

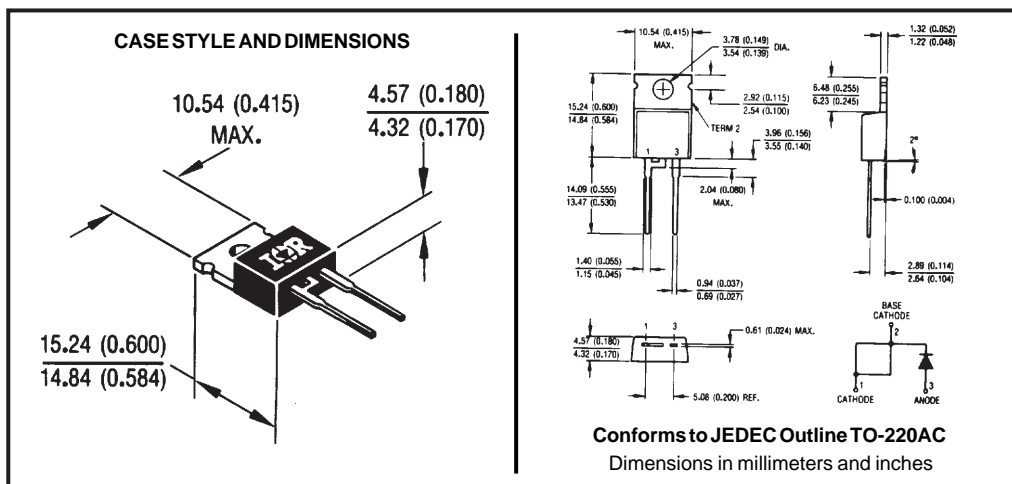
#### Major Ratings and Characteristics

Characteristics	MBR7..	Units
$I_{F(AV)}$ Rectangular waveform	7.5	A
$V_{RRM}$	35/45	V
$I_{FSM}$ @ $t_p = 5 \mu s$ sine	690	A
$V_F$ @ 7.5 Apk, $T_J = 125^\circ C$	0.57	V
$T_J$	-65 to 150	$^\circ C$

#### Description/Features

The MBR7.. Schottky rectifier has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to  $150^\circ C$  junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- $150^\circ C$   $T_J$  operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability



## Voltage Ratings

Part number	MBR735	MBR745
$V_R$ Max. DC Reverse Voltage (V)	35	45
$V_{RWM}$ Max. Working Peak Reverse Voltage (V)		

## Absolute Maximum Ratings

Parameters	MBR7..	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current	7.5	A	@ $T_C = 120^\circ\text{C}$ , (Rated $V_R$ )
$I_{FSM}$ Non-Repetitive Peak Surge Current	690	A	5 $\mu\text{s}$ Sine or 3 $\mu\text{s}$ Rect. pulse Following any rated load condition and with rated $V_{RRM}$ applied
	150		Surge applied at rated load condition half wave single phase 60Hz
$I_{RRM}$ Peak Repetitive Reverse Surge Current	1.0	A	2.0 $\mu\text{sec}$ 1.0 KHz

## Electrical Specifications

Parameters	MBR7..	Units	Conditions
$V_{FM}$ Max. Forward Voltage Drop (1)	0.84	V	@ 15A $T_J = 25^\circ\text{C}$
	0.57	V	@ 7.5A $T_J = 125^\circ\text{C}$
	0.72	V	@ 15A $T_J = 125^\circ\text{C}$
$I_{RM}$ Max. Instantaneous Reverse Current (1)	0.1	mA	$T_J = 25^\circ\text{C}$ Rated DC voltage
	15	mA	$T_J = 125^\circ\text{C}$
$C_T$ Max. Junction Capacitance	400	pF	$V_R = 5V_{DC}$ , (test signal range 100Khz to 1Mhz) $25^\circ\text{C}$
$L_S$ Typical Series Inductance	8.0	nH	Measured from top of terminal to mounting plane
$dv/dt$ Max. Voltage Rate of Change (Rated $V_R$ )	1000	V/ $\mu\text{s}$	

(1) Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

## Thermal-Mechanical Specifications

Parameters	MBR7..	Units	Conditions
$T_J$ Max. Junction Temperature Range	-65 to 150	$^\circ\text{C}$	
$T_{stg}$ Max. Storage Temperature Range	-65 to 175	$^\circ\text{C}$	
$R_{thJC}$ Max. Thermal Resistance Junction to Case	3.0	$^\circ\text{C/W}$	DC operation
$R_{thCS}$ Typical Thermal Resistance, Case to Heatsink	0.50	$^\circ\text{C/W}$	Mounting surface, smooth and greased
wt Approximate Weight	2(0.07)	g(oz.)	
T Mounting Torque	Min. 6(5)	Kg-cm (lbf-in)	
	Max. 12(10)		
Case Style	TO-220AC		JEDEC

\* For Additional Informations and Graphs, Please See the 6TQ Series