



**THE DATASHEET OF  
MBR2150VGTR-E1**



## Product Summary

$V_{RRM}$ (V)	$I_O$ (A)	$V_F$ (MAX) (V) @ +25°C	$I_R$ (MAX) (mA) @ +25°C
150	2	0.85	0.1

## Description

The MBR2150 is a high-voltage Schottky rectifier suited for switch-mode power supplies and other power converters. This device is intended for use in medium-voltage operations—particularly high-frequency circuits where low-switching losses and low noise are required.

The MBR2150 is available in standard DO-214AC and DO-15 packages.

## Applications

- Power Supply-Output Rectification
- Power Management
- Instrumentation



DO-214AC



DO-15

- 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.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

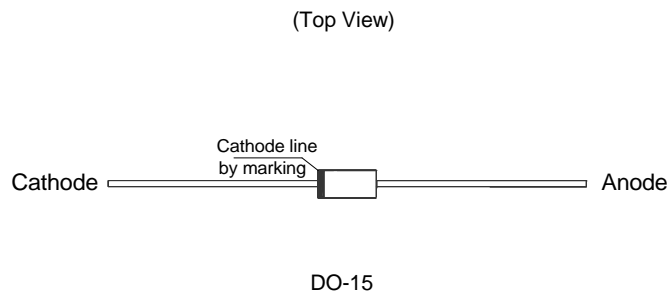
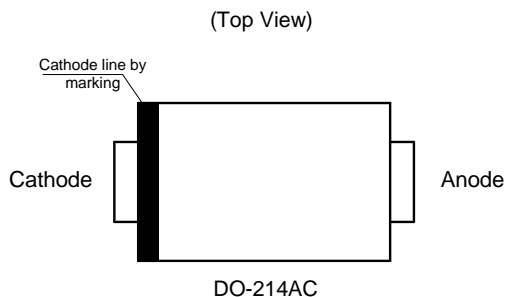
## Features

- Low Forward Voltage: 0.85V at +25°C
- High Surge Current Capacity
- Operating Junction Temperature: +150°C
- Guard-Ring for Stress Protection
- 2A Total
- Lead-Free Packages Available
- DO-214AC and DO-15
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in "Green" Packages: DO-214AC and DO-15
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
  - **Halogen and Antimony Free. "Green" Device (Note 3)**

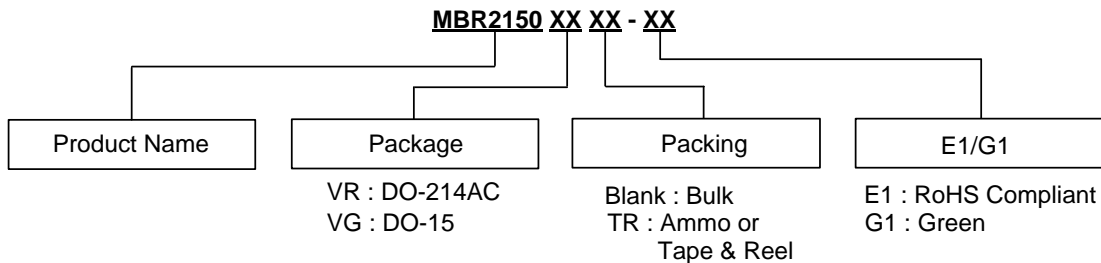
## Mechanical Data

- Case: DO-214AC and DO-15
- 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 (E3)
- Weight:
  - DO-15—0.39 grams (Approximately)
  - DO-214AC—0.062 grams (Approximately)

## Pin Assignments



**Ordering Information** (Note 4)



Note: 4. Diodes IC's lead-free products, as designated with "E1" suffix in the part number, are RoHS compliant. Products with "G1" suffix are available in green packages.



Package	Part Number	Marking ID	Packing
DO-214AC	MBR2150VRTR-G1	2150VR	7500/Tape & Reel
DO-15	MBR2150VGTR-E1	2150VG	1500/Ammo

**Marking Information**

(1) DO-214AC

(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)

**Marking Information** (continued)

(2) DO-15

(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)

**Absolute Maximum Ratings** (Note 5)

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 $V_R$ , $T_C = TBD$ )	$I_{F(AV)}$	2	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Half-Wave, Single-Phase, 60Hz)	$I_{FSM}$	75	A
Operating Junction Temperature Range (Note 6)	$T_J$	-65 to +150	°C
Storage Temperature Range	$T_{STG}$	-65 to +150	°C
Voltage Rate of Change (Rated $V_R$ )	dv/dt	10,000	V/ $\mu$ s
ESD (Machine Model = C)	—	400	V
ESD (Human Body Model = 3B)	—	8000	V

Notes: 5. 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.  
 6. 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 Lead) (Note 7)	R $\theta_{JL}$	DO-214AC	23	°C/W
		DO-15		
Maximum Thermal Resistance (Junction to Ambient) (Note 7)	R $\theta_{JA}$	DO-214AC	90	
		DO-15	80	

Note: 7. Device mounted on heat sink with minimum recommended pad layout per <http://www.diodes.com>.

**Electrical Characteristics**

Characteristic	Symbol	Rating	Unit	Test Condition
Maximum Instantaneous Forward Voltage Drop (Note 8)	V <sub>F</sub> (MAX)	0.85	V	I <sub>F</sub> = 2A, T <sub>C</sub> = +25°C
		0.67		I <sub>F</sub> = 2A, T <sub>C</sub> = +125°C
Maximum Instantaneous Reverse Current (Note 8)	I <sub>R</sub> (MAX)	0.1	mA	Rated DC Voltage, T <sub>C</sub> = +25°C
		2.0		Rated DC Voltage, T <sub>C</sub> = +125°C

Note: 8. Short-duration pulse test used to minimize self-heating effect. Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.

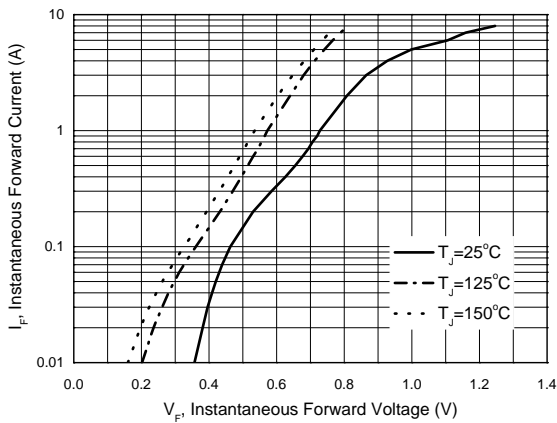


Figure 1. Typical Forward Characteristics

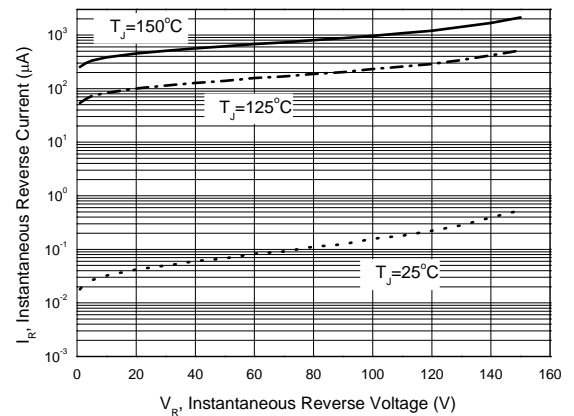
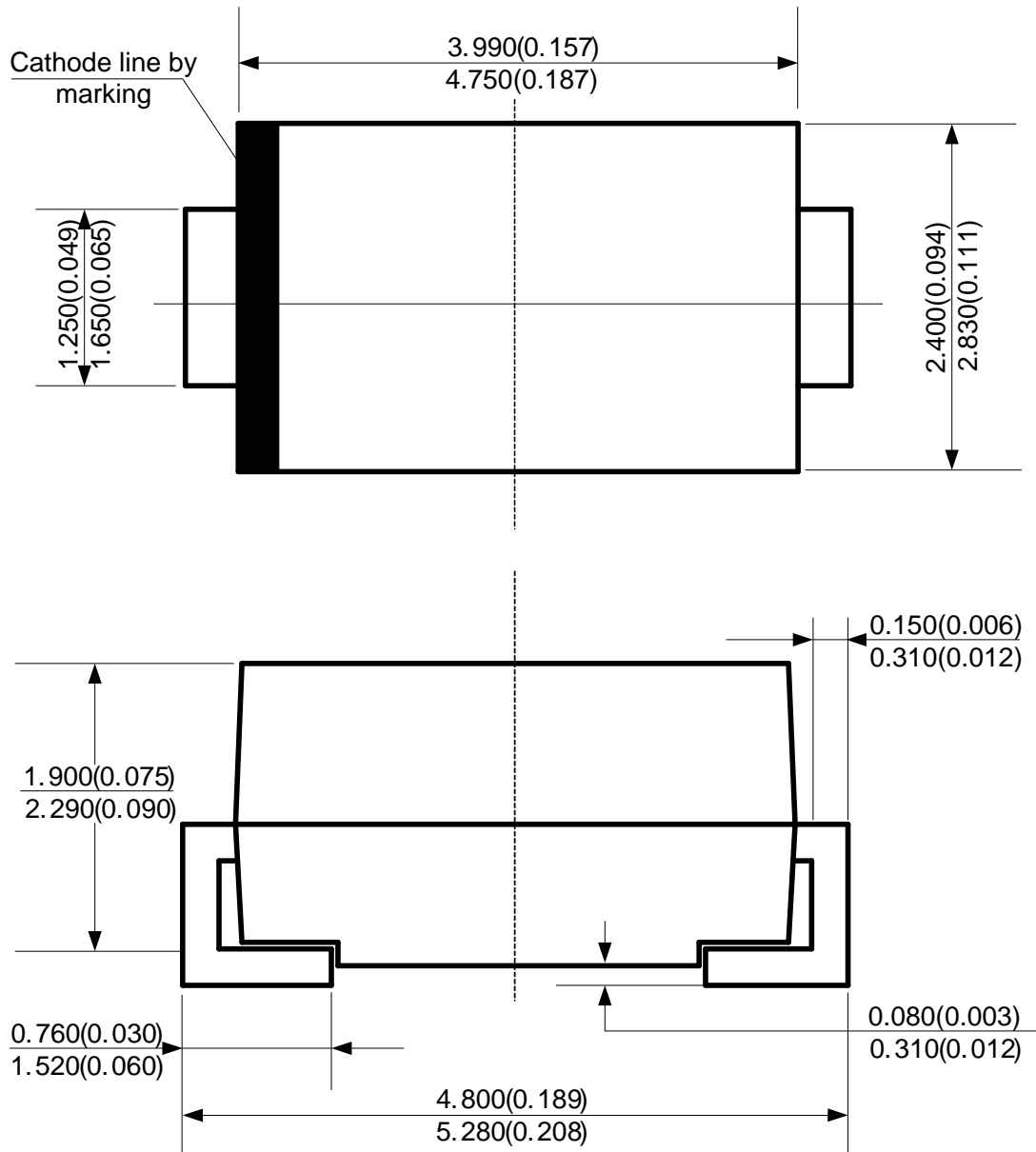


Figure 2. Typical Reverse Characteristics

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

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

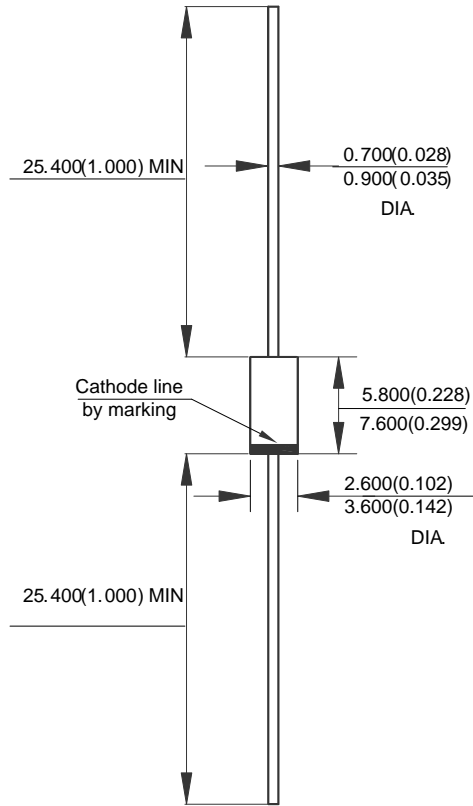
(1) Package Type: DO-214AC



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

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

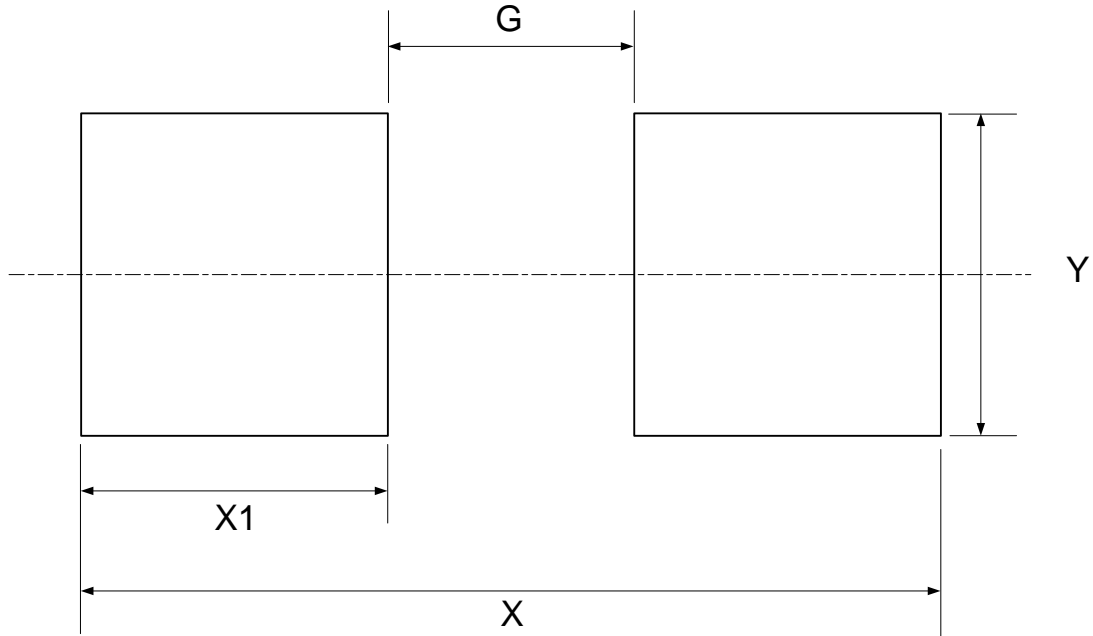
**(2) Package Type: DO-15**



**Suggested Pad Layout**

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

(1) Package Type: DO-214AC



Dimensions	Y (mm)/(inch)	X1 (mm)/(inch)	G (mm)/(inch)	X (mm)/(inch)
Value	2.100/0.083	2.000/0.079	1.600/0.063	5.600/0.220

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