MBR730 – MBR750

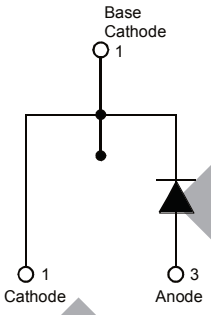
7.5A SCHOTTKY BARRIER RECTIFIER

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

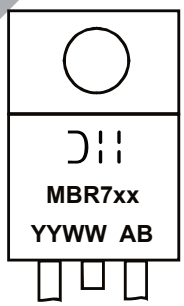
Ordering Information (Note 3)

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 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°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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	40	50	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	28	35	V
Average Rectified Output Current (Note 4) @ T_C = +125°C	I_O	7.5			A
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)	$R_{\theta JC}$	3.5	°C/W
Voltage Rate of Change (Rated V_R)	dV/dt	10,000	V/µs
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	MBR 730	MBR 740	MBR 750	Unit
Forward Voltage Drop (Note 6)	@ I_F = 7.5A, T_J = +25°C	V_{FM}	—		0.75	V
	@ I_F = 7.5A, T_J = +125°C		0.57		0.65	
	@ I_F = 15A, T_J = +25°C		0.84		—	
	@ I_F = 15A, T_J = +125°C		0.72		—	
Peak Reverse Current at Rated DC Blocking Voltage	@ T_J = +25°C	I_{RM}	0.1		0.5	mA
	@ T_J = +125°C		15		50	
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.

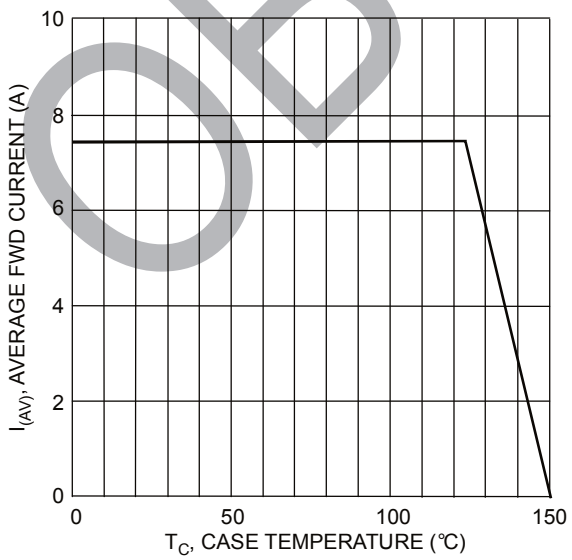


Fig. 1 Fwd Current Derating Curve

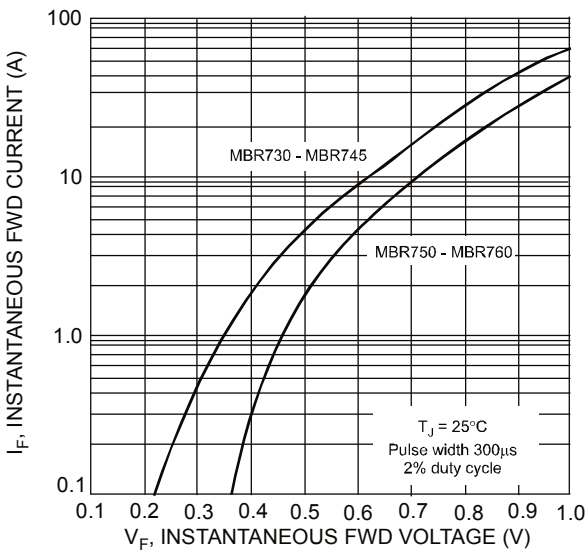


Fig. 2 Typ Instantaneous Fwd Characteristics

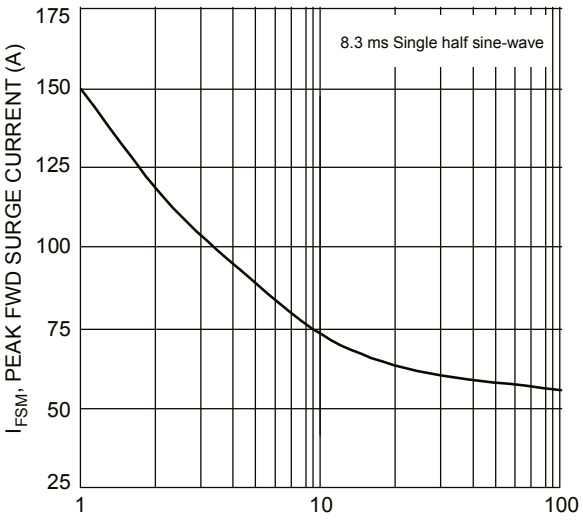


Fig. 3 Max Non-Repetitive Surge Current

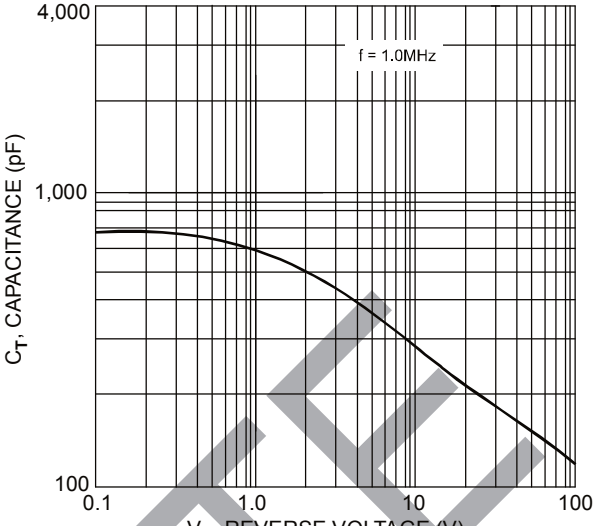


Fig. 4 Typical Total Capacitance

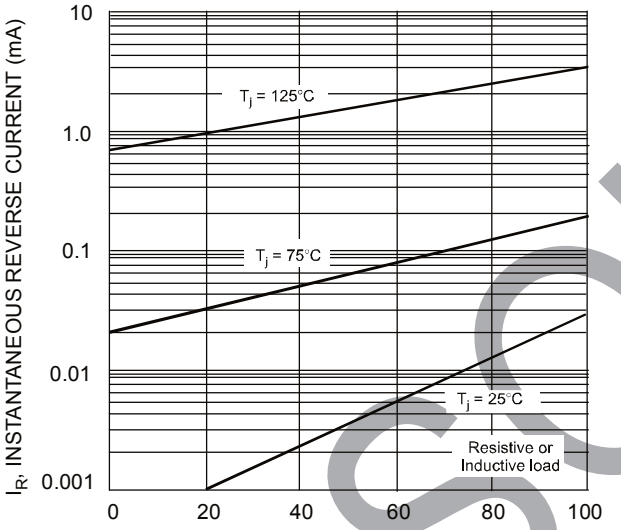
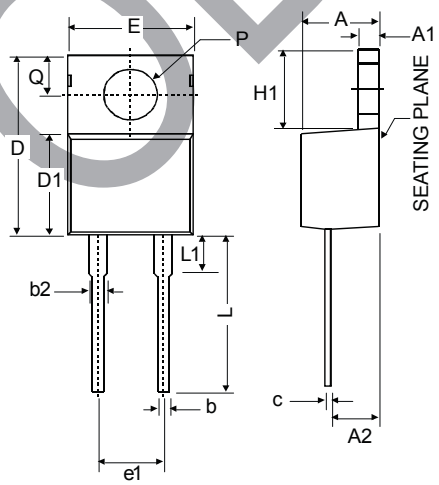


Fig. 5 Typical Reverse Characteristics

Package Outline Dimensions

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