

**MBR320 MBR340**  
**MBR330 MBR350**  
**MBR360**

MBR340 and MBR360 are  
 Motorola Preferred Devices

**Axial Lead Rectifiers**

... employing 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.

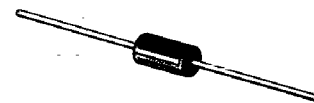
- Extremely Low  $v_f$
- Low Power Loss/High Efficiency
- Highly Stable Oxide Passivated Junction
- Low Stored Charge, Majority Carrier Conduction

**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" from case
- Shipped in plastic bags, 5,000 per bag.
- Available Tape and Reeled, 1500 per reel, by adding a "RL" suffix to the part number
- Polarity: Cathode Indicated by Polarity Band
- Marking: B320, B330, B340, B350, B360

**SCHOTTKY BARRIER  
 RECTIFIERS**

**3.0 AMPERES**  
**20, 30, 40, 50, 60 VOLTS**



**CASE 267-03  
 PLASTIC**

**MAXIMUM RATINGS**

Rating	Symbol	MBR320	MBR330	MBR340	MBR350	MBR360	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWPM}$ $V_R$	20	30	40	50	60	V
Average Rectified Forward Current $T_A = 65^\circ\text{C}$ ( $R_{\theta JA} = 28^\circ\text{C/W}$ , P.C. Board Mounting, see Note 3)	$I_O$	3.0					A
Nonrepetitive Peak Surge Current (2) (Surge applied at rated load conditions, half wave, single phase 60 Hz, $T_L = 75^\circ\text{C}$ )	$I_{FSM}$	80					A
Operating and Storage Junction Temperature Range (Reverse Voltage applied)	$T_J, T_{stg}$	-65 to 150°C					°C
Peak Operating Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	150					°C

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient, (see Note 3, Mounting Method 3)	$R_{\theta JA}$	28	°C/W

**ELECTRICAL CHARACTERISTICS ( $T_L = 25^\circ\text{C}$  unless otherwise noted )(2)**

Characteristic	Symbol	MBR320	MBR330	MBR340	MBR350	MBR360	Unit
Maximum Instantaneous Forward Voltage (1) ( $i_F = 1.0$ Amp) ( $i_F = 3.0$ Amp) ( $i_F = 9.4$ Amp)	$v_F$		0.500 0.600 0.850		0.600 0.740 1.080		V
Maximum Instantaneous Reverse Current @ Rated dc Voltage (1) $T_L = 25^\circ\text{C}$ $T_L = 100^\circ\text{C}$	$i_R$			0.60 20			mA

(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle = 2.0%.  
 (2) Lead Temperature reference is cathode lead 1/32" from case.

Rev 1

# MBR320, MBR330, MBR340, MBR350, MBR360

## MBR320, 330 AND 340

FIGURE 1 — TYPICAL FORWARD VOLTAGE

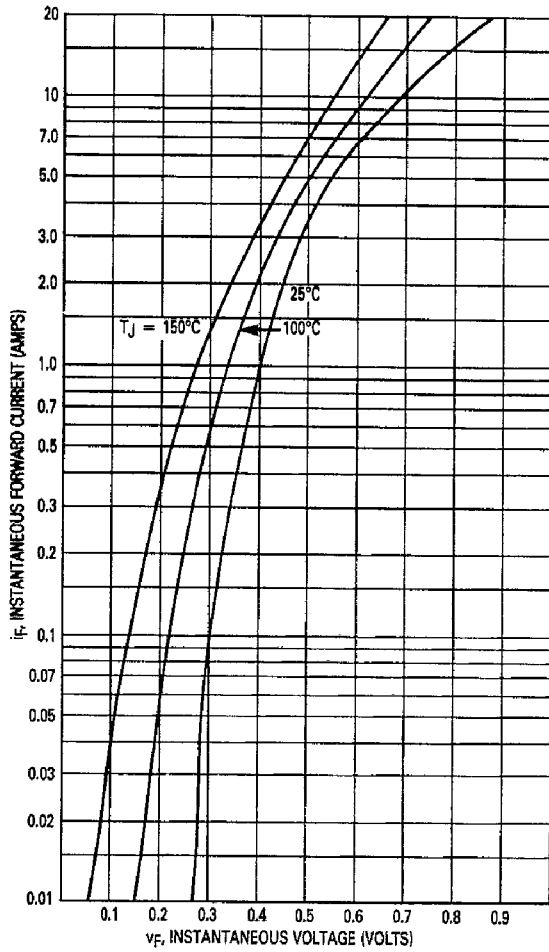
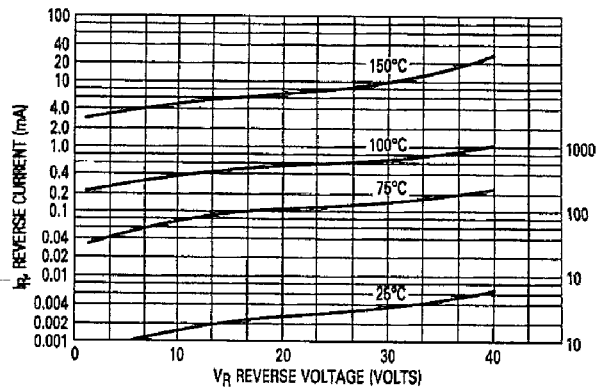


FIGURE 2 — TYPICAL REVERSE CURRENT\*



\*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if  $V_R$  is sufficiently below rated  $V_R$ .

FIGURE 3 — CURRENT DERATING (MOUNTING METHOD #3 PER NOTE 3)

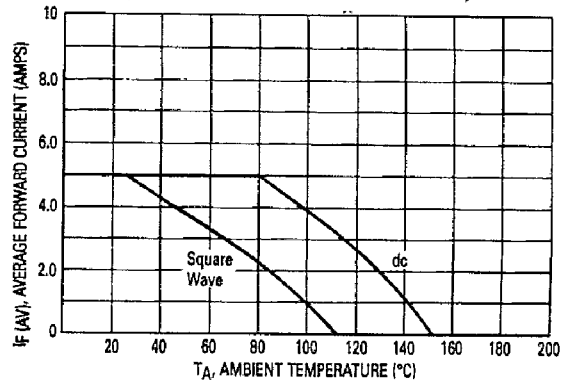


FIGURE 4 — POWER DISSIPATION

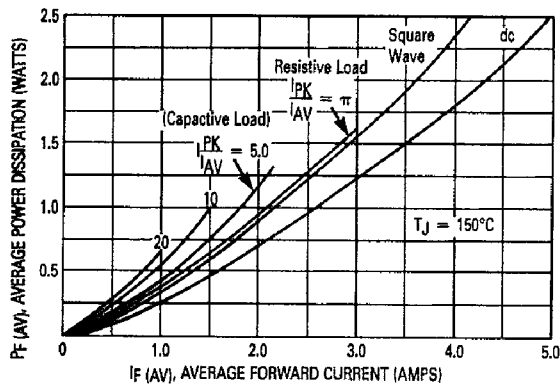
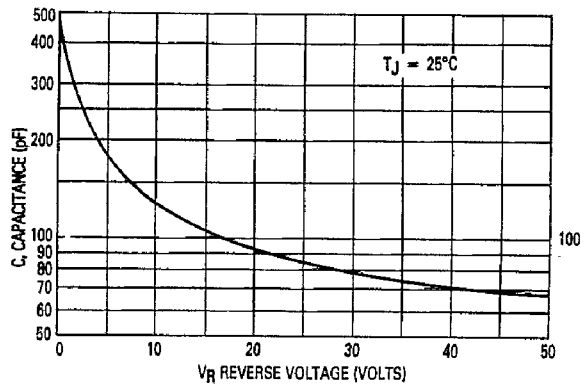


FIGURE 5 — TYPICAL CAPACITANCE



# MBR320, MBR330, MBR340, MBR350, MBR360

## MBR350 AND 360

FIGURE 6 — TYPICAL FORWARD VOLTAGE

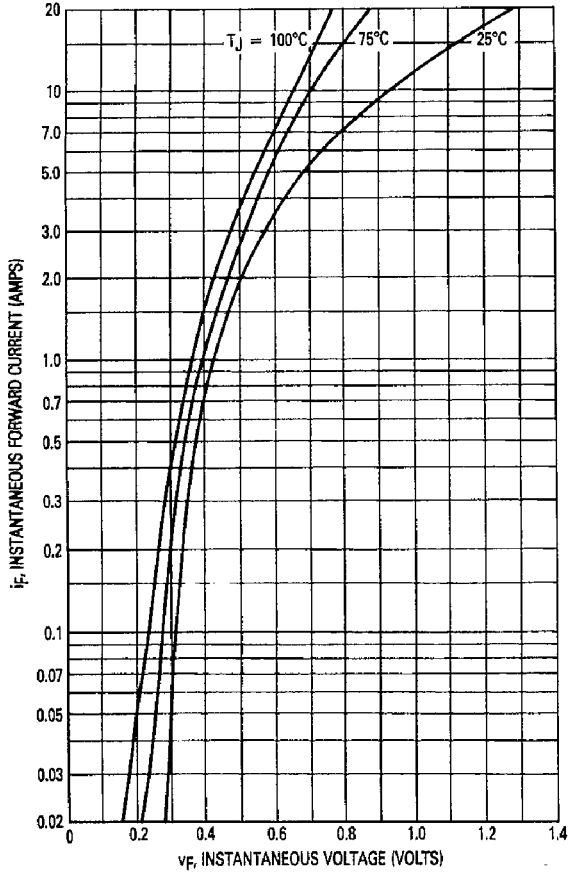


FIGURE 7 — TYPICAL REVERSE CURRENT\*

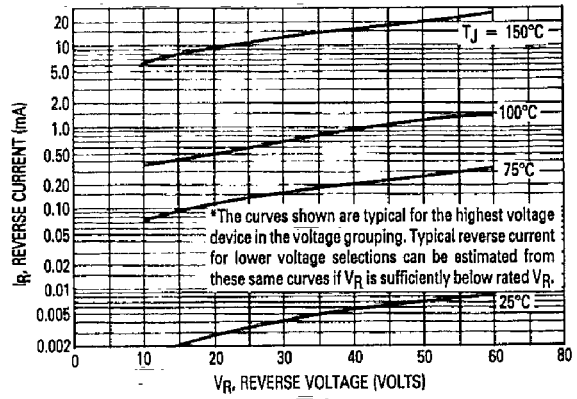


FIGURE 8 — CURRENT DERATING AMBIENT (MOUNTING METHOD #3 PER NOTE 3)

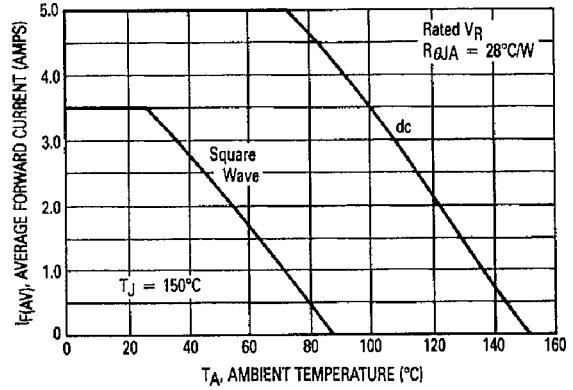


FIGURE 9 — POWER DISSIPATION

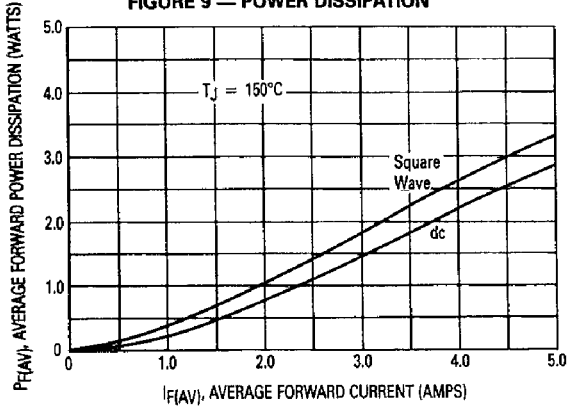
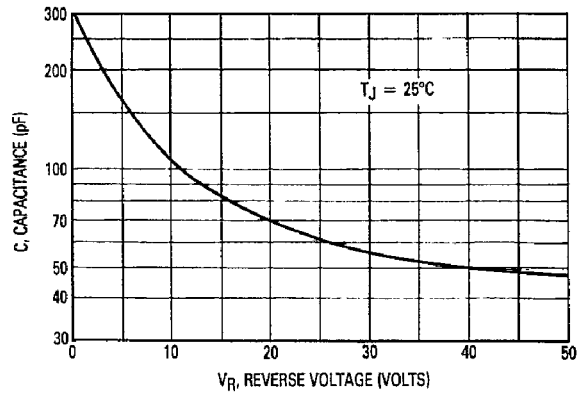


FIGURE 10 — TYPICAL CAPACITANCE



# MBR320, MBR330, MBR340, MBR350, MBR360

## NOTE 3 — MOUNTING DATA

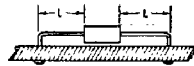
Data shown for thermal resistance junction-to-ambient ( $R_{\theta JA}$ ) for the mountings shown is to be used as typical guideline values for preliminary engineering, or in case the tie point temperature cannot be measured.

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	$^{\circ}\text{C/W}$
2	58	59	61	63	$^{\circ}\text{C/W}$
3	28				$^{\circ}\text{C/W}$

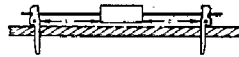
### Mounting Method 1

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  $2\text{-}1/2" \times 2\text{-}1/2"$  copper surface.

