



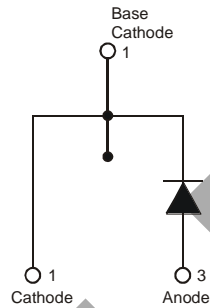
OBSOLETE – PART DISCONTINUED

### 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

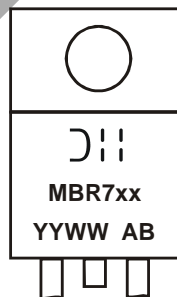
### Ordering Information (Note 3)

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<sub>A</sub> = +25°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 <sub>RRM</sub>				
Working Peak Reverse Voltage	V <sub>RWM</sub>	30	40	50	V
DC Blocking Voltage	V <sub>R</sub>				
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	28	35	V
Average Rectified Output Current (Note 4)	I <sub>O</sub>		7.5		A
		@ T <sub>C</sub> = +125°C			
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>		150		A

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 4)	R <sub>θJC</sub>	3.5	°C/W
Voltage Rate of Change (Rated V <sub>R</sub> )	dV/dt	10,000	V/μs
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C

### Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	MBR 730	MBR 740	MBR 750	Unit
Forward Voltage Drop (Note 6)	V <sub>FM</sub>			0.75	V
@ I <sub>F</sub> = 7.5A, T <sub>J</sub> = +25°C		—		0.65	
@ I <sub>F</sub> = 7.5A, T <sub>J</sub> = +125°C		0.57		—	
@ I <sub>F</sub> = 15A, T <sub>J</sub> = +25°C		0.84		—	
@ I <sub>F</sub> = 15A, T <sub>J</sub> = +125°C	0.72		—		
Peak Reverse Current at Rated DC Blocking Voltage	I <sub>RM</sub>	0.1	15	0.5	mA
				50	
Typical Total Capacitance (Note 5)	C <sub>T</sub>	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.

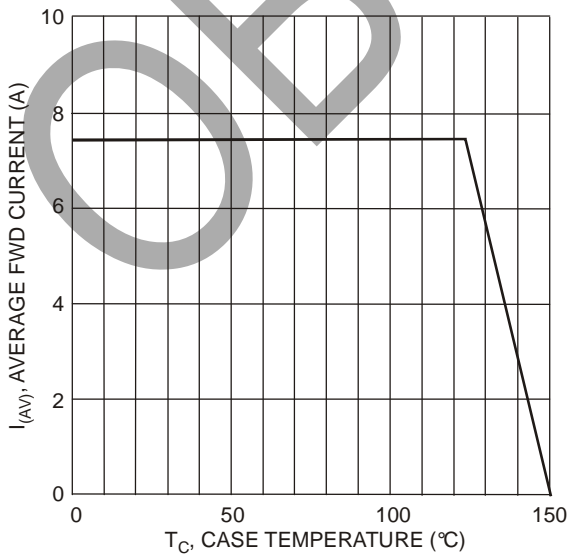


Fig. 1 Fwd Current Derating Curve

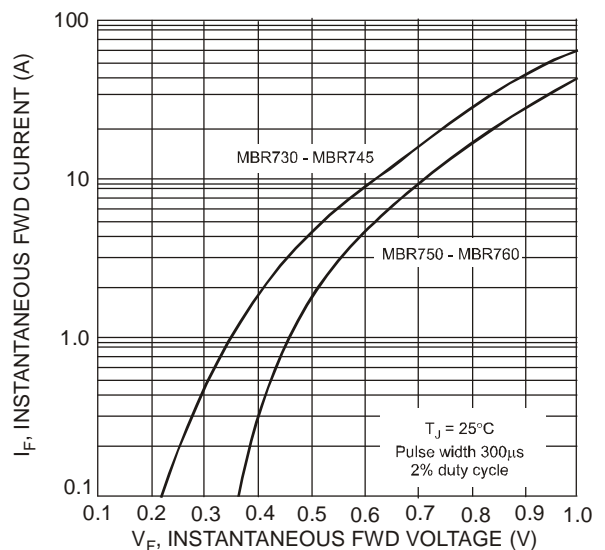


Fig. 2 Typ Instantaneous Fwd Characteristics

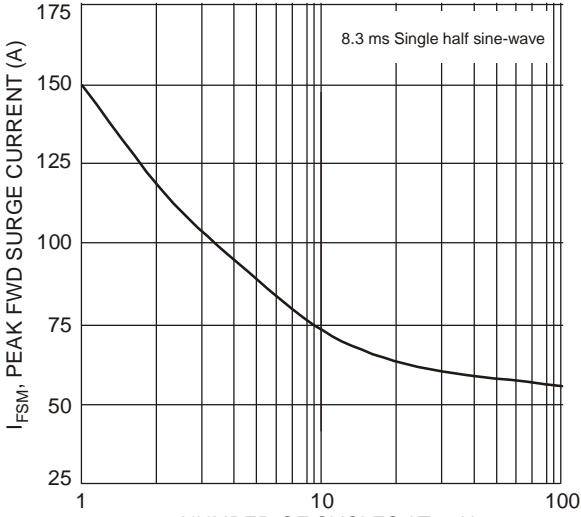


Fig. 3 Max Non-Repetitive Surge Current

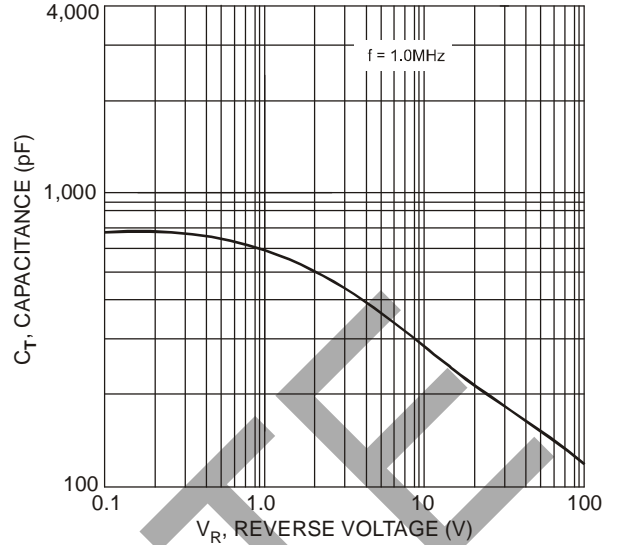


Fig. 4 Typical Total Capacitance

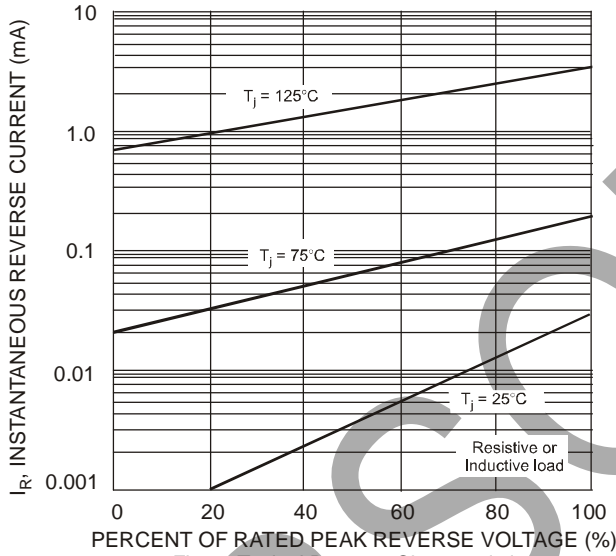
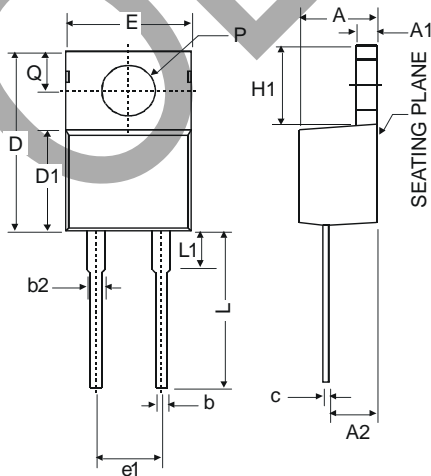


Fig. 5 Typical Reverse Characteristics

**Package Outline Dimensions**

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