

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

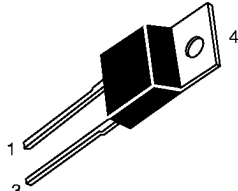
Mechanical Characteristics:

- 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 $\leq 2.0\%$.

SWITCHMODE is a trademark of Motorola, Inc.

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

Rev 1

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MBR1635 MBR1645

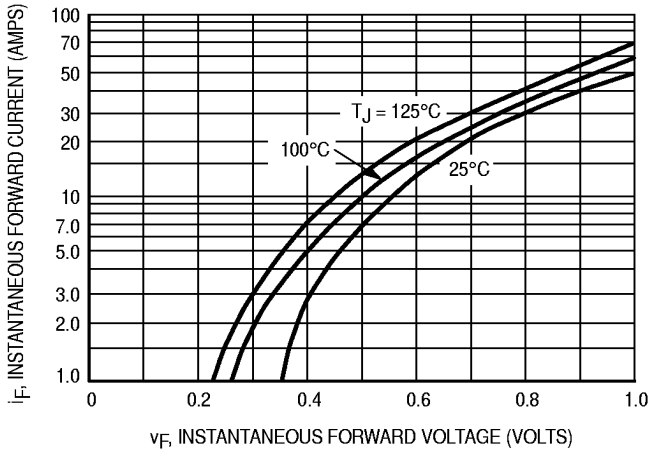


Figure 1. Typical Forward Voltage

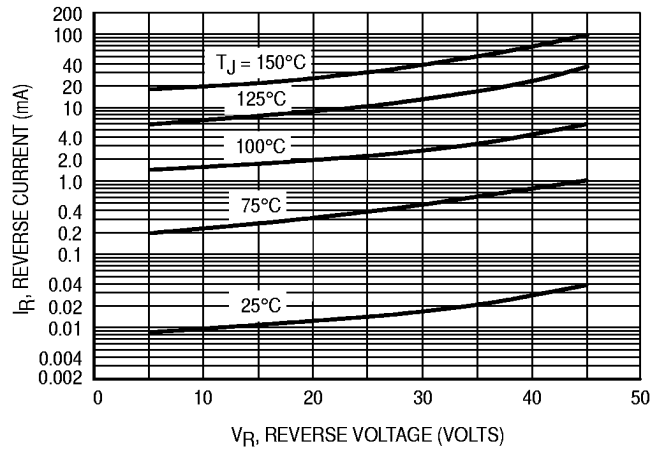


Figure 2. Typical Reverse Current

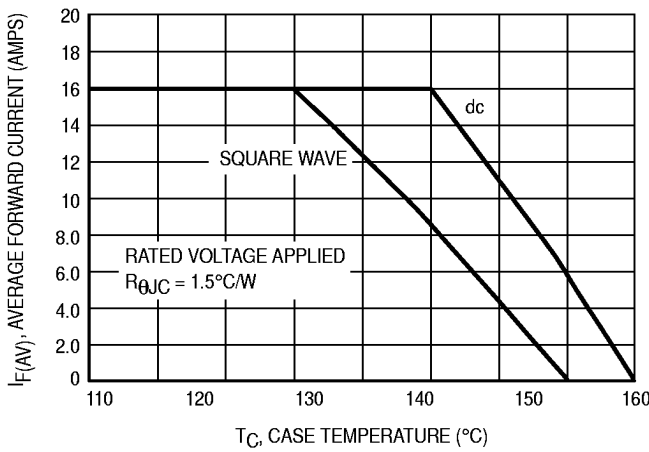


Figure 3. Current Derating, Case

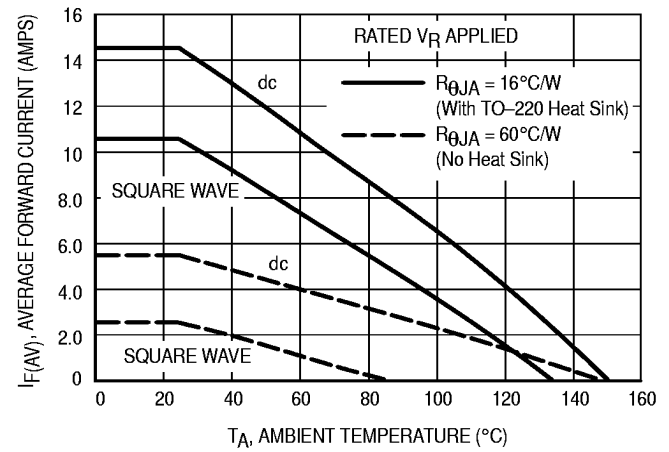


Figure 4. Current Derating, Ambient

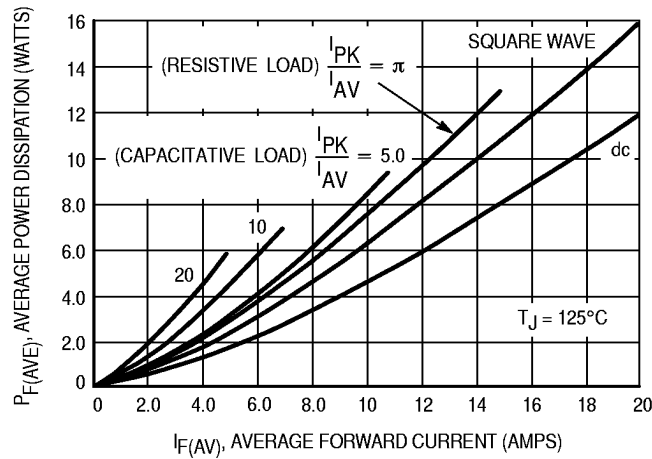
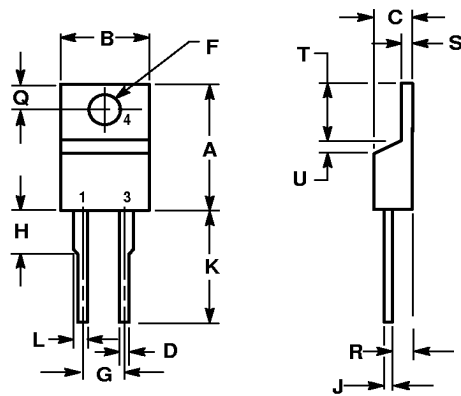


Figure 5. Forward Power Dissipation

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