

HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MBR5H150

General 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 and DO-27(A) packages.

Features

- High Surge Capacity
- Low Forward Voltage Drop
- 175°C Operating Junction Temperature
- Guard-Ring for Stress Protection
- Pb-Free and Halogen-Free Packages are available
- The Plastic Material Carries UL Recognition 94V-0

Main Product Characteristics

$I_{F(AV)}$	5A
V_{RRM}	150V
T_J	175°C
$V_{F(max)}$	0.92V

Mechanical Characteristics

- Case: JEDEC DO-201AD Molded Plastic
- Epoxy Meets UL 94 V-0@ 0.125 in
- Weight (Approximately): 1.2 Grams
- Finish: All External Surfaces Corrosion Resistant and Terminal

Applications

- Power Supply – Output Rectification
- Power Management
- Instrumentation

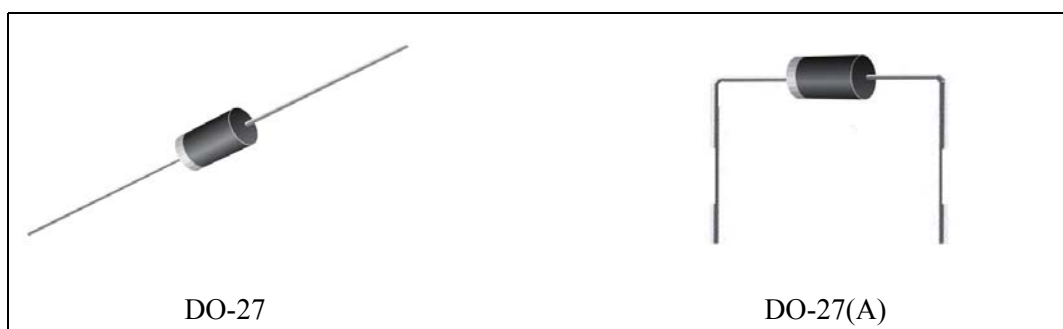


Figure 1. Package Type of MBR5H150

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MBR5H150

Pin Configuration

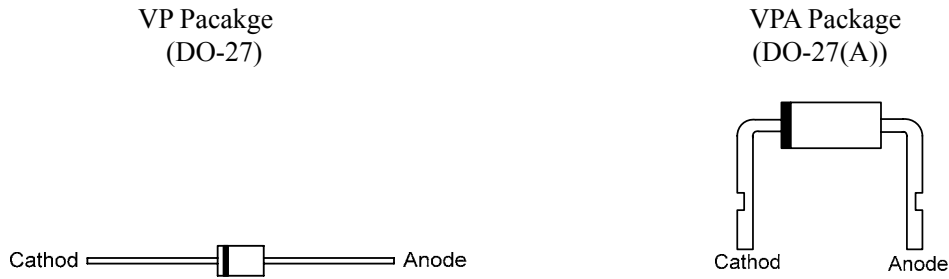
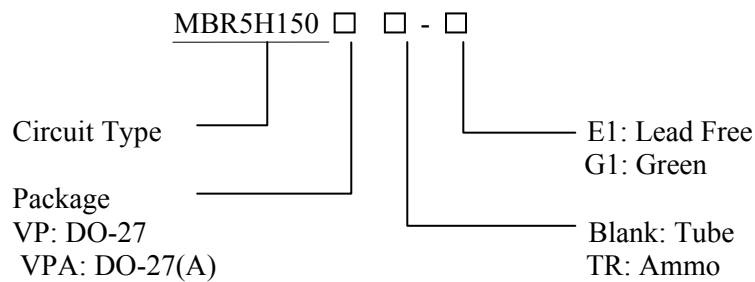


Figure 2. Pin Configuration of MBR5H150 (Top View)

Ordering Information



Package	Part Number		Marking ID		Packing Type
	Lead Free	Green	Lead Free	Green	
DO-27	MBR5H150VP-E1	MBR5H150VP-G1	515VP	515VPG	Bulk
	MBR5H150VPTR-E1	MBR5H150VPTR-G1	515VP	515VPG	Ammo
DO-27(A)	MBR5H150VPA-E1	MBR5H150VPA-G1	515VP	515VPG	Bulk

BCD Semiconductor's Pb-free products, as designated with "E1" suffix in the part number, are RoHS compliant. Products with "G1" suffix are available in green packages.

**HIGH VOLTAGE POWER SCHOTTKY RECTIFIER****MBR5H150****Absolute Maximum Ratings (Per Diode Leg) (Note 1)**

Parameter	Symbol	Value	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 2)	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/ μs
ESD Ratings: Machine Model = C Human Body Model =3B		> 400 > 8000	V

Note 1: 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.

Note 2: The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/\theta_{JA}$.

Recommended Operating Conditions

Parameter	Symbol	Condition	Value	Unit
Maximum Thermal Resistance	θ_{JC}	Junction to Case	TBD	$^\circ\text{C}/\text{W}$
	θ_{JA}	Junction to Ambient	TBD	

Electrical Characteristics

Parameter	Symbol	Conditions	Value	Units
Maximum Instantaneous Forward Voltage Drop (Note 3)	V_F	$I_F=5\text{A}$, $T_C=25^\circ\text{C}$	0.92	V
Maximum Instantaneous Reverse Current (Note 3)	I_R	Rated DC Voltage, $T_C=25^\circ\text{C}$	8.0	μA
		Rated DC Voltage, $T_C=150^\circ\text{C}$	50.0	mA

Note 3: Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.



Typical Performance Characteristics

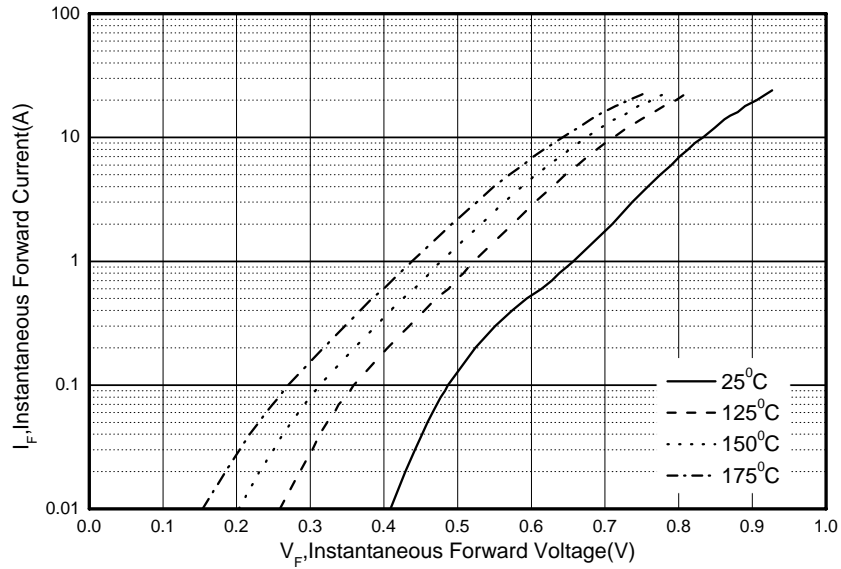


Figure 3. Typical Forward Characteristics

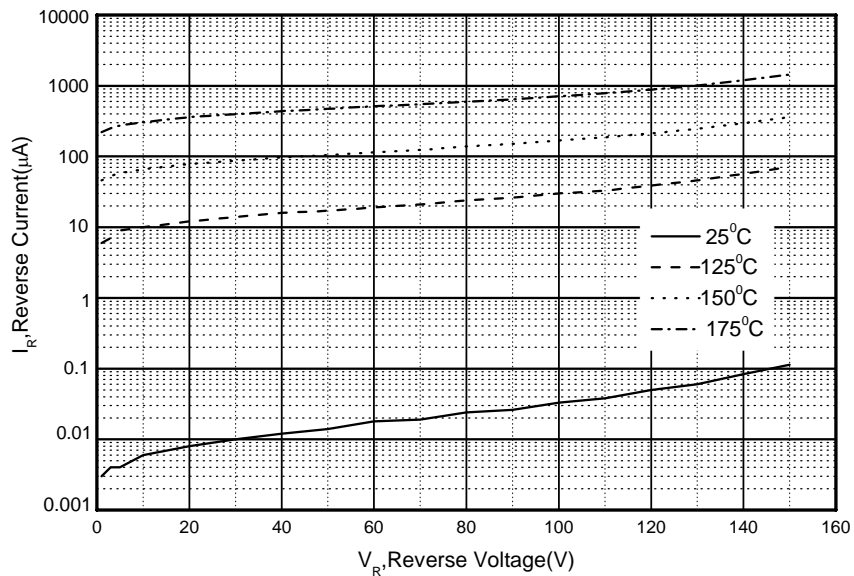


Figure 4. Typical Reverse Characteristics



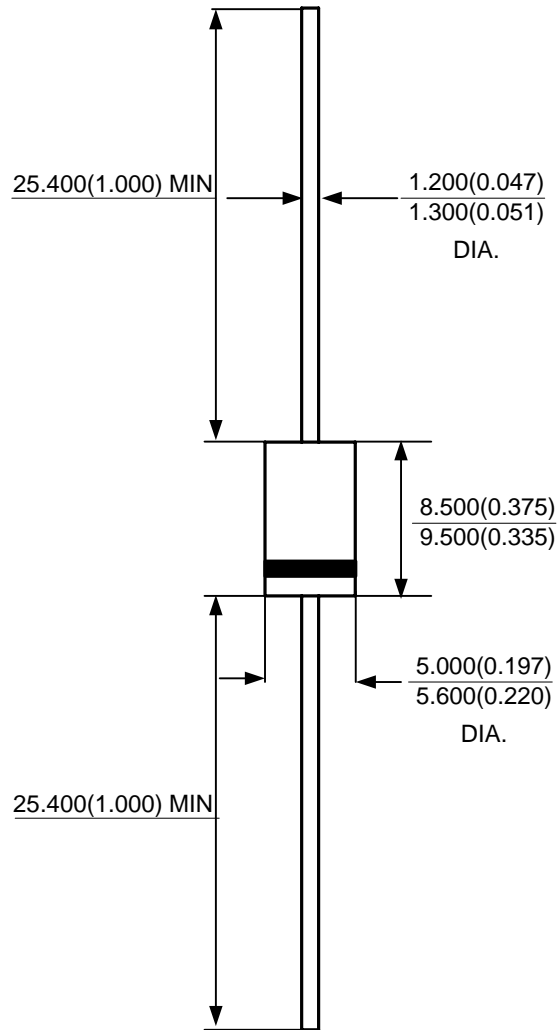
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MBR5H150

Mechanical Dimensions

DO-27

Unit: mm(inch)



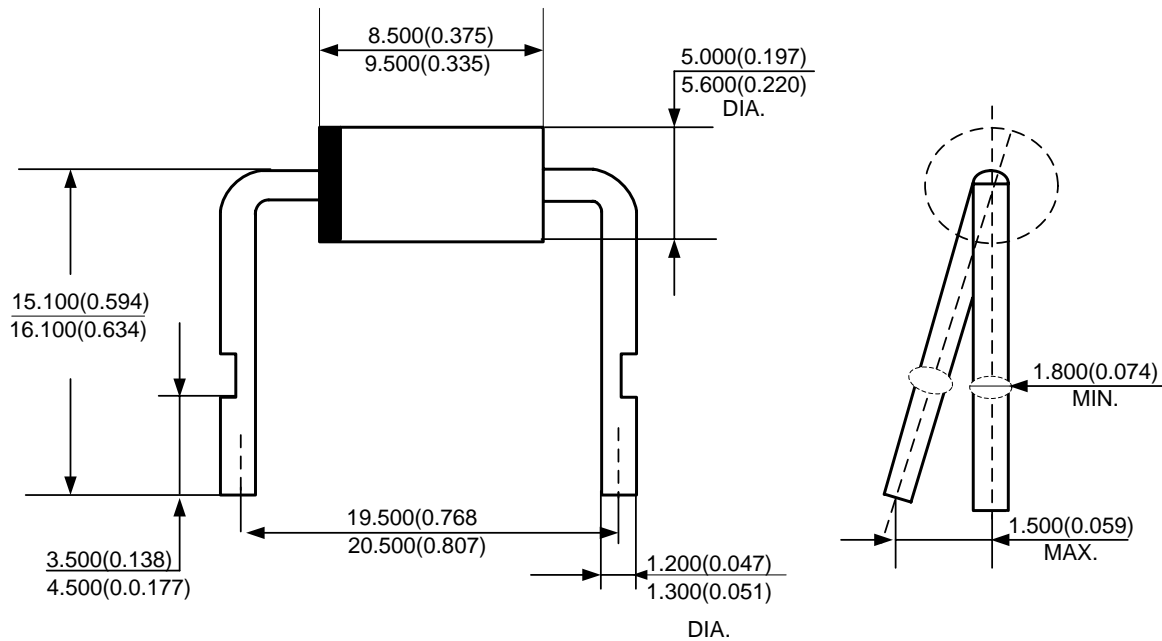
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MBR5H150

Mechanical Dimensions (Continued)

DO-27(A)

Unit: mm(inch)





BCD Semiconductor Manufacturing Limited

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