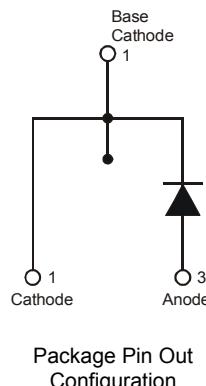


## Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

## Mechanical Data

- Case: TO220AC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Tin. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Diagram
- Marking: Type Number
- Weight: 2.3 grams (approximate)



Package Pin Out Configuration

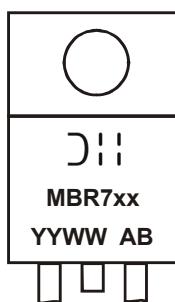
## Ordering Information (Note 3)

Part Number	Case	Packaging
MBR7xx*	TO220AC	50/Tube

\* xx = Device type, e.g. MBR750

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.  
 2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.  
 3. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



MBR7xx = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 10 = 2010)  
 WW = Week (01 - 53)

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristic	Symbol	MBR 730	MBR 740	MBR 750	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$				
Working Peak Reverse Voltage	$V_{RWM}$	30	40	50	V
DC Blocking Voltage	$V_R$				
RMS Reverse Voltage	$V_{R(\text{RMS})}$	21	28	35	V
Average Rectified Output Current (Note 4)	$I_O$		7.5		A
@ $T_C = +125^\circ\text{C}$					
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$		150		A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 4)	$R_{\text{JC}}$	3.5	$^\circ\text{C}/\text{W}$
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10,000	$\text{V}/\mu\text{s}$
Operating Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	-55 to +175	$^\circ\text{C}$

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	MBR 730	MBR 740	MBR 750	Unit
Forward Voltage Drop (Note 6)	$V_{FM}$	— 0.57 0.84 0.72	— 0.57 0.84 0.72	0.75 0.65 — —	V
Peak Reverse Current at Rated DC Blocking Voltage	$I_{RM}$	0.1 15	0.1 15	0.5 50	mA
Typical Total Capacitance (Note 5)	$C_T$		400		pF

Notes:

4. Thermal resistance junction to case mounted on heatsink.
5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Short duration pulse test used to minimize self-heating effect.

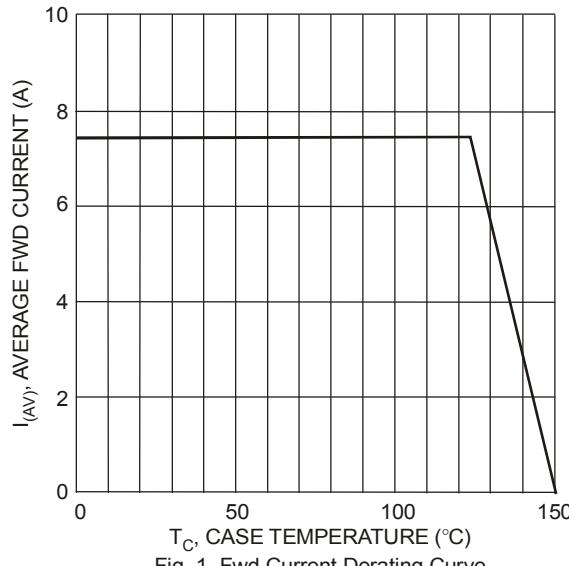


Fig. 1 Fwd Current Derating Curve

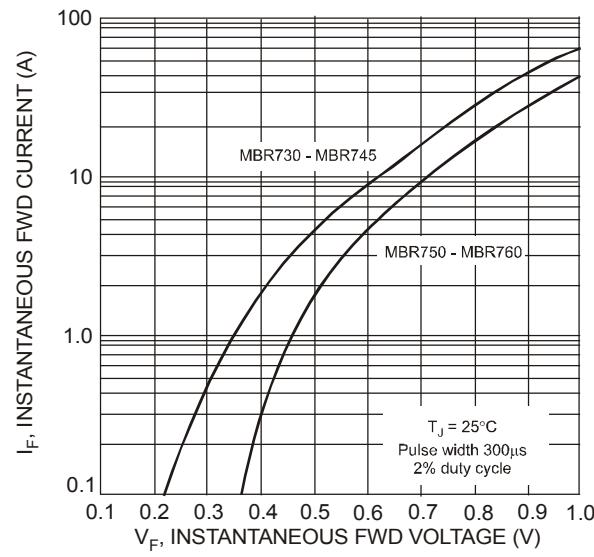


Fig. 2 Typ Instantaneous Fwd Characteristics

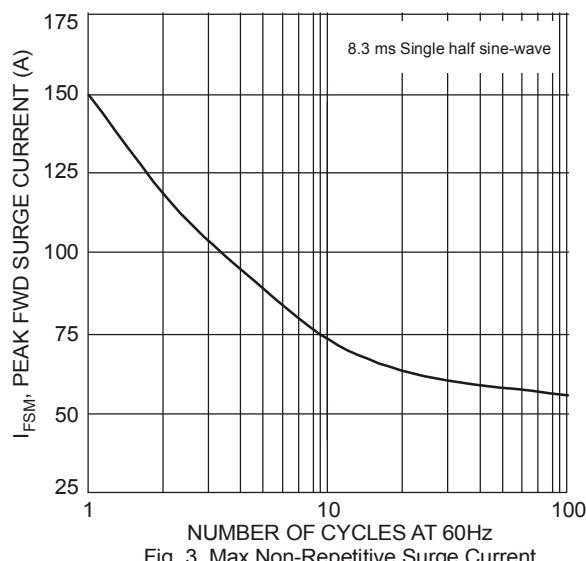


Fig. 3 Max Non-Repetitive Surge Current

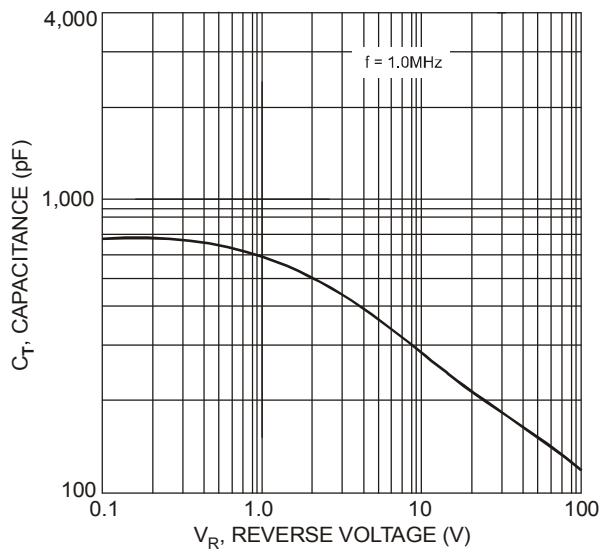


Fig. 4 Typical Total Capacitance

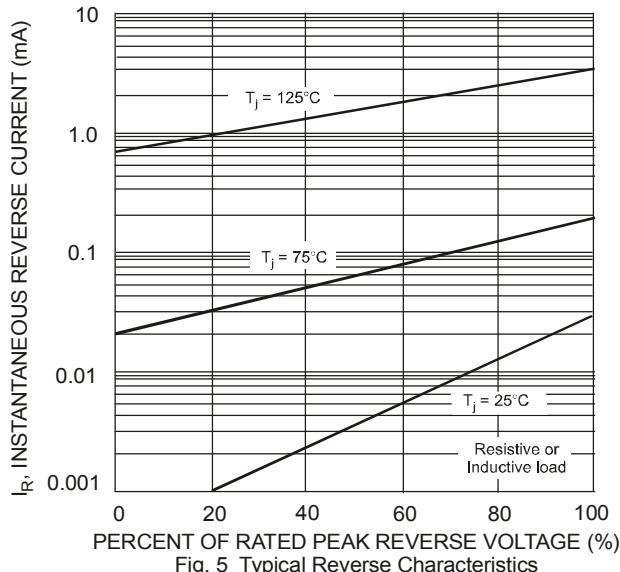
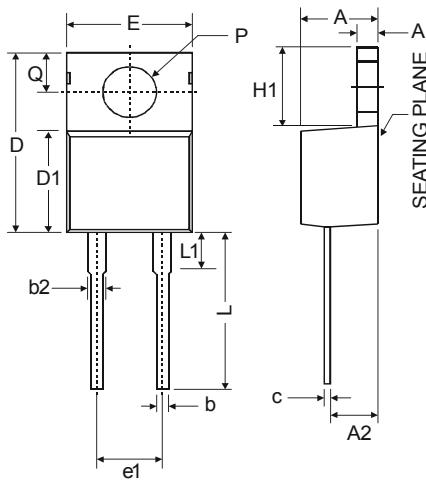


Fig. 5 Typical Reverse Characteristics

## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



TO220AC			
Dim	Min	Typ	Max
A	3.56	-	4.82
A1	0.51	-	1.39
A2	2.04	-	2.92
b	0.39	0.81	1.01
b2	1.15	1.24	1.77
c	0.356	-	0.61
D	14.22	-	16.51
D1	8.39	-	9.01
e1	5.08		
E	9.66	-	10.66
H1	5.85	-	6.85
L	12.70	-	14.73
L1	-	-	6.35
P	3.54	-	4.08
Q	2.54	-	3.42
All Dimensions in mm			

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