

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 μs , 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

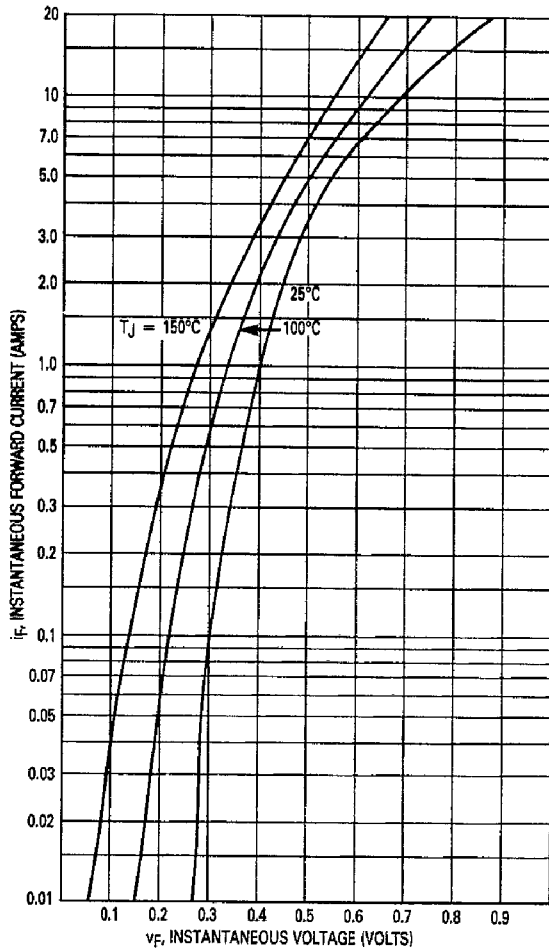
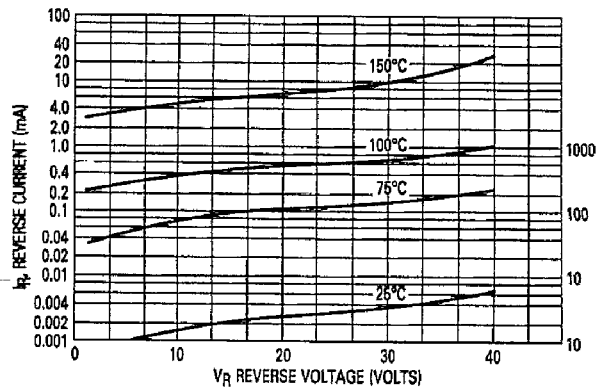


FIGURE 2 — TYPICAL REVERSE CURRENT*



*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)

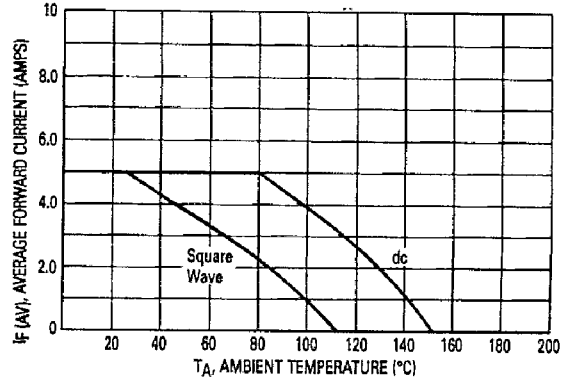


FIGURE 4 — POWER DISSIPATION

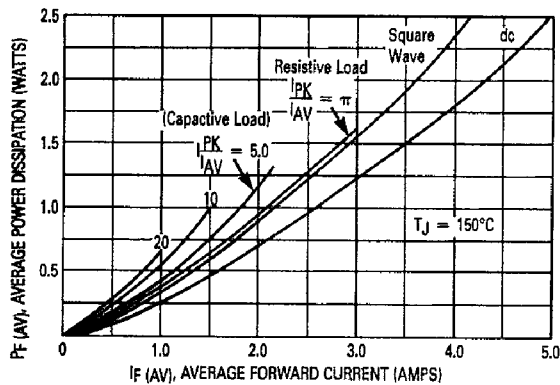
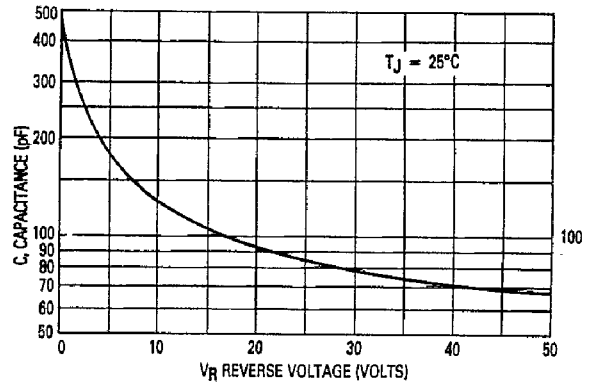


FIGURE 5 — TYPICAL CAPACITANCE



MBR320, MBR330, MBR340, MBR350, MBR360

MBR350 AND 360

FIGURE 6 — TYPICAL FORWARD VOLTAGE

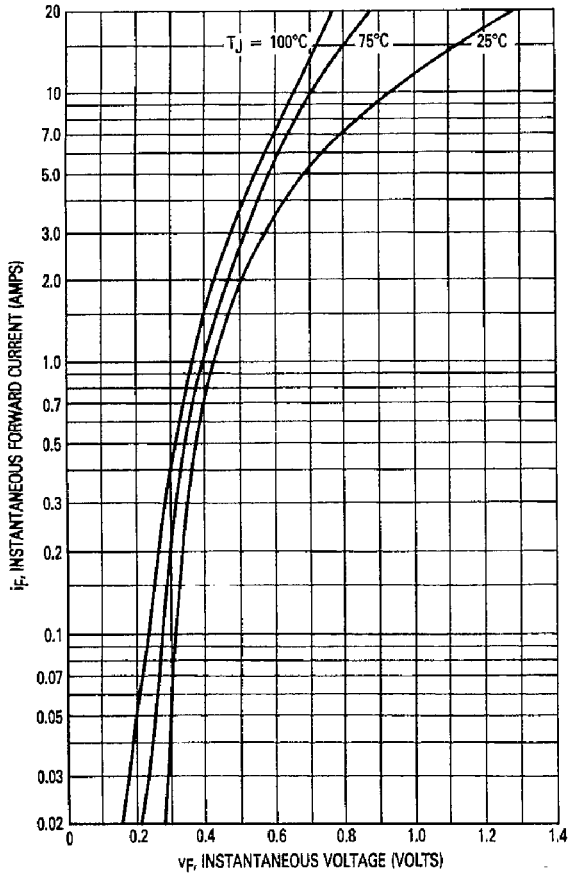


FIGURE 7 — TYPICAL REVERSE CURRENT*

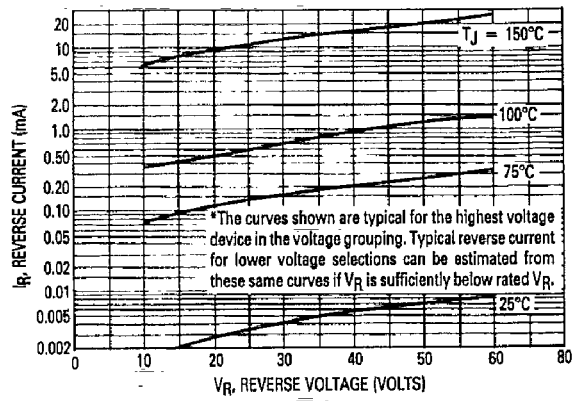


FIGURE 8 — CURRENT DERATING AMBIENT
(MOUNTING METHOD #3 PER NOTE 3)

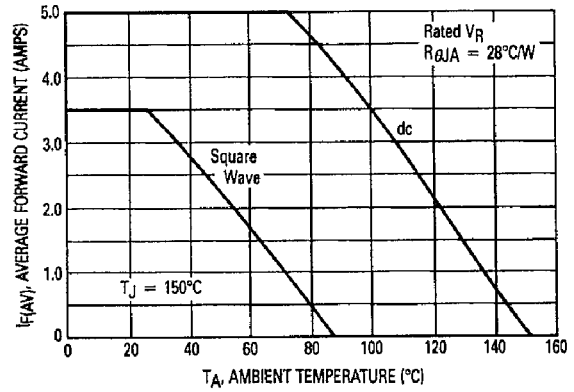


FIGURE 9 — POWER DISSIPATION

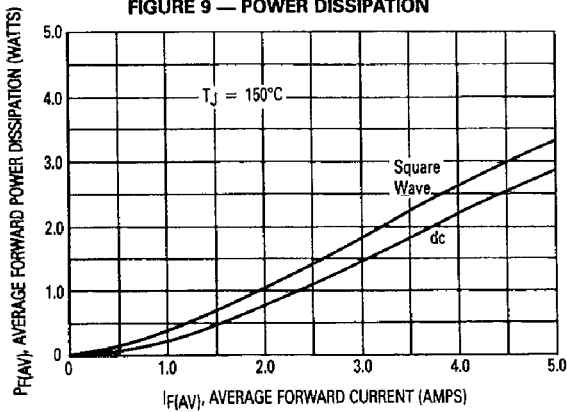
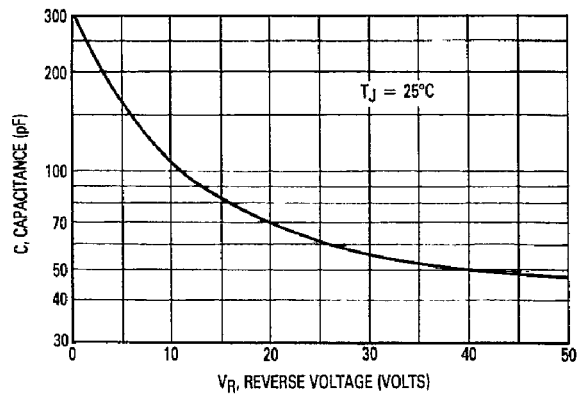


FIGURE 10 — TYPICAL CAPACITANCE



MBR320, MBR330, MBR340, MBR350, MBR360

NOTE 3 — MOUNTING DATA

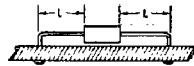
Data shown for thermal resistance junction-to-ambient ($R_{\theta JA}$) for the mountings shown is to be used as typical guideline values for preliminary engineering, or in case the tie point temperature cannot be measured.

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				$^{\circ}\text{C/W}$

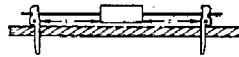
Mounting Method 1

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
2-1/2" x 2-1/2" copper surface.

