

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
- Guaranteed Reverse Avalanche

Mechanical Characteristics:

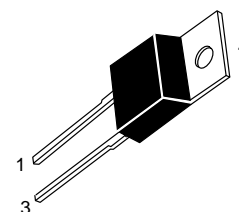
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B1635, B1645



MBR1635
MBR1645

MBR1645 is a
Motorola Preferred Device

**SCHOTTKY BARRIER
RECTIFIERS
16 AMPERES
35 and 45 VOLTS**



**CASE 221B-03
TO-220AC**

MAXIMUM RATINGS

Rating	Symbol	MBR1635	MBR1645	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	35	45	Volts
Average Rectified Forward Current (Rated V_R) $T_C = 125^\circ\text{C}$	$I_{F(AV)}$	16	16	Amps
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz) $T_C = 125^\circ\text{C}$	I_{FRM}	32	32	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	150	150	Amps
Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz)	I_{RRM}	1.0	1.0	Amp
Operating Junction Temperature	T_J	-65 to +150	-65 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +175	-65 to +175	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	1000	10000	$\text{V}/\mu\text{s}$

THERMAL CHARACTERISTICS

Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	1.5	$^\circ\text{C}/\text{W}$
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ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (1) ($i_F = 16$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 16$ Amps, $T_C = 25^\circ\text{C}$)	v_F	0.57 0.63	0.57 0.63	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, $T_C = 125^\circ\text{C}$) (Rated dc Voltage, $T_C = 25^\circ\text{C}$)	i_R	40 0.2	40 0.2	mA

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

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

MBR1635 MBR1645

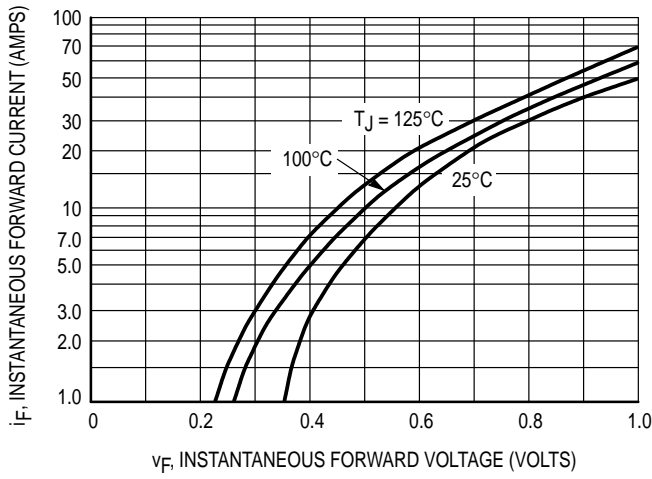


Figure 1. Typical Forward Voltage

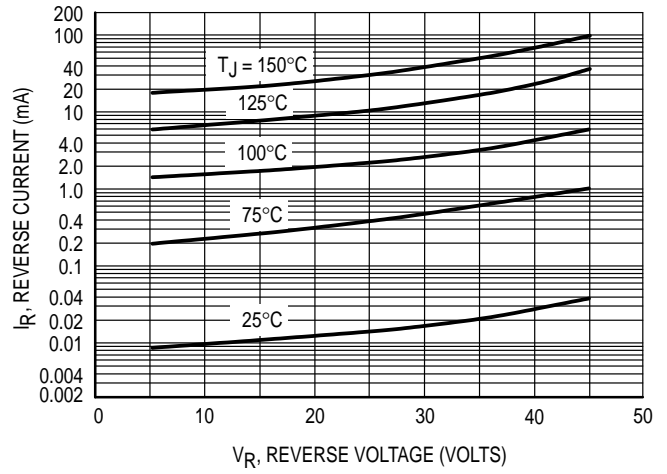


Figure 2. Typical Reverse Current

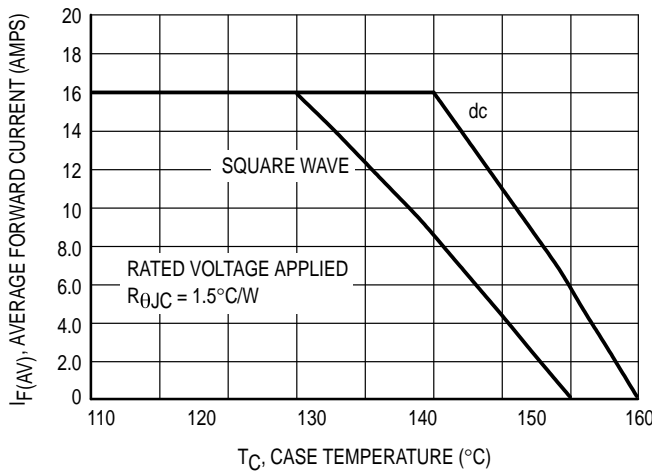


Figure 3. Current Derating, Case

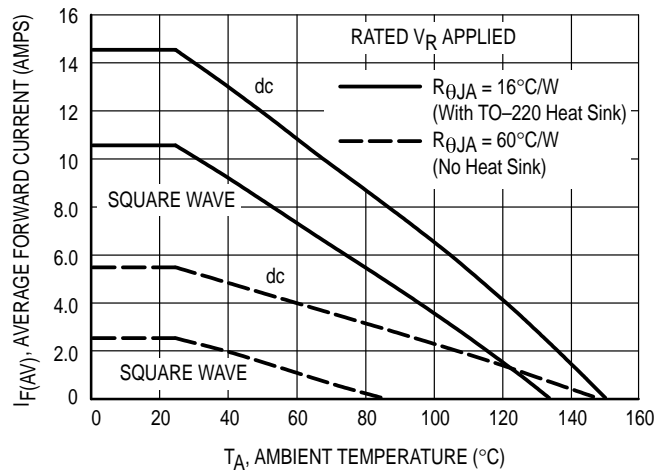


Figure 4. Current Derating, Ambient

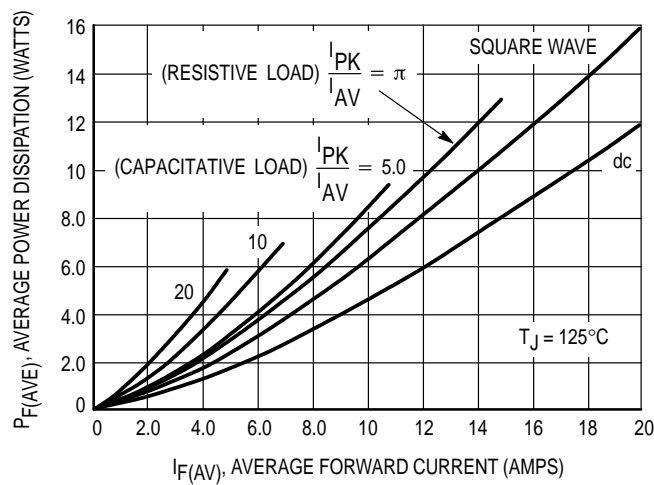
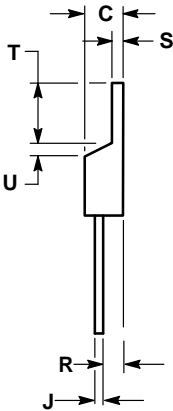
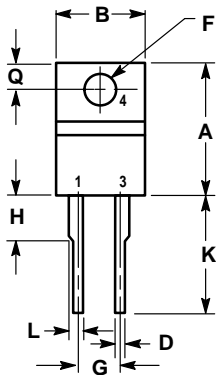


Figure 5. Forward Power Dissipation


PACKAGE DIMENSIONS



- 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

CASE 221B-03
(TO-220AC)
ISSUE B

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