>Jmax</sub>	Operating Junction Temperature	-65 to +125	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

**Table 1. ORDERING INFORMATION**

Part Number	Top Mark	Package	Packing Method
MBR0530	B3	SOD-123 2L	Tape and Reel

**Table 2. THERMAL CHARACTERISTICS** (Values are at T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient (Note 1)	206	°C/W
R <sub>θJL</sub>	Thermal Resistance, Junction-to-Lead	173	°C/W

1. 1 inch square pad size on FR-4 board.



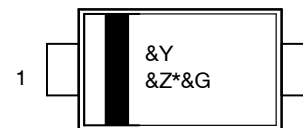
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**SOD-123  
CASE 425-04**

### MARKING DIAGRAM



- &Y = Binary Calendar Year Coding Scheme
- &Z = Assembly Plant Code
- \* = Specific Device Code B3
- &G = Single Digit Weekly Datecode

# MBR0530

**Table 3. ELECTRICAL CHARACTERISTICS** (Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Max.	Unit
$V_F$	Forward Voltage	$I_F = 100\text{ mA}$		375	mV
		$I_F = 100\text{ mA}, T_A = 100^\circ\text{C}$		340	
		$I_F = 500\text{ mA}$		430	
		$I_F = 500\text{ mA}, T_A = 100^\circ\text{C}$		420	
$I_R$	Reverse Current	$V_R = 15\text{ V}$		20	$\mu\text{A}$
		$V_R = 30\text{ V}$		130	$\mu\text{A}$
		$V_R = 30\text{ V}, T_A = 100^\circ\text{C}$		5	mA

## TYPICAL PERFORMANCE CHARACTERISTICS

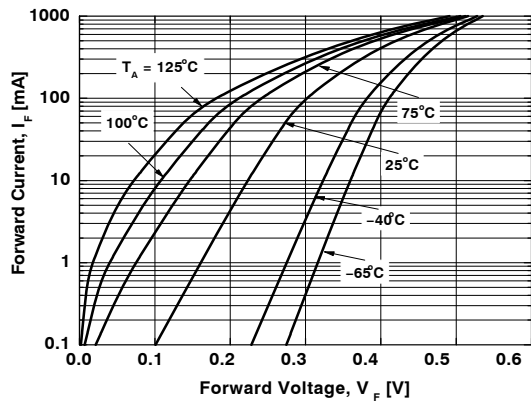


Figure 1. Forward Current vs. Forward Voltage

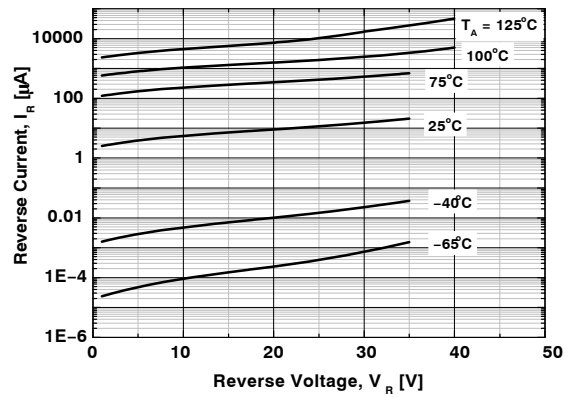


Figure 2. Reverse Current vs. Reverse Voltage

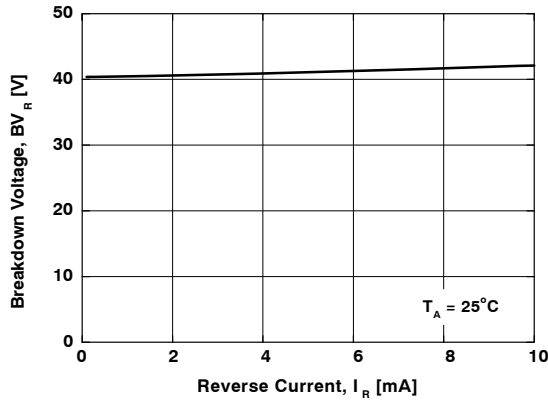


Figure 3. Breakdown Voltage vs. Reverse Current

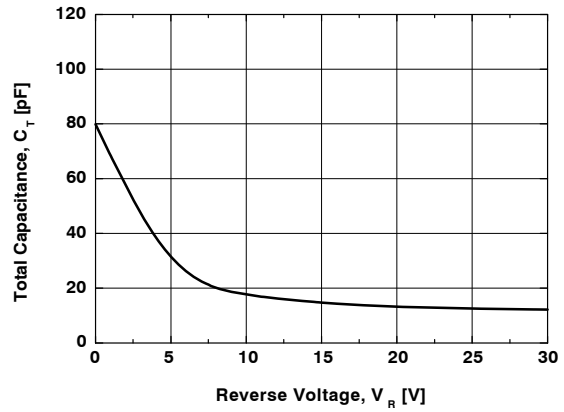
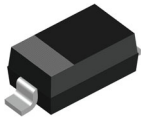


Figure 4. Total Capacitance

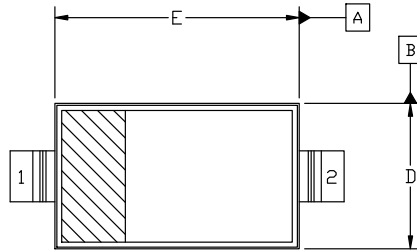
# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

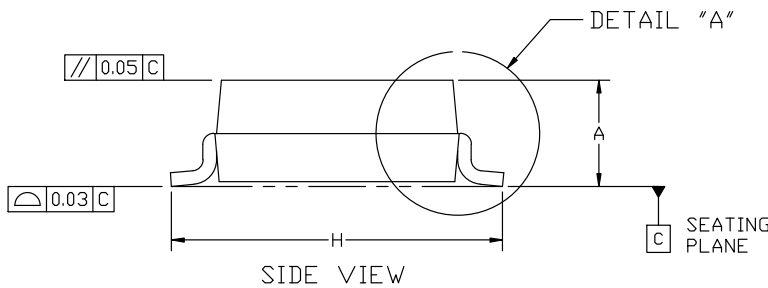


**SOD-123 2L 1.60x2.69x1.16**  
**CASE 425**  
**ISSUE H**

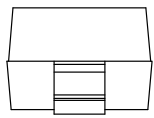
DATE 29 FEB 2024



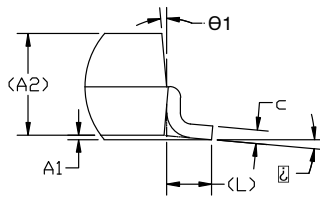
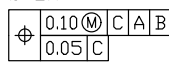
TOP VIEW



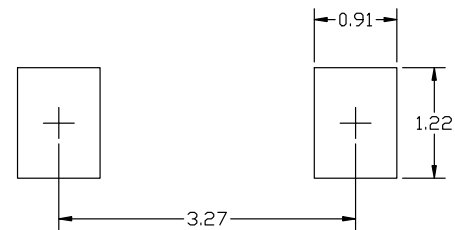
SIDE VIEW



END VIEW



DETAIL "A"



**RECOMMENDED MOUNTING FOOTPRINT**  
 \*For additional information on or Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference manual SOLDERM/D.

NOTES:

1. DIMENSION AND TOLERANCING PER ASME Y14.5M, 2018
2. CONTROLLING DIMENSION: MILLIMETERS

DIM	MILLIMETER		
	MIN.	NOM.	MAX.
A	0.94	1.17	1.35
A1	0.00	0.05	0.10
A2	1.16 REF.		
b	0.51	0.61	0.71
c	-	-	0.15
D	1.40	1.60	1.80
E	2.54	2.69	2.84
H	3.56	3.68	3.86
L	0.25 REF.		
∠	0°		10°
θ1	0°		10°

**GENERIC MARKING DIAGRAM\***



XXX = Specific Device Code  
 M = Date Code  
 ■ = Pb-Free Package

(Note: Microdot may be in either location)

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present. Some products may not follow the Generic Marking.

STYLE 1:  
 PIN 1. CATHODE  
 2. ANODE

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