

SCHOTTKY BARRIER RECTIFIERS

3.0 AMPERES

MBR320 Thru MBR360

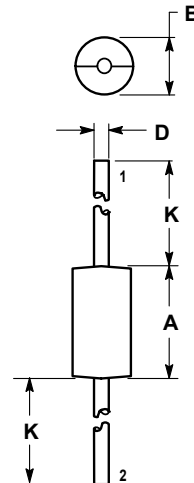
Vishaymas High Power Products

FEATURES

- 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



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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.370	0.380	9.40	9.65
B	0.190	0.210	4.83	5.33
D	0.048	0.052	1.22	1.32
K	1.000	—	25.40	—

- STYLE 1:
PIN 1. CATHODE
2. ANODE

MAXIMUM RATINGS

Rating	Symbol	MBR320	MBR330	MBR340	MBR350	MBR360	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} 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
Non-Repetitive 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.

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

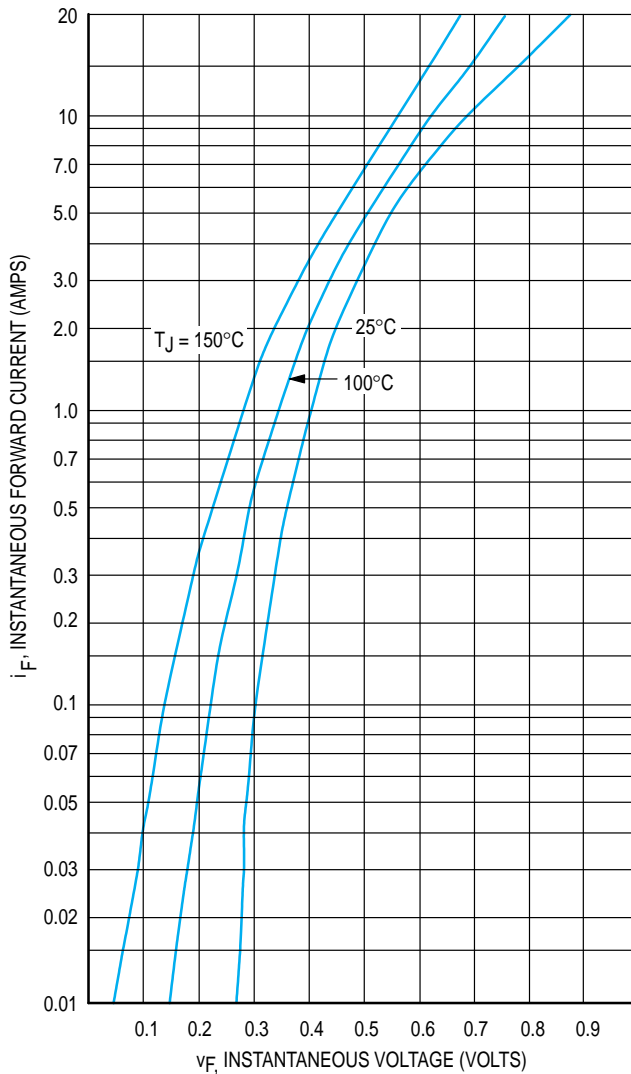


Figure 1. Typical Forward Voltage

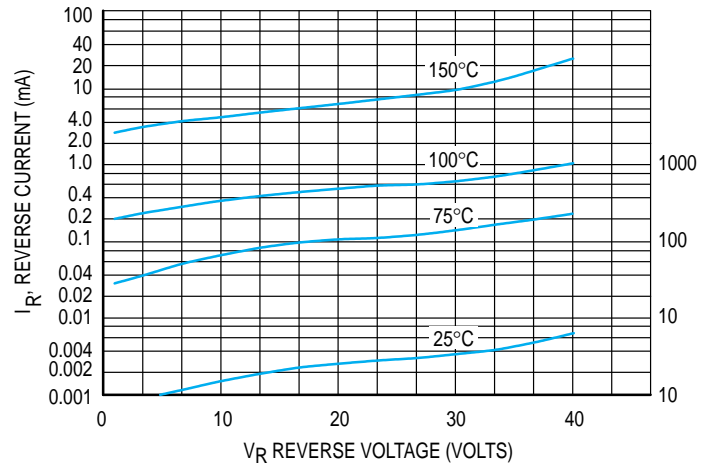
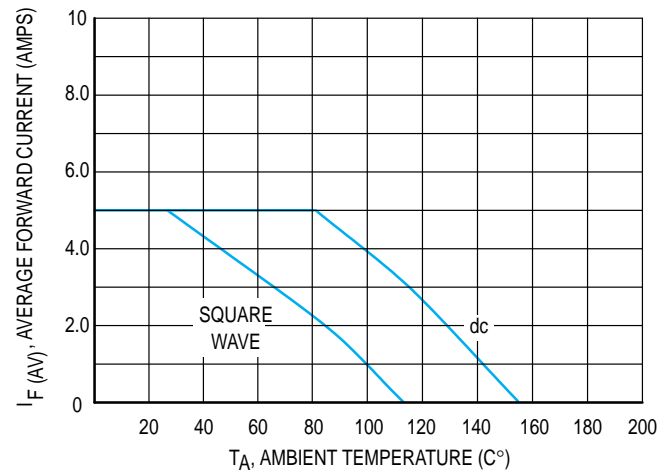


Figure 2. Typical Reverse Current*

*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 1)**

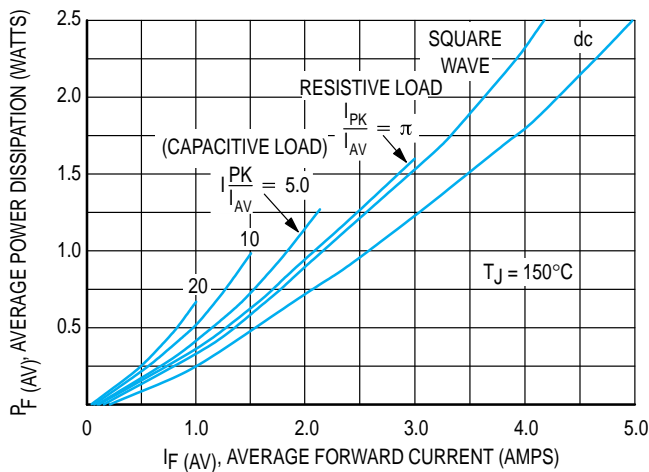


Figure 4. Power Dissipation

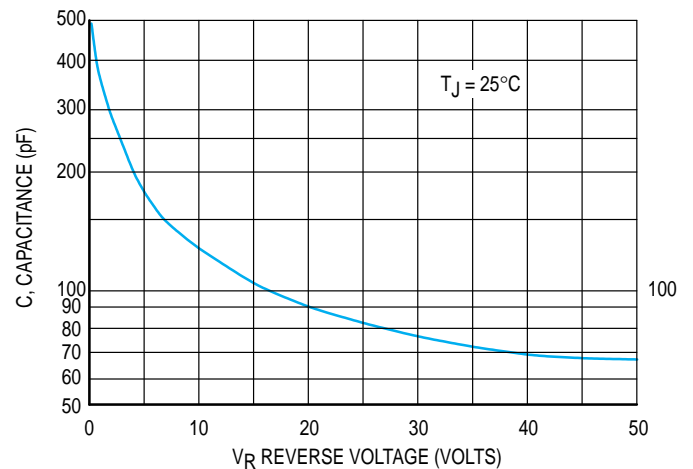


Figure 5. Typical Capacitance

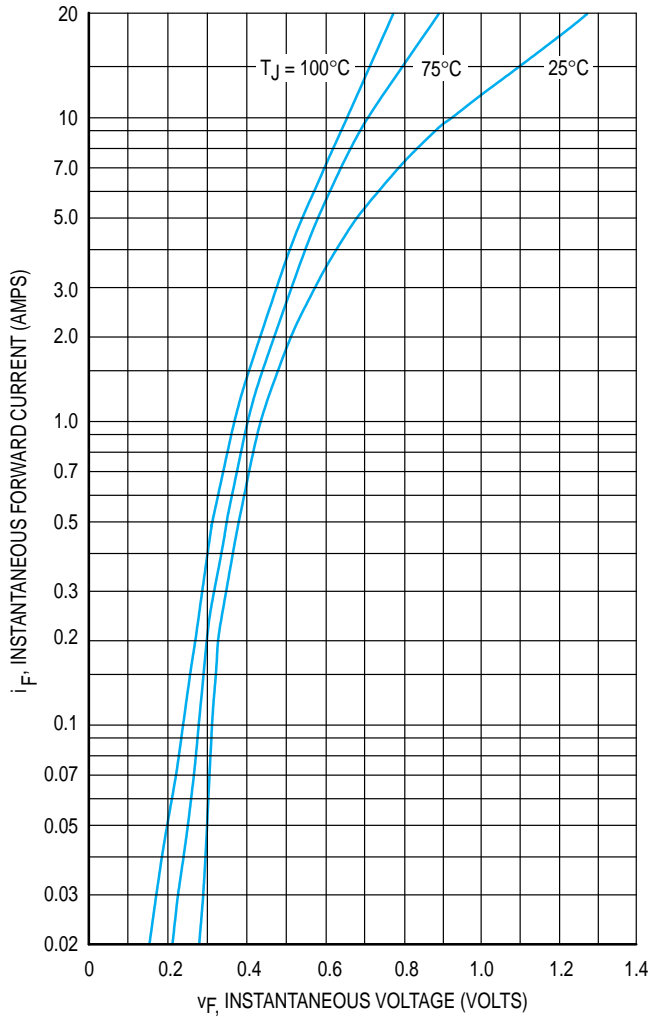


Figure 6. Typical Forward Voltage

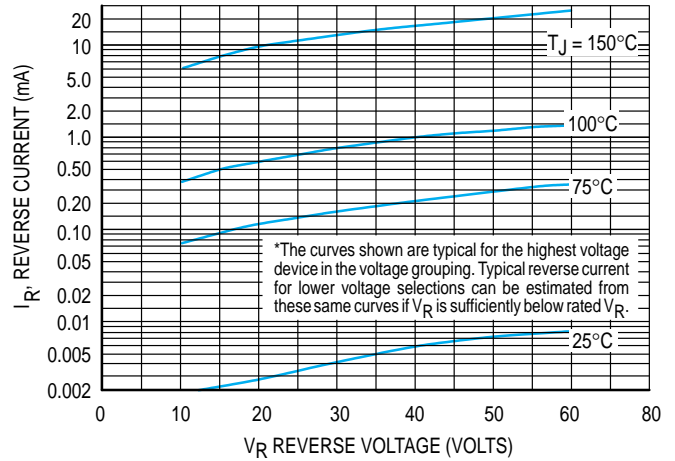


Figure 7. Typical Reverse Current*

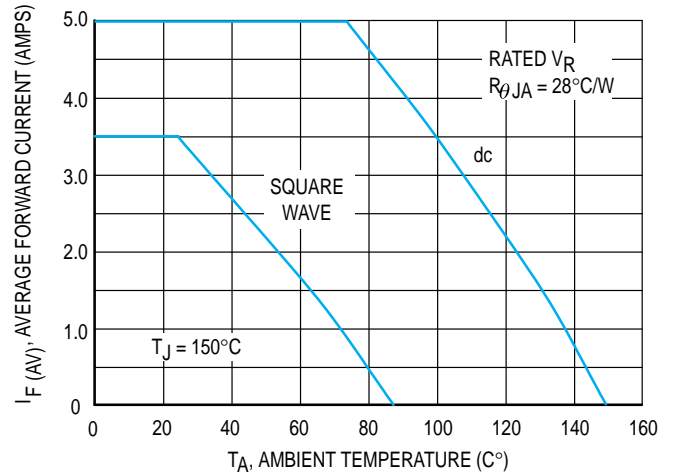


Figure 8. Current Derating Ambient (Mounting method #3 per note 1)

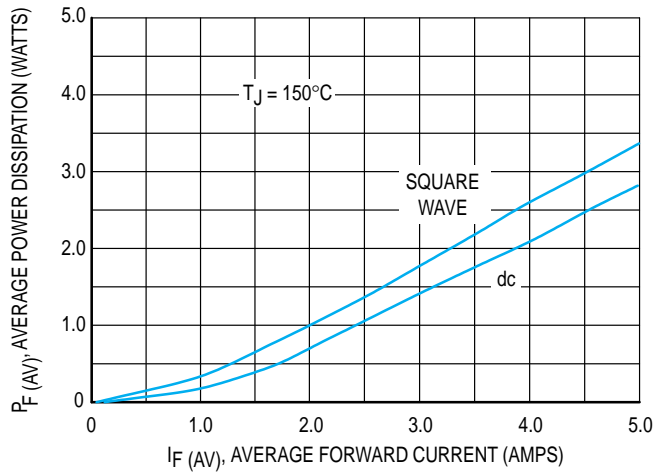


Figure 9. Power Dissipation

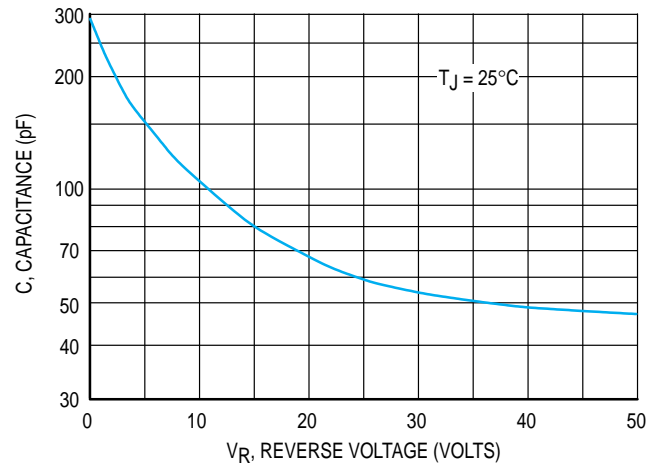


Figure 10. Typical Capacitance

