HIGH VOLTAGE POWER SCHOTTKY RECTIFIER MBR2150

General Description

The MBR2150 is a high voltage dual 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 MBR2150 is available in standard DO-214AC and DO-15 packages.

Main Product Characteristics

$I_{F(AV)}$	2A
V_{RRM}	150V
T_J(MAX)	150°C
V_F(MAX) (I_F=2A, T_C=125°C)	0.67V

Features

- Low Forward Voltage: 0.67V at 125°C
- High Surge Capacity
- Operating Junction Temperature: 150°C
- Guard−ring for Stress Protection
- Lead Free Packages Available

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94V-0 @ 0.125in
- Weight (Approximately): 1.9Grams
- Finish: All External Surfaces Corrosion Resistant and Terminal
- Leads are Readily Solderable
- Lead Temperature for Soldering Purpose: 260°C Maximum for 10 Seconds

Applications

- Power Supply − Output Rectification
- Power Management
- Instrumentation

Figure 1. Package Types of MBR2150

Pin Configuration

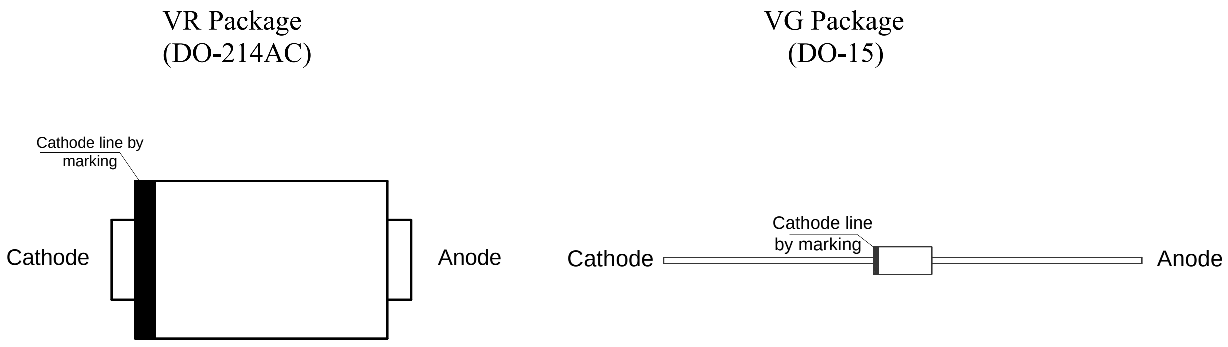
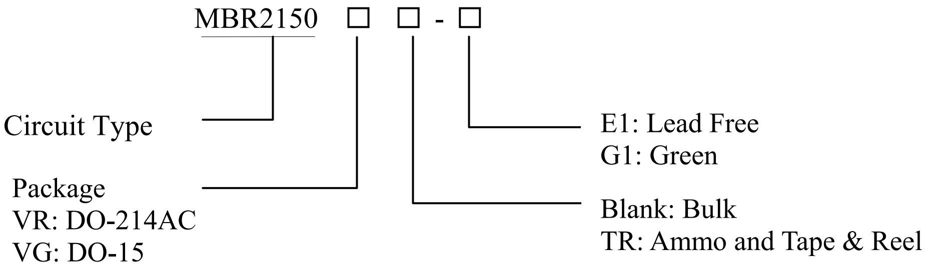


Figure 2. Pin Configuration of MBR2150 (Top View)

Ordering Information



Package	**Part Number**		**Marking ID**		**Packing Type**
	Lead Free	**Green**	**Lead Free**	**Green**	
DO-214AC	MBR2150VRTR-E1	MBR2150VRTR-G1	2150VE	2150VR	Tape & Reel
DO-15	MBR2150VG-E1	MBR2150VG-G1	2150VG	2150GG	Bulk
	MBR2150VGTR-E1	MBR2150VGTR-G1	2150VG	2150GG	Ammo

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.

Absolute Maximum Ratings (Note 1)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	150	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
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 2)	T_J	-65 to 150	°C
Storage Temperature Range	T_{STG}	-65 to 150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10000	V/μs
ESD (Machine Model=C)		400	V
ESD (Human Body Model=3B)		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_{JL}	Junction to Lead	DO-214AC	23	°C/W
			DO-15		
	θ_{JA}	Junction to Ambient	DO-214AC	90	
			DO-15	80	

Electrical Characteristics

Parameter	Symbol	Conditions	Value	Unit
Maximum Instantaneous Forward Voltage Drop (Note 3)	V_F (MAX)	I_F=2A, T_C=25℃	0.85	V
		I_F=2A, T_C=125°C	0.67	
Maximum Instantaneous Reverse Current (Note 3)	I_R (MAX)	Rated DC Voltage, T_C=25°C	0.1	mA
		Rated DC Voltage, T_C=125°C	2.0	

Note 3: Pulse Test: Pulse Width=300μs, Duty Cycle≲2.0%.

Typical Performance Characteristics

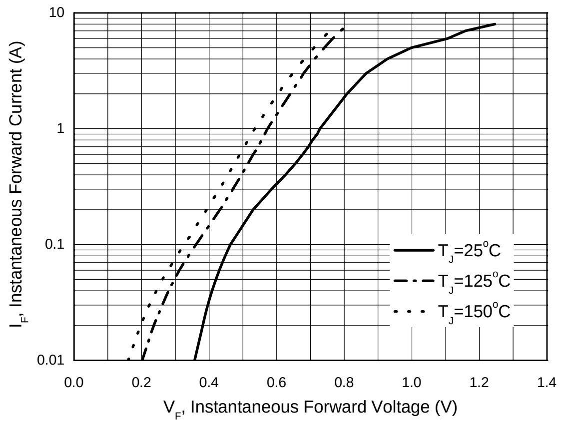


Figure 4. Typical Forward Characteristics

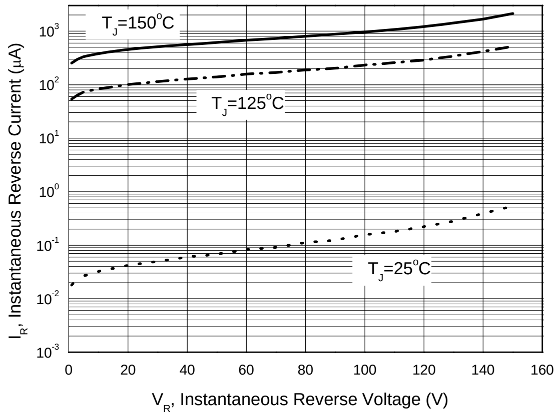
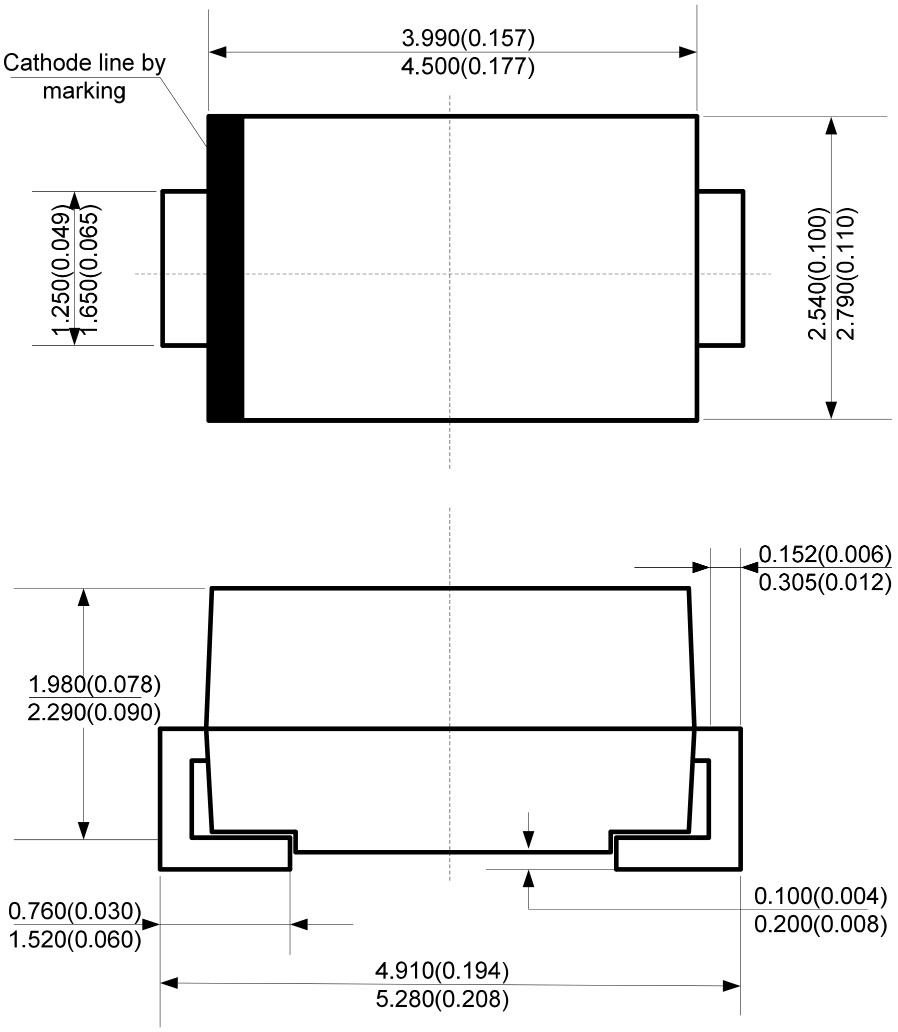


Figure 5. Typical Reverse Characteristics

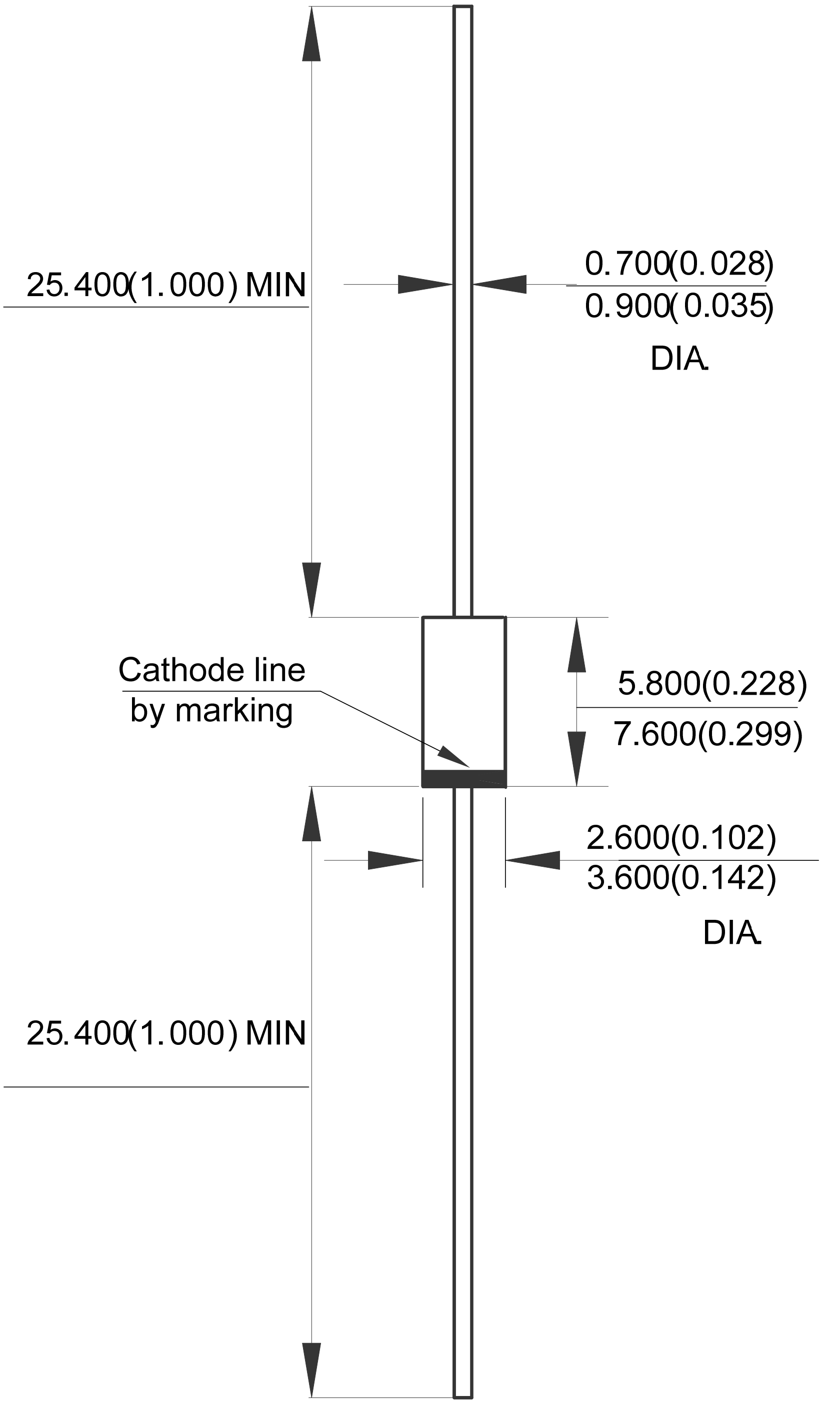
Mechanical Dimensions

DO-214AC **Unit: mm(inch)**



Mechanical Dimensions (Continued)

DO-15 **Unit: mm(inch)**



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