

MBR735, MBR745

MBR745 is a Preferred Device

SWITCHMODE™ Power Rectifiers

... using the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL94, VO at 1/8"

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B735, B745

MAXIMUM RATINGS

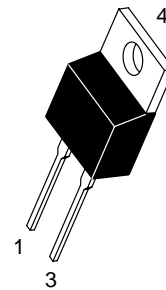
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	MBR735 MBR745	35 45	
Average Rectified Forward Current (Rated V_R , $T_C = 105^\circ\text{C}$)	$I_{F(AV)}$	7.5	A
Peak Repetitive Forward Current, (Rated V_R , Square Wave, 20 kHz, $T_C = 105^\circ\text{C}$)	I_{FRM}	15	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz)	I_{RRM}	1.0	A
Storage Temperature Range	T_{stg}	-65 to +175	°C
Operating Junction Temperature	T_J	-65 to +150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/ μs



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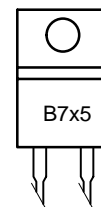
<http://onsemi.com>

SCHOTTKY BARRIER RECTIFIERS 7.5 AMPERES 35 and 45 VOLTS



TO-220AC
CASE 221B
PLASTIC

MARKING DIAGRAM



B7x5 = Device Code
x = 3 or 4

ORDERING INFORMATION

Device	Package	Shipping
MBR735	TO-220	50 Units/Rail
MBR745	TO-220	50 Units/Rail

Preferred devices are recommended choices for future use and best overall value.

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THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	$^{\circ}C/W$
Maximum Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	60	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1.) ($i_F = 7.5$ Amps, $T_C = 125^{\circ}C$) ($i_F = 15$ Amps, $T_C = 125^{\circ}C$) ($i_F = 15$ Amps, $T_C = 25^{\circ}C$)	V_F	0.57 0.72 0.84	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_C = 125^{\circ}C$) (Rated dc Voltage, $T_C = 25^{\circ}C$)	i_R	15 0.1	mA

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

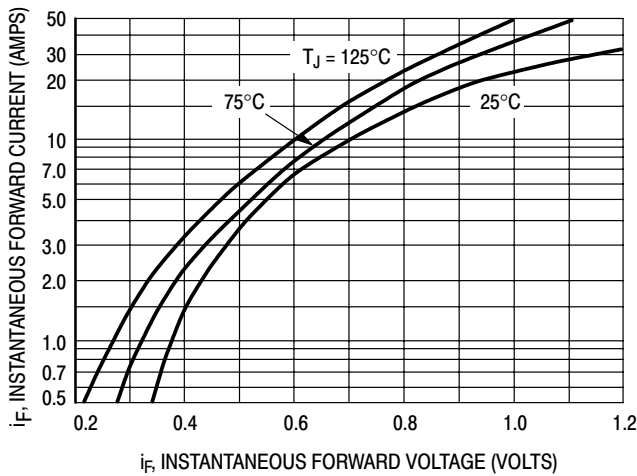


Figure 1. Typical Forward Voltage

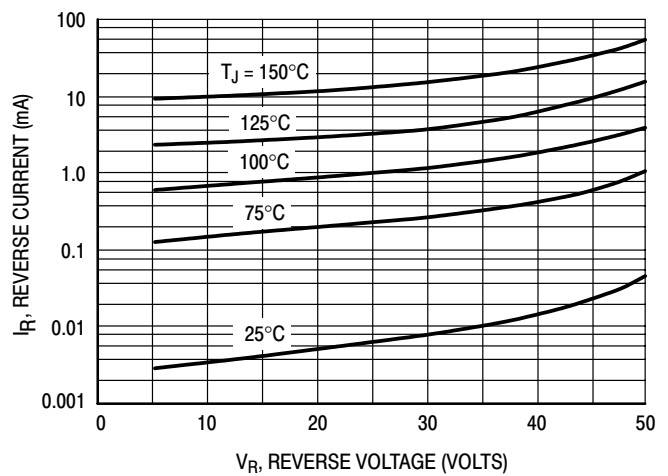


Figure 2. Typical Reverse Current

MBR735, MBR745

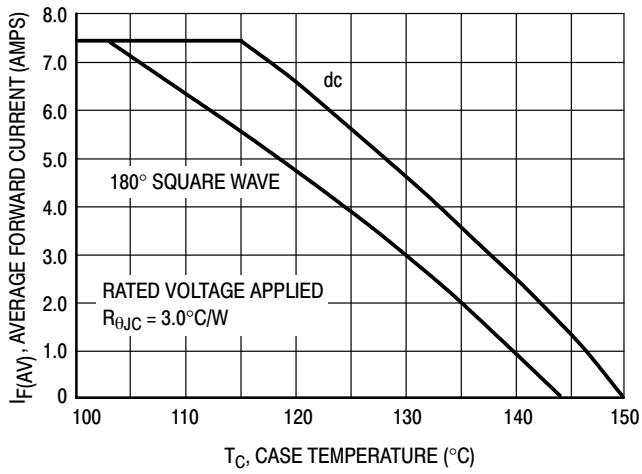


Figure 3. Current Derating, Case

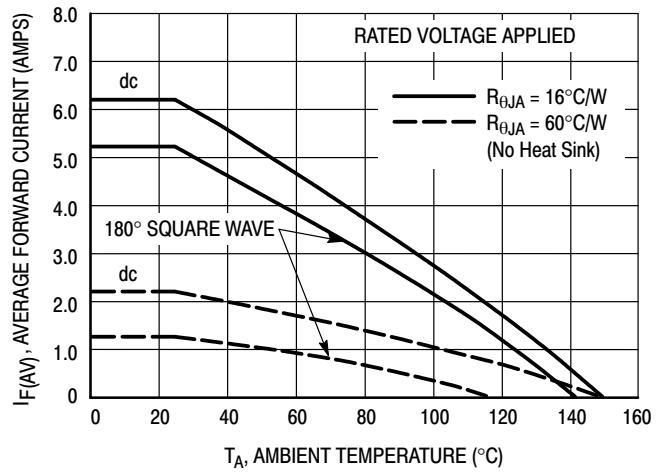


Figure 4. Current Derating, Ambient

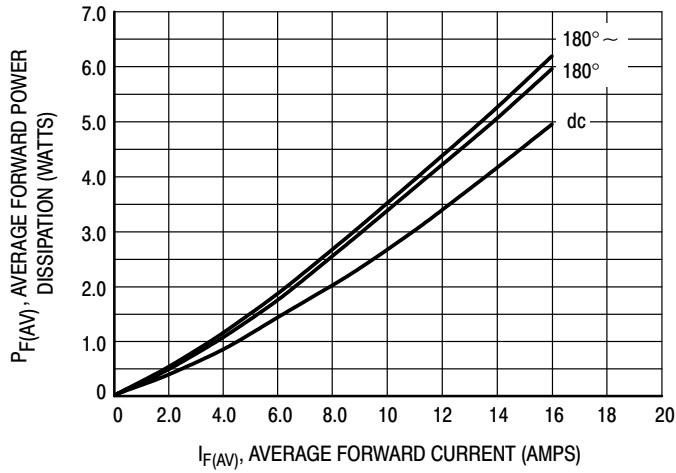
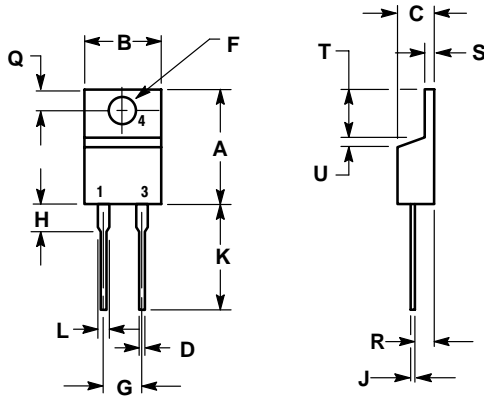


Figure 5. Power Dissipation

MBR735, MBR745

PACKAGE DIMENSIONS

TO-220 PLASTIC CASE 221B-04 ISSUE D




NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.595	0.620	15.11	15.75
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.82
D	0.025	0.035	0.64	0.89
F	0.142	0.147	3.61	3.73
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.14	1.52
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.14	1.39
T	0.235	0.255	5.97	6.48
U	0.000	0.050	0.000	1.27

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