Axial Lead Rectifiers

MBR350, MBR360

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.

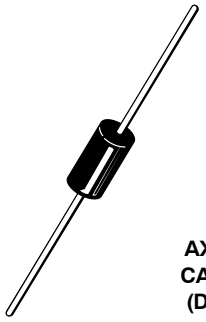
SCHOTTKY BARRIER RECTIFIERS 3.0 AMPERES 50, 60 VOLTS

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 Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Polarity: Cathode indicated by Polarity Band



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 on page 4 of this data sheet.

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

THERMAL CHARACTERISTICS

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

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, 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 **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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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 A) (i_F = 3.0 A) (i_F = 9.4 A)	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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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

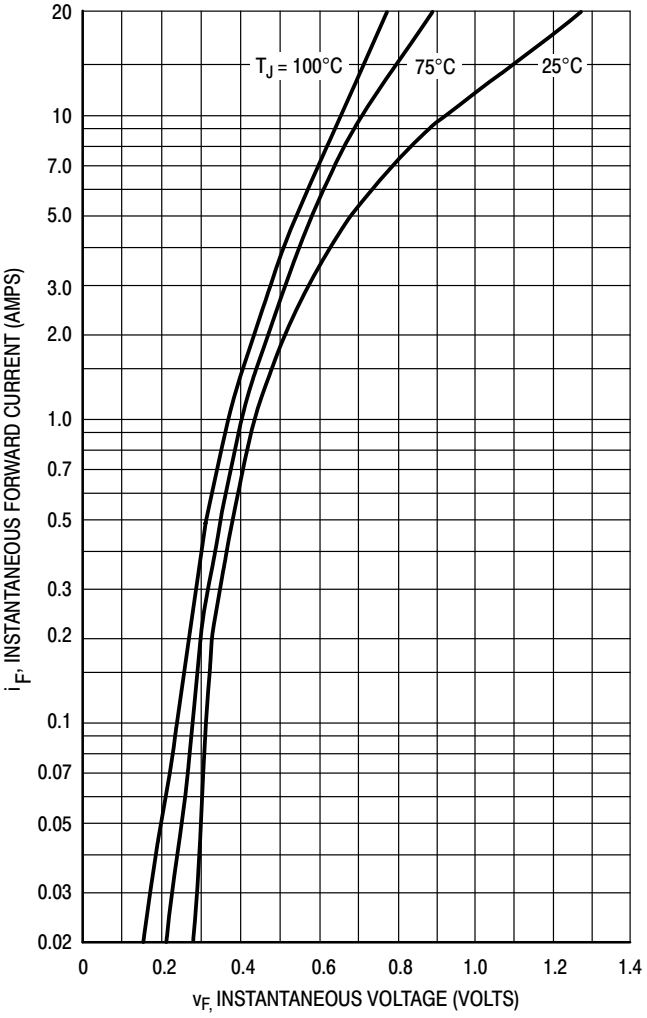


Figure 1. Typical Forward Voltage

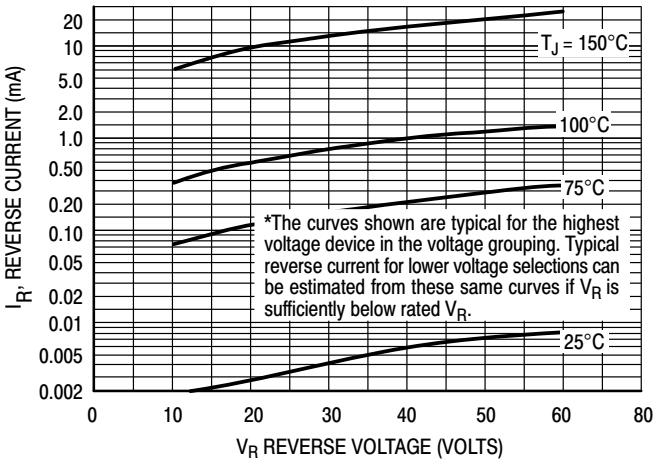


Figure 2. Typical Reverse Current*

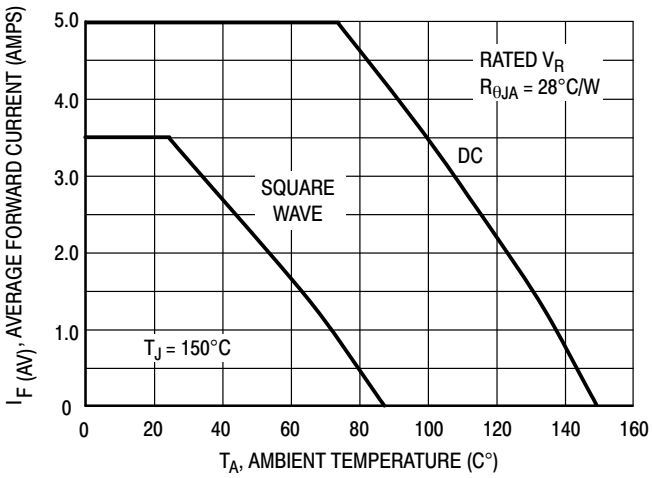


Figure 3. Current Derating Ambient
(Mounting Method 3 per Note 4)

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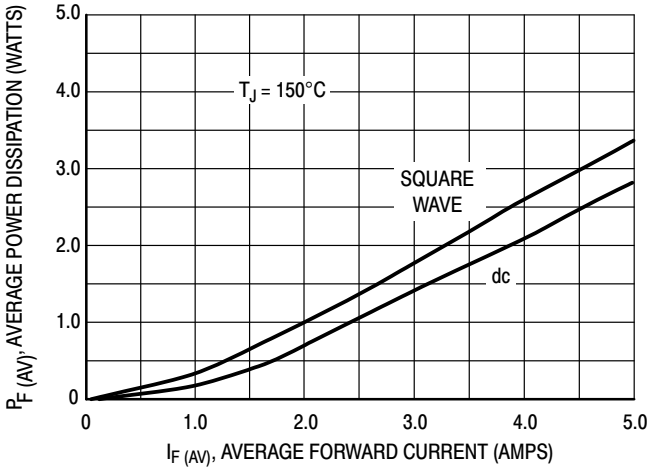


Figure 4. Power Dissipation

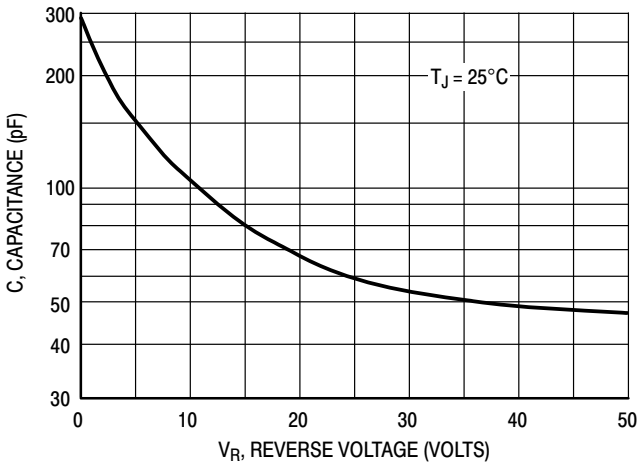


Figure 5. Typical Capacitance

NOTE 4 — MOUNTING DATA

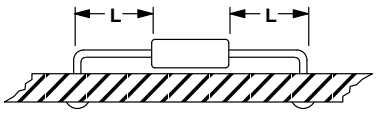
Data shown for thermal resistance, junction−to−ambient ($R_{\theta JA}$) for the mountings shown is to be used as typical guideline values for preliminary engineering, or in case the tie point temperature cannot be measured.

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

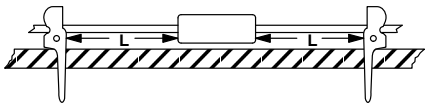
Mounting Method 1

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



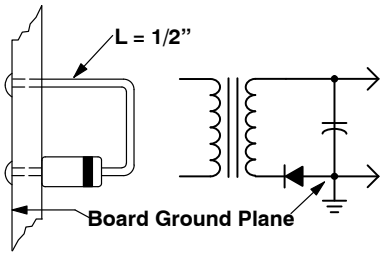
Mounting Method 2

Vector Push−In Terminals T−28



Mounting Method 3

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



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ORDERING INFORMATION

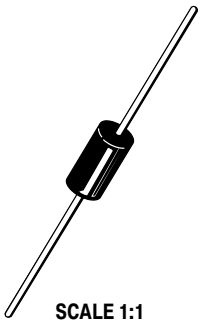
Device	Package	Shipping†
MBR350RL	Axial Lead	1500 / Tape & Reel
MBR350RLG	Axial Lead (Pb−Free)	1500 Tape & Reel
MBR360	Axial Lead	500 Units / Bag
MBR360G	Axial Lead (Pb−Free)	500 Units / Bag
MBR360RL	Axial Lead	1500 / Tape & Reel
MBR360RLG	Axial Lead (Pb−Free)	1500 / Tape & Reel

†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.

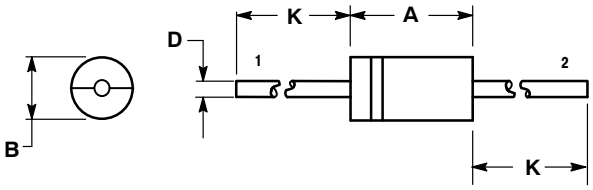
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AXIAL LEAD
CASE 267−05
ISSUE G

DATE 06 JUN 2000



SCALE 1:1



NOTES:
1. DIMENSIONS AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 267−04 OBSOLETE, NEW STANDARD 267−05.

	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

STYLE 2:
NO POLARITY

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