

# BYW80-200

## SWITCHMODE™ Power Rectifiers

... designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

- Ultrafast 35 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- Epoxy Meets UL94, V<sub>O</sub> @ 1/8"
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction

### 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: , BYW80-200

### MAXIMUM RATINGS

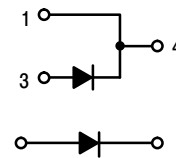
Please See the Table on the Following Page



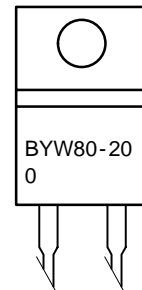
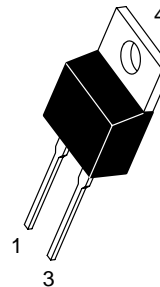
**ON Semiconductor®**

<http://onsemi.com>

**ULTRAFAST  
RECTIFIERS  
8.0 AMPERES  
200 V**



### MARKING DIAGRAM



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

BYW80-200 = Device Code

### ORDERING INFORMATION

Device	Package	Shipping
BYW80-200	TO-220	50 Units/Rail

# BYW80-200

## MAXIMUM RATINGS

Rating	Symbol	Values	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	Volts
Average Rectified Forward Current Total Device, (Rated $V_R$ ), $T_C = 150^\circ\text{C}$	$I_{F(AV)}$	8.0	Amps
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz), $T_C = 150^\circ\text{C}$	$I_{FM}$	16	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	100	Amps
Operating Junction Temperature and Storage Temperature Range	$T_J, T_{stg}$	-65 to +175	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	$^\circ\text{C/W}$
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## ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1.) ( $i_F = 7.0$ Amps, $T_C = 100^\circ\text{C}$ ) ( $i_F = 22$ Amps, $T_C = 25^\circ\text{C}$ )	$v_F$	0.85 1.25	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_J = 100^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	1 0.01	mA
Maximum Reverse Recovery Time ( $I_F = 1.0$ Amp, $di/dt = 50$ Amps/ $\mu\text{s}$ ) ( $I_F = 0.5$ Amp, $i_R = 1.0$ Amp, $I_{REC} = 0.25$ Amp)	$t_{rr}$	35 25	ns

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

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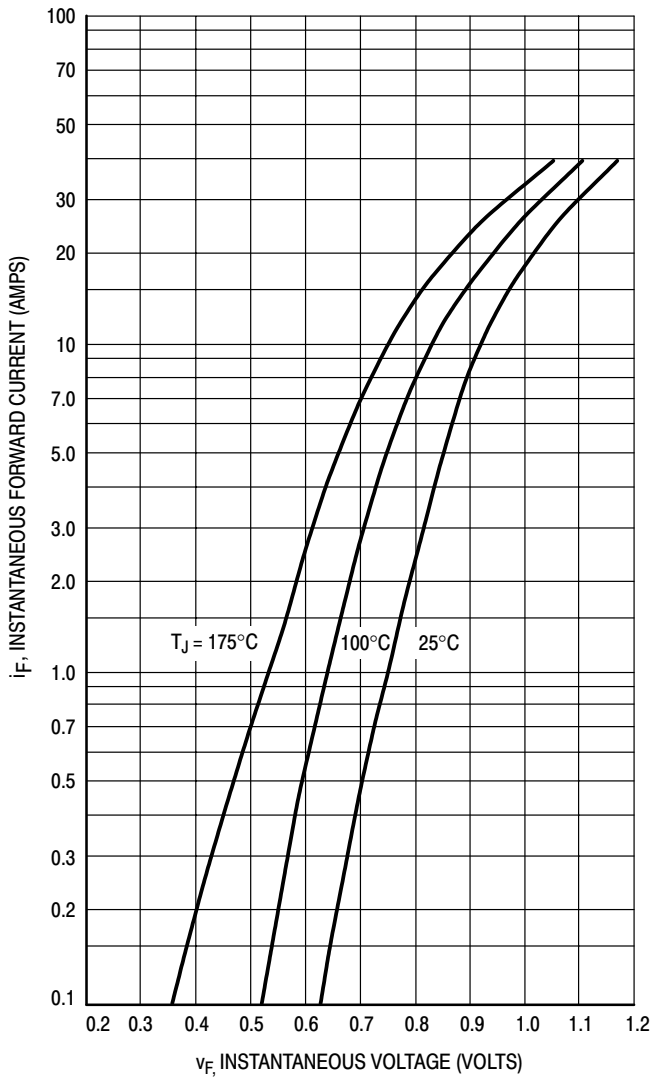


Figure 1. Typical Forward Voltage

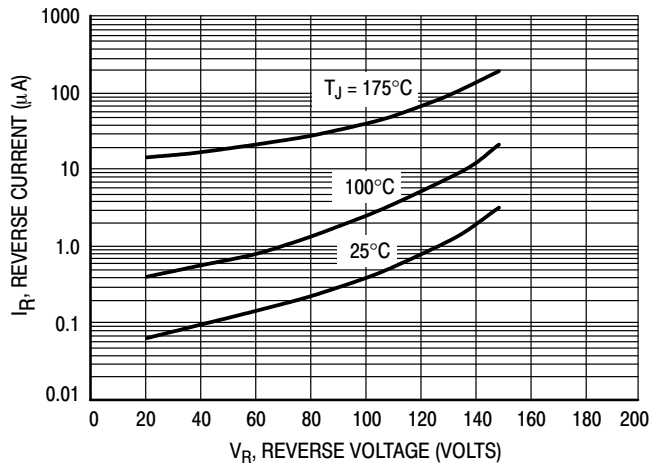


Figure 2. Typical Reverse Current\*

\* The curves shown are typical for the highest voltage device in the grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if  $V_R$  is sufficiently below rated  $V_R$ .

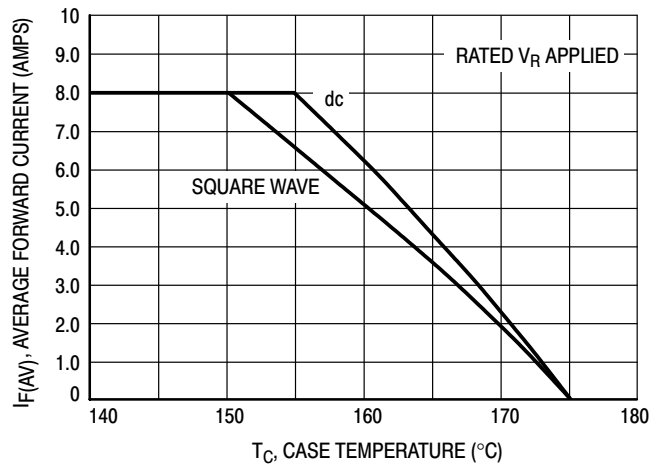


Figure 3. Current Derating, Case

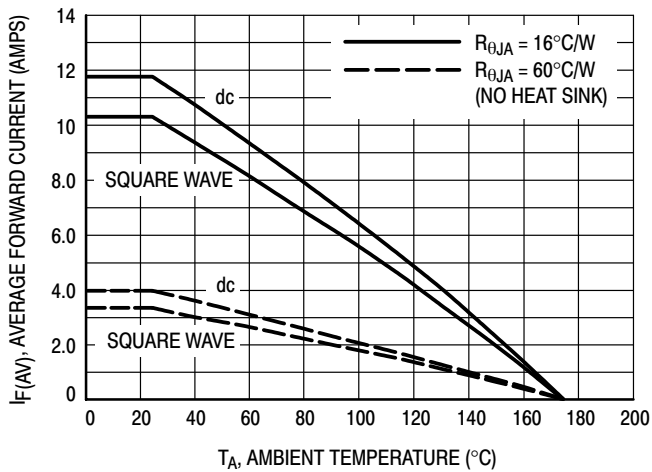


Figure 4. Current Derating, Ambient

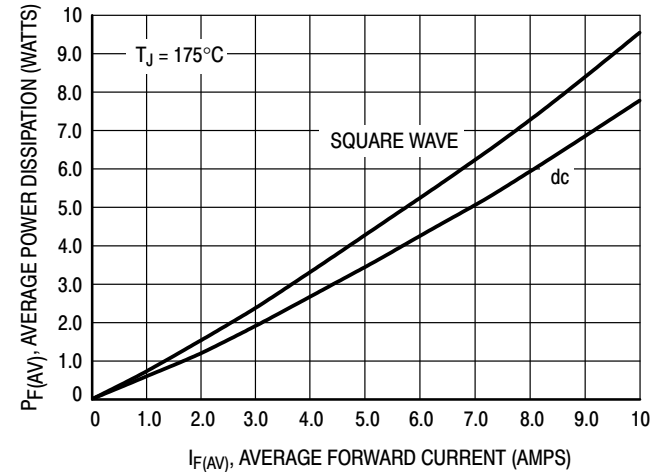


Figure 5. Power Dissipation

# BYW80-200

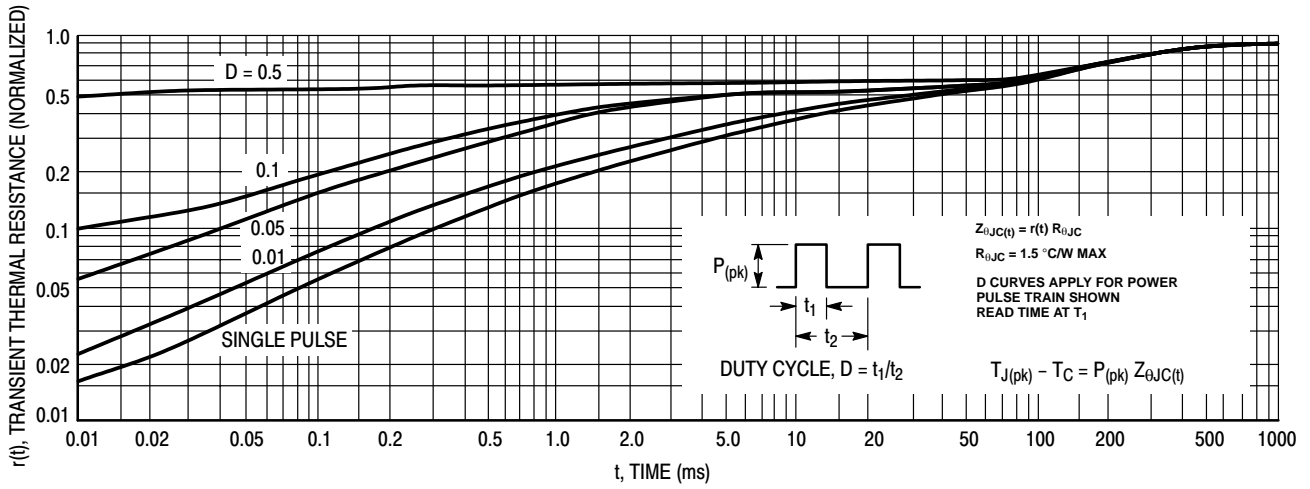


Figure 6. Thermal Response

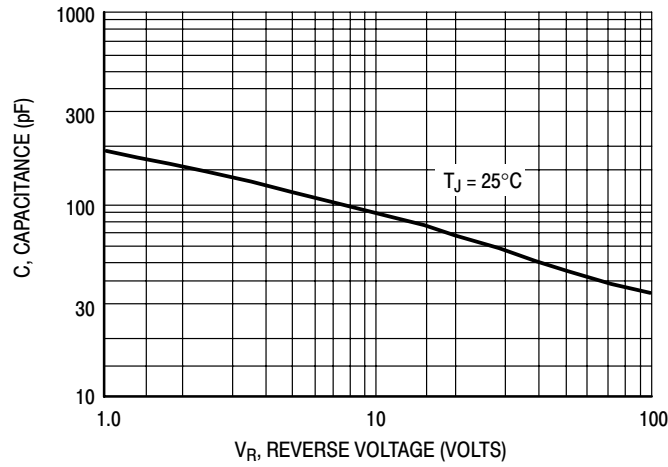
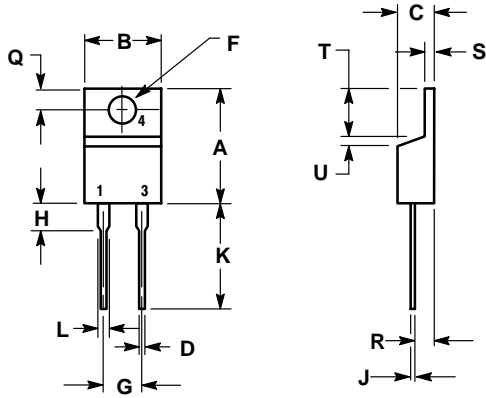


Figure 7. Typical Capacitance

# BYW80-200

## PACKAGE DIMENSIONS

### TO-220 TWO-LEAD 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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