



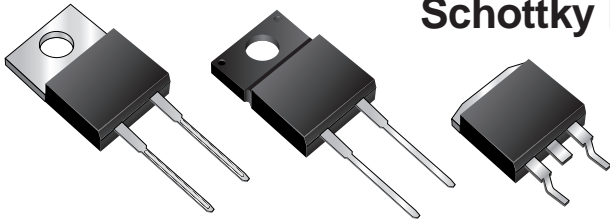
MBR7Hxx, MBRF7Hxx & MBRB7Hxx Series

New Product

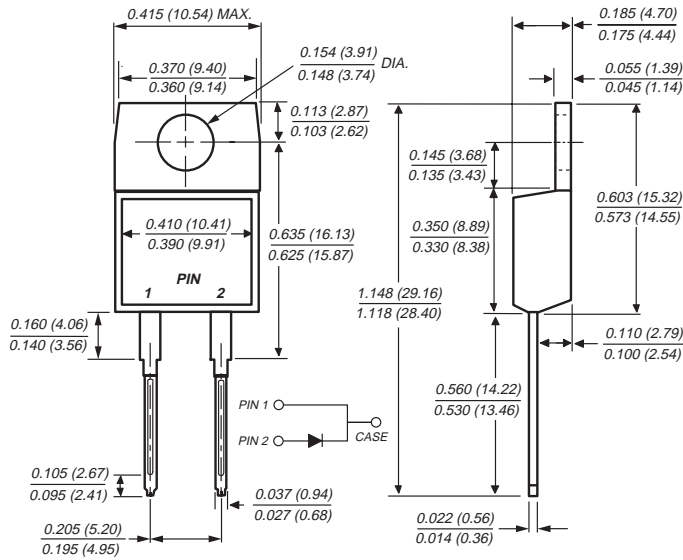
Vishay Semiconductors
formerly General Semiconductor

Schottky Barrier Rectifiers

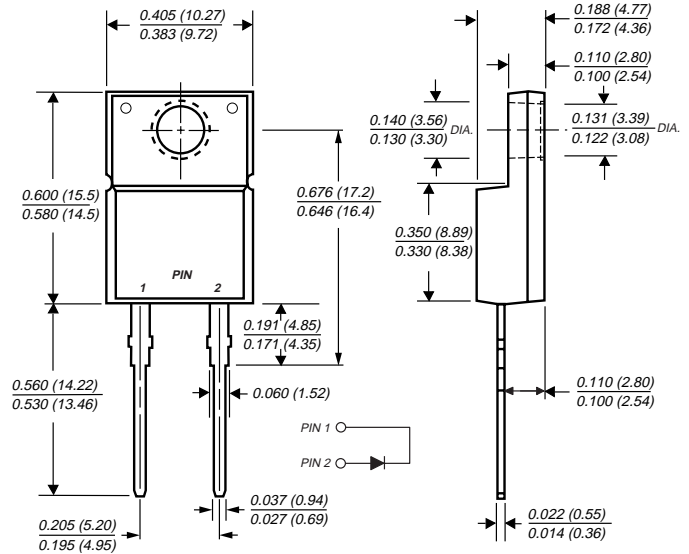
Reverse Voltage 35 to 60 V
Forward Current 7.5 A



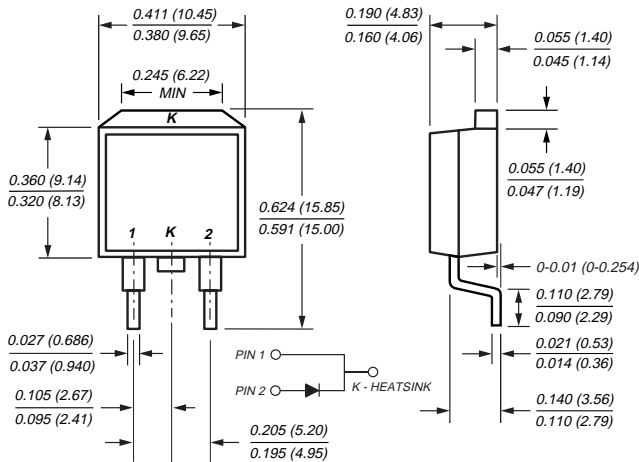
TO-220AC (MBR7Hxx)



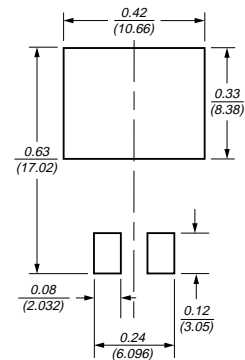
ITO-220AC (MBRF7Hxx)



TO-263AB (MBRB7Hxx)



Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)

Mechanical Data

Case: JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

Polarity: As marked

Mounting Position: Any

Mounting Torque: 10 in-lbs maximum

Weight: 0.08oz., 2.24g

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-0
- Metal silicon junction, majority carrier conduction
- Low forward voltage drop, low power loss and high efficiency
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 250 °C/10 seconds, 0.25" (6.35 mm) from case
- Rated for reverse surge and ESD
- 175 °C maximum operation junction temperature

MBR7Hxx, MBRF7Hxx & MBRB7Hxx Series



Vishay Semiconductors

formerly General Semiconductor

Maximum Ratings (T_C = 25 °C unless otherwise noted)

Parameter	Symbol	MBR7H35	MBR7H45	MBR7H50	MBR7H60	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
Working peak reverse voltage	V _{RWM}	35	45	50	60	V
Maximum DC blocking voltage	V _{DC}	35	45	50	60	V
Max. average forward rectified current (see fig. 1)	I _{F(AV)}	7.5				A
Peak repetitive forward current at T _C = 155 °C (rated V _R , 20 KHz sq. wave)	I _{FRM}	15				A
Non-repetitive avalanche energy at 25 °C, I _{AS} = 4 A, L = 10 mH	E _{AS}	80				mJ
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	150				A
Peak repetitive reverse surge current at t _p = 2.0 μs, 1 KHz	I _R	1.0		0.5		A
Peak non-repetitive reverse energy (8/20 μs waveform)	E _{RS}	20		10		mJ
Electrostatic discharge capacitor voltage Human body model: C = 100 pF, R = 1.5 kΩ	V _C	25				kV
Voltage rate of change (rated V _R)	dv/dt	10,000				V/μs
Operating junction temperature range	T _J	-65 to +175				°C
Storage temperature range	T _{STG}	-65 to +175				°C
RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V _{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾				V

Electrical Characteristics (T_C = 25 °C unless otherwise noted)

Parameter	Symbol	MBR7H35, MBR7H45		MBR7H50, MBR7H60		Unit
		Typ	Max	Typ	Max	
Maximum instantaneous forward voltage ⁽⁴⁾ at I _F = 7.5 A T _J = 25 °C at I _F = 7.5 A T _J = 125 °C at I _F = 15 A T _J = 25 °C at I _F = 15 A T _J = 125 °C	V _F	– 0.50 – 0.61	0.63 0.55 0.75 0.66	– 0.58 – 0.68	0.73 0.61 0.87 0.72	V
Maximum instantaneous reverse current at rated DC blocking voltage ⁽⁴⁾ T _J = 25 °C T _J = 125 °C	I _R	– 3.0	50 10	– 2.0	50 10	μA mA

Thermal Characteristics (T_C = 25 °C unless otherwise noted)

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Thermal resistance from junction to case	R _{θJC}	3.0	5.0	3.0	°C/W

Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
 (2) Clip mounting (on case), where leads do overlap heatsink

- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
 (4) Pulse test: 300 ms pulse width, 1% duty cycle

Ordering Information

Product	Case	Package Code	Package Option
MBR7H35 – MBR7H60	TO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRF7H35 – MBRF7H60	ITO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRB7H35 – MBRB7H60	TO-263AB	31	13" reel, 800/reel, 4.8K/carton
		45	Anti-Static tube, 50/tube, 2K/carton
		81	Anti-Static 13" reel, 800/reel, 4.8K/carton



Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Forward Current Derating Curve

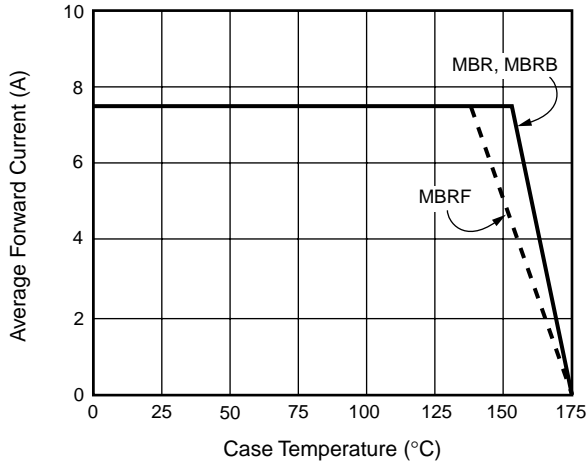


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

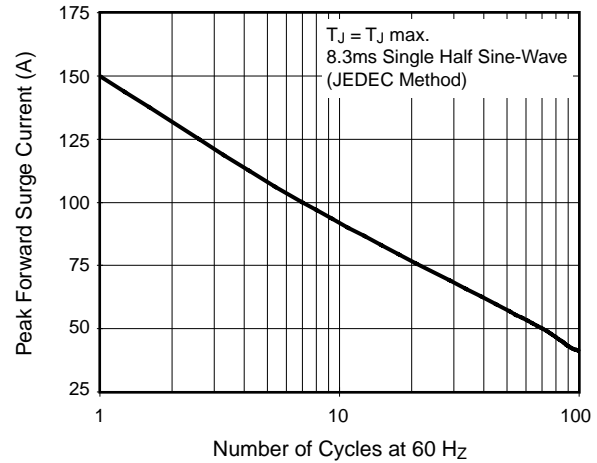


Fig. 3 – Typical Instantaneous Forward Characteristics

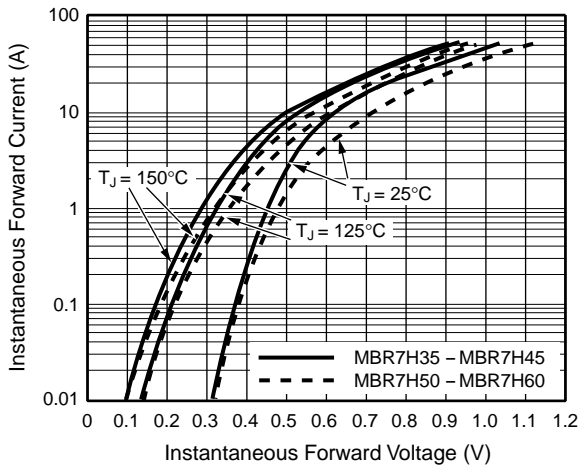


Fig. 4 – Typical Reverse Characteristics

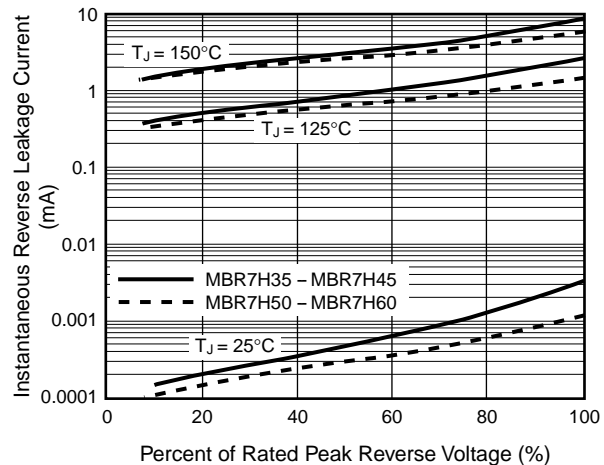


Fig. 5 – Typical Junction Capacitance

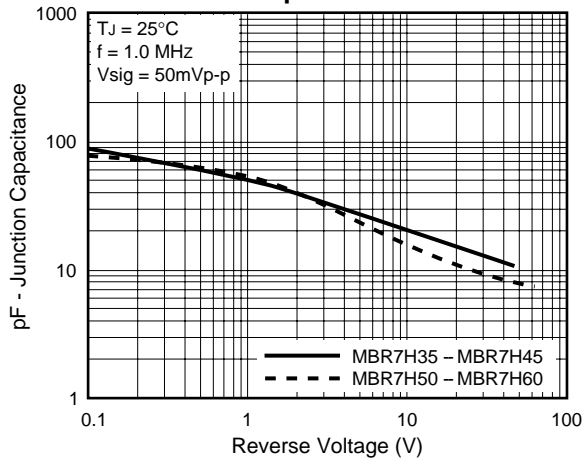
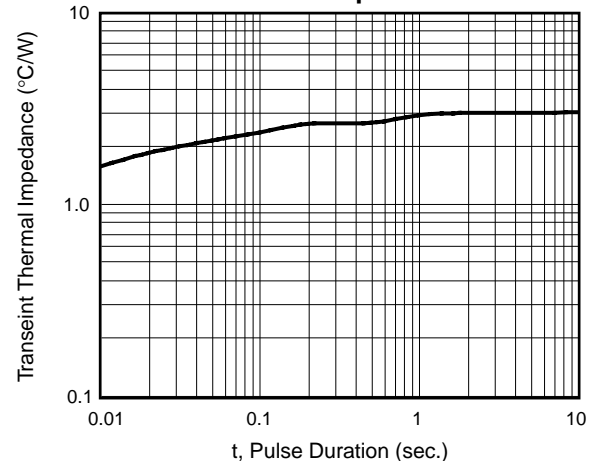


Fig. 6 – Typical Transient Thermal Impedance





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.