MBR350, MBR360

MBR360 is a Preferred Device

Axial Lead Rectifiers

These devices employ the Schottky Barrier principle in a large area metal−to−silicon power diode. State−of−the−art geometry features epitaxial construction with oxide passivation and metal overlap contact. Ideally suited for use as rectifiers in low−voltage, high−frequency inverters, free wheeling diodes, and polarity protection diodes.

Features

- Extremely Low v_F
- Low Power Loss/High Efficiency
- Highly Stable Oxide Passivated Junction
- Low Stored Charge, Majority Carrier Conduction
- Pb−Free Packages are Available*

Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.1 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16 in from case
- Polarity: Cathode indicated by Polarity Band

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MBR350 MBR360	V_{RRM} V_{RWM} V_R	 50 60	V
Average Rectified Forward Current T_A = 65°C ($R_{\theta JA}$ = 28°C/W, P.C. Board Mounting)	I_O	3.0	A
Non−Repetitive Peak Surge Current (Note 1) (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz, T_L = 75°C)	I_{FSM}	80	A
Operating and Storage Junction Temperature Range (Reverse Voltage Applied)	T_J, T_{stg}	−65 to +150	°C
Peak Operating Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction−to−Ambient (see Note 4 − Mounting Data, Mounting Method 3)	$R_{\theta JA}$	28	°C/W

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. Lead Temperature reference is cathode lead 1/32 in from case.

*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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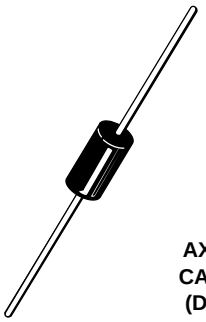
SCHOTTKY BARRIER RECTIFIERS 3.0 AMPERES 50, 60 VOLTS



AXIAL LEAD
CASE 267−05
(DO−201AD)
STYLE 1

MARKING DIAGRAM

A = Assembly Location
x = 5 or 6
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 3 of this data sheet.

Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS (T_L = 25°C unless otherwise noted) (Note 2)

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 3) (i_F = 1.0 Amp) (i_F = 3.0 Amp) (i_F = 9.4 Amp)	v_F	 0.600 0.740 1.080	V
Maximum Instantaneous Reverse Current @ Rated DC Voltage (Note 3) T_L = 25°C T_L = 100°C	i_R	 0.60 20	mA

2. Lead Temperature reference is cathode lead 1/32 in from case.
3. Pulse Test: Pulse Width = 300 μs, Duty Cycle = 2.0%.

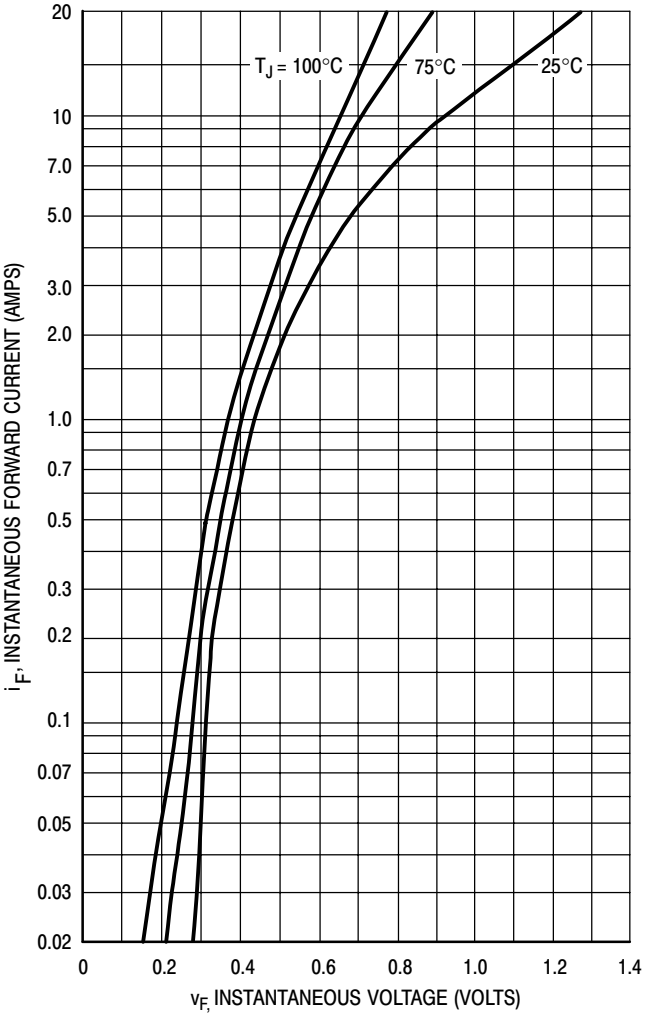


Figure 1. Typical Forward Voltage

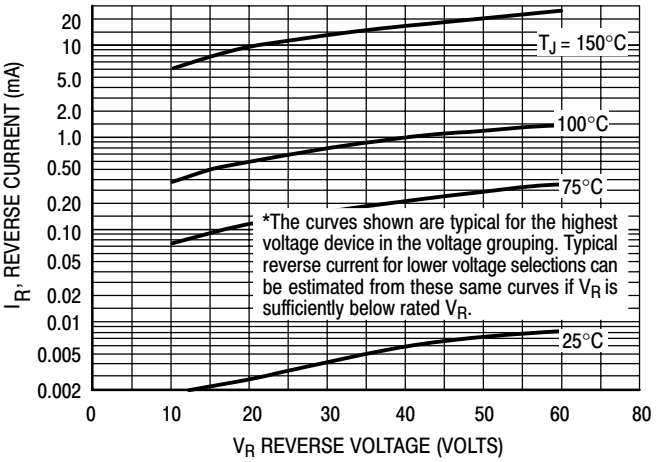


Figure 2. Typical Reverse Current*

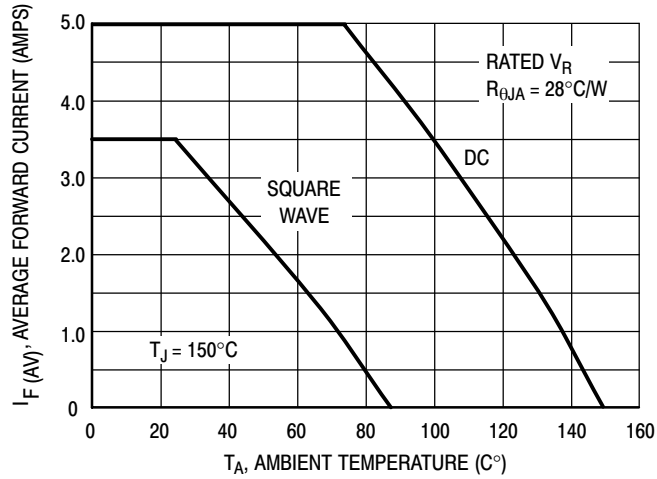


Figure 3. Current Derating Ambient
(Mounting Method 3 per Note 4)

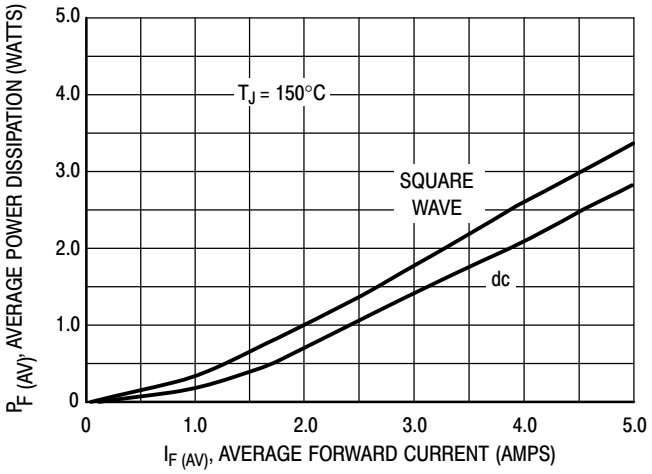


Figure 4. Power Dissipation

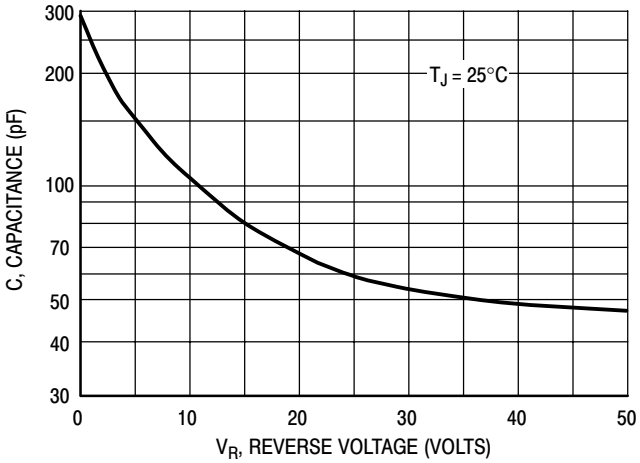


Figure 5. Typical Capacitance

NOTE 4 — MOUNTING DATA

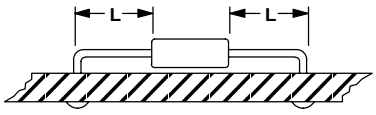
Data shown for thermal resistance junction−to−ambient ($R_{\theta JA}$) for the mountings shown is to be used as typical guideline values for preliminary engineering, or in case the tie point temperature cannot be measured.

TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

Mounting Method	Lead Length, L (in)				$R_{\theta JA}$
	1/8	1/4	1/2	3/4	
1	50	51	53	55	°C/W
2	58	59	61	63	°C/W
3	28				°C/W

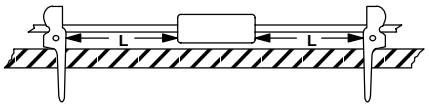
Mounting Method 1

P.C. Board where available copper surface is small.



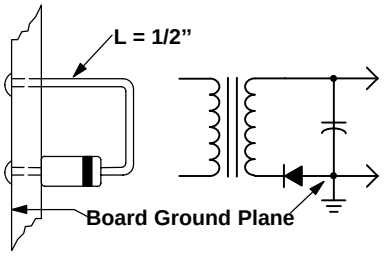
Mounting Method 2

Vector Push−In Terminals T−28



Mounting Method 3

P.C. Board with 2−1/2 in X 2−1/2 in copper surface.



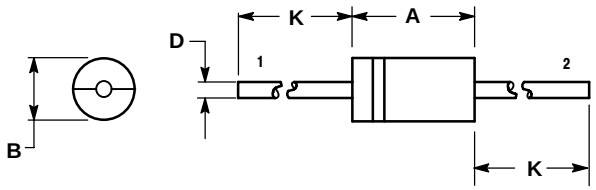
ORDERING INFORMATION

Device	Package	Shipping†
MBR350RL	Axial Lead	1500 Units / Tape & Reel
MBR350RLG	Axial Lead (Pb−Free)	1500 Units / Tape & Reel
MBR360	Axial Lead	500 Units / Bag
MBR360G	Axial Lead (Pb−Free)	500 Units / Bag
MBR360RL	Axial Lead	1500 Units / Tape & Reel
MBR360RLG	Axial Lead (Pb−Free)	1500 Units / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

PACKAGE DIMENSIONS

AXIAL LEAD
CASE 267−05
(DO−201AD)
ISSUE G



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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.287	0.374	7.30	9.50
B	0.189	0.209	4.80	5.30
D	0.047	0.051	1.20	1.30
K	1.000	---	25.40	---

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
Phone: 480−829−7710 or 800−344−3860 Toll Free USA/Canada
Fax: 480−829−7709 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center
2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
Phone: 81−3−5773−3850

ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.

MBR350/D