

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_A = 25°C unless otherwise noted)

Symbol	Description	Value	Unit
V _{RRM}	Maximum Repetitive Reverse Voltage	30	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	°C
T _{Jmax}	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_A = 25°C unless otherwise noted)

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

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



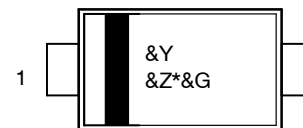
ON Semiconductor®

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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

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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	μA
		$V_R = 30\text{ V}$		130	μA
		$V_R = 30\text{ V}, T_A = 100^\circ\text{C}$		5	mA

TYPICAL PERFORMANCE CHARACTERISTICS

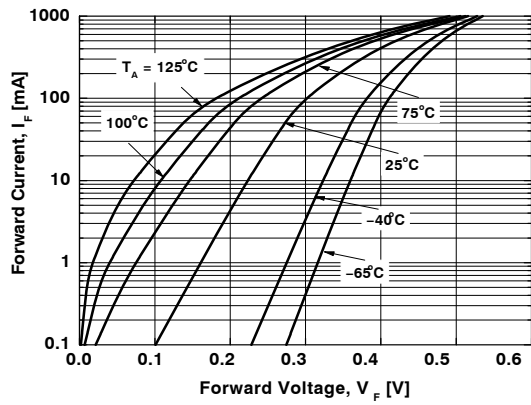


Figure 1. Forward Current vs. Forward Voltage

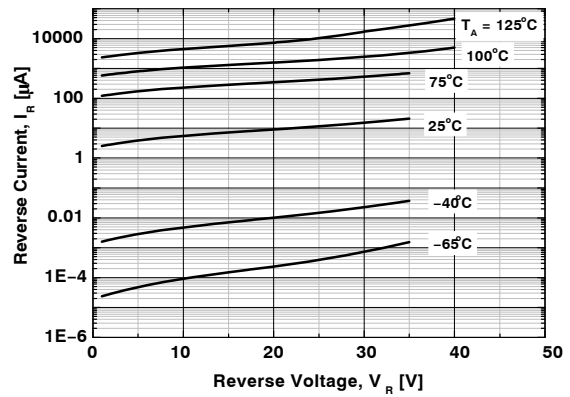


Figure 2. Reverse Current vs. Reverse Voltage

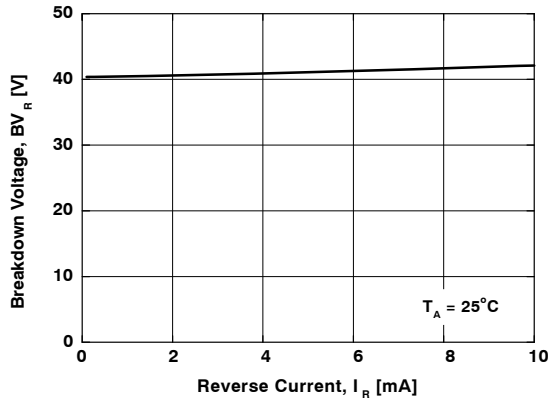


Figure 3. Breakdown Voltage vs. Reverse Current

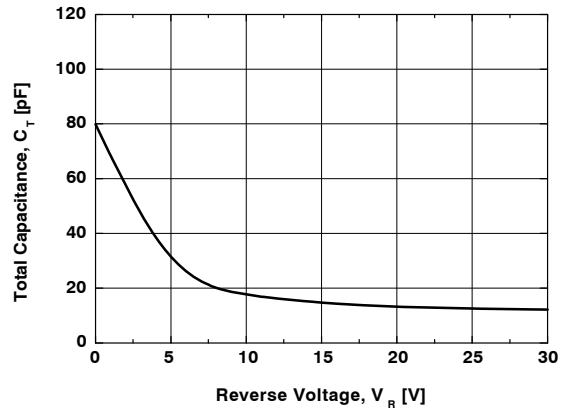
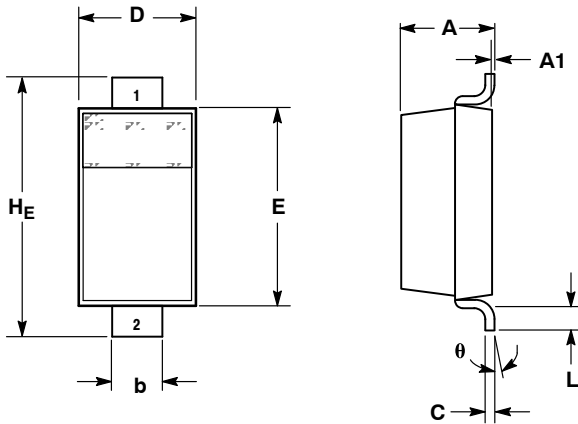


Figure 4. Total Capacitance

MBR0530

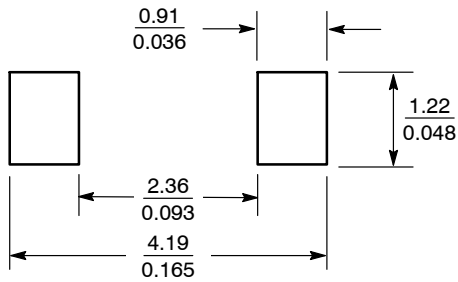
SOD – 123
CASE 425 – 04
ISSUE G



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.94	1.17	1.35	0.037	0.046	0.053
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.51	0.61	0.71	0.020	0.024	0.028
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
HE	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---
θ	0°	---	10°	0°	---	10°

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)

*For additional information on our Pb – Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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