

## Product Summary

$V_{RRM}$ (V)	$I_o$ (A)	$V_F$ (MAX) (V) @ +25°C	$I_R$ (MAX) (mA) @ +25°C
150	5	0.92	0.008

## Description

High-voltage Schottky rectifier suited for switch mode power supplies and other power converters. This device is intended for use in medium-voltage operation, and particularly, in high-frequency circuits where low switching losses and low noise are required.

The MBR5H150 is available in standard DO-27 packages.

## Applications

- Power Supply-Output Rectification
- Power Management
- Instrumentation

## Features

- Low Forward Voltage: 0.92V @ +25°C
- High Surge Current Capacity
- +175°C Operating Junction Temperature
- 5A Total
- Guard-Ring for Stress Protection
- Pb-Free and Halogen-Free Packages are available
- The Plastic Material Carries UL Recognition 94V-0
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

- Case: DO-27
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Weight (Approximately): 1.2 grams



DO-27

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

## Pin Assignments

(Top View)



DO-27

**Ordering Information** (Notes 3)

Package	Part Number	Marking ID	Packing	Status	Replacement
DO-27	MBR5H150VPTR-E1	515VP	500 Pieces/Ammo	NRND	—

Note: 3: NRND: Not recommended for new design.

**Marking Information**

(1) DO-27

(Top View)



First Line: Logo and Date Code  
 Y: Year  
 WW: Work Week of Molding  
 A: Assembly House Code  
 Second Line: Marking ID  
 (See Ordering Information)

## Maximum Ratings (Per Diode Leg) (Note 4)

Characteristic	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	150	V
Average Rectified Forward Current (Rated $V_R$ , $T_C = +150^\circ\text{C}$ )	$I_{F(AV)}$	5	A
Non Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Half Wave, Single Phase, 60Hz)	$I_{FSM}$	125	A
Operating Junction Temperature Range (Note 5)	$T_J$	+175	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +175	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ )	dv/dt	10000	V/ $\mu\text{s}$
ESD (Machine Model = C)	—	>400	V
ESD (Human Body Model = 3B)	—	>8000	V

- Notes:
- Stresses greater than those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions* is not implied. Exposure to *Absolute Maximum Ratings* for extended periods may affect device reliability.
  - The heat generated must be less than the thermal conductivity from Junction to Ambient:  $dP_D/dT_J < 1/\theta_{JA}$ .

## Thermal Characteristics

Characteristic	Symbol	Rating	Unit
Maximum Thermal Resistance (Junction to Case) (Note 6)	$R_{\theta JC}$	10	$^\circ\text{C}/\text{W}$
Maximum Thermal Resistance (Junction to Ambient) (Note 6)	$R_{\theta JA}$	40	

- Note: 6. Device mounted on heat sink, with minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.

## Electrical Characteristics

Characteristic	Symbol	Rating	Unit	Test Condition
Maximum Instantaneous Forward Voltage Drop (Note7)	$V_F$	0.92	V	$I_F = 5\text{A}$ , $T_C = +25^\circ\text{C}$
Maximum Instantaneous Reverse Current (Note 7)	$I_R$	8.0	$\mu\text{A}$	Rated DC Voltage, $T_C = +25^\circ\text{C}$
		50.0	mA	Rated DC Voltage, $T_C = +150^\circ\text{C}$

- Note: 7. Short duration pulse test used to minimize self-heating effect, Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

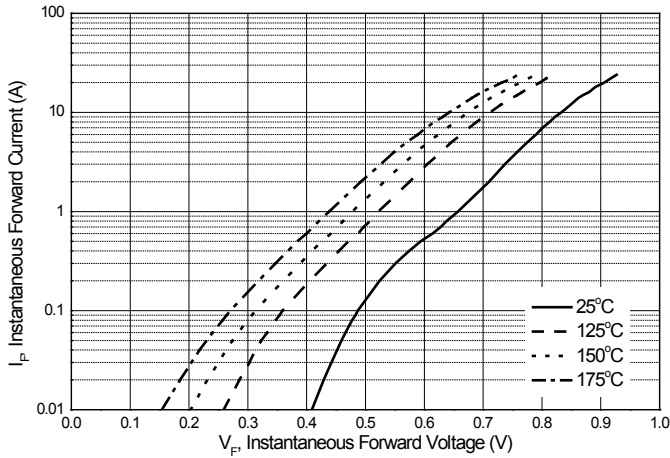


Figure 1. Typical Forward Characteristics

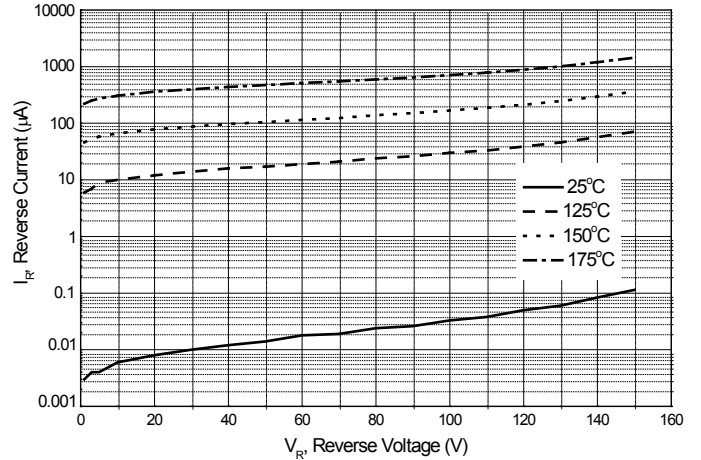


Figure 2. Typical Reverse Characteristics

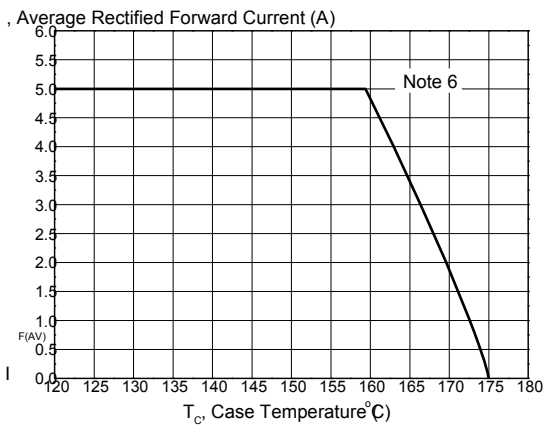


Figure 3. Average Rectified Forward Current vs Case Temperature

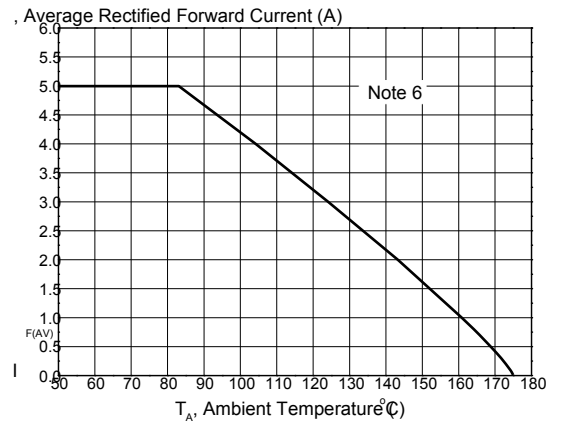


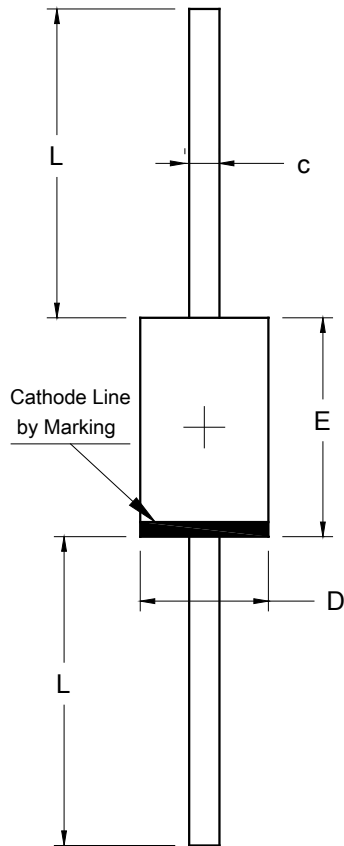
Figure 4. Average Rectified Forward Current vs Ambient Temperature

**Package Outline Dimensions** (All dimensions in mm(inch).)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

Package Type: DO-27

DO-27



DO-27		
Dim	Min	Max
$c\varnothing$	1.200	1.300
$D\varnothing$	5.000	5.600
E	8.500	9.500
L	25.400	--
All Dimensions in mm		

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