

# BYW29-200

## 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> @ 0.125 in
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction

### Mechanical Characteristics:

- Case: Epoxy, Molded, Epoxy Meets UL 94, V-0
- 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: BYW29-200
- Device Meets MSL1 Requirements
- ESD Ratings: Machine Model, C (> 400 V)  
Human Body Model, 3B (> 8000 V)

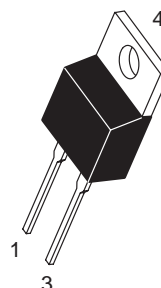
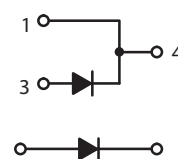
### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	V
Average Rectified Forward Current Total Device, (Rated $V_R$ ), $T_C = 150^\circ\text{C}$	$I_{F(AV)}$	8.0	A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz), $T_C = 150^\circ\text{C}$	$I_{FM}$	16	A
Nonrepetitive Peak Surge Current (Surge Applied at Rated Load Conditions Half-wave, Single Phase, 60 Hz)	$I_{FSM}$	100	A
Operating Junction Temperature and Storage Temperature Range	$T_J, T_{stg}$	-65 to +175	°C

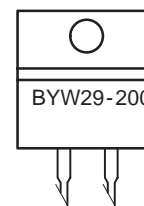
### THERMAL CHARACTERISTICS

Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	°C/W
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## ULTRAFAST RECTIFIERS 8.0 AMPERES 200 V



### MARKING DIAGRAM



CASE 221B  
TO-220AC  
PLASTIC

BYW29-200 = Device Code

### ORDERING INFORMATION

Device	Package	Shipping
BYW29-200	TO-220	50 Units/Rail

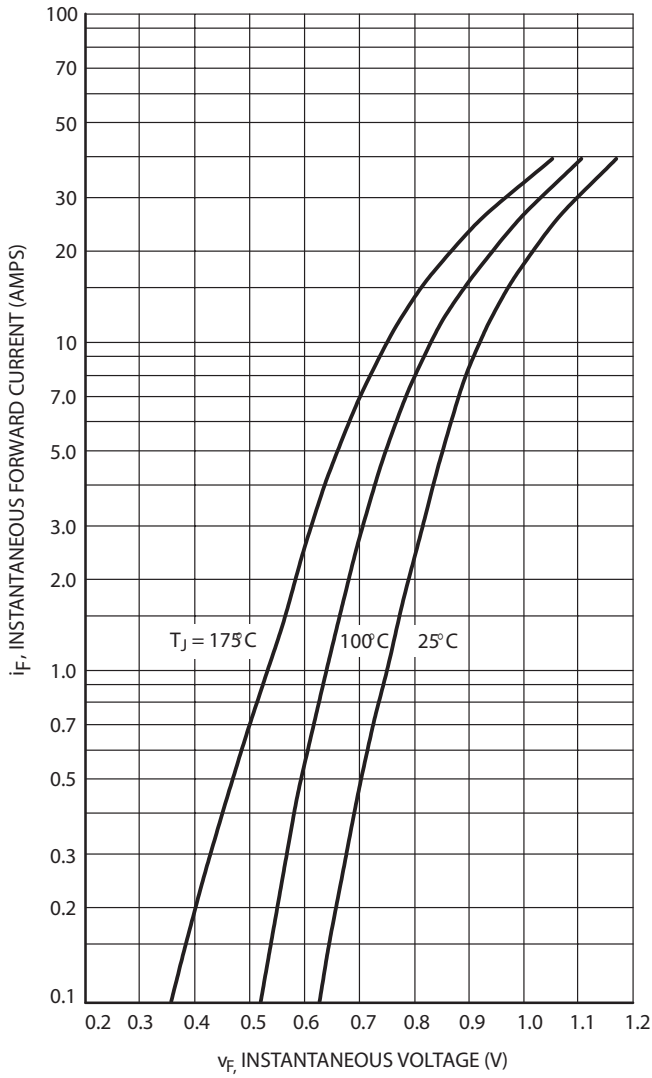
## BYW29-200

### ELECTRICAL CHARACTERISTICS

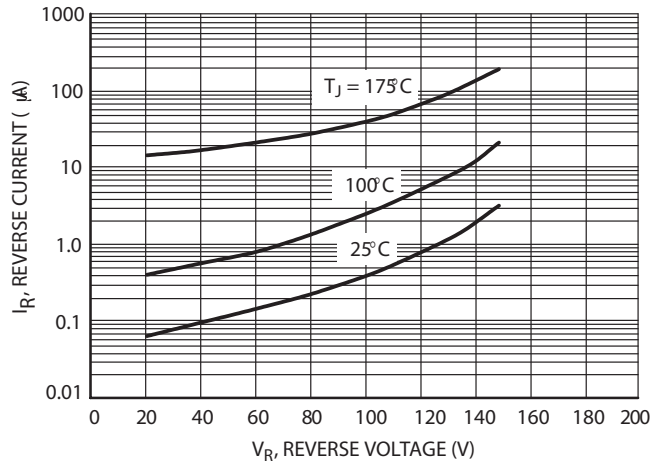
Rating	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) ( $i_F = 5.0 \text{ A}$ , $T_C = 100^\circ\text{C}$ ) ( $i_F = 20 \text{ A}$ , $T_C = 25^\circ\text{C}$ )	$v_F$	0.85 1.3	V
Maximum Instantaneous Reverse Current (Note 1) (Rated Dc Voltage, $T_J = 100^\circ\text{C}$ ) (Rated Dc Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	600 5.0	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1.0 \text{ A}$ , $di/dt = 50 \text{ A}/\mu\text{s}$ ) ( $I_F = 0.5 \text{ A}$ , $i_R = 1.0 \text{ A}$ , $I_{REC} = 0.25 \text{ A}$ )	$t_{rr}$	35 25	ns

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

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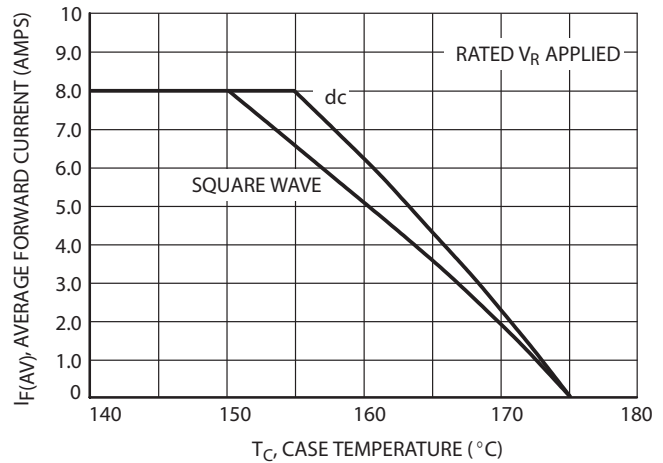


**Figure 1. Typical Forward Voltage**

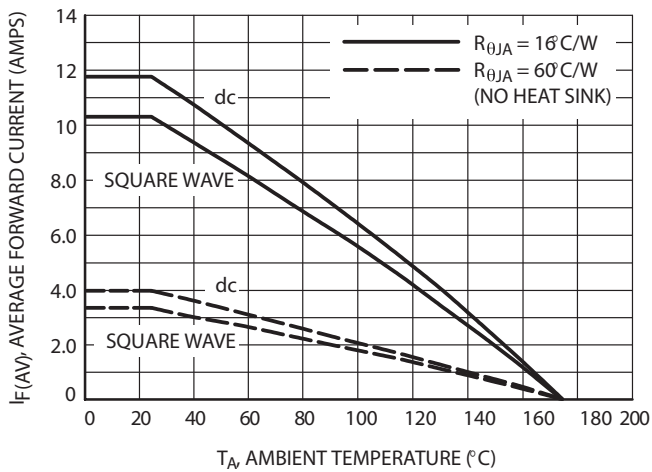


**Figure 2. Typical Reverse Current\***

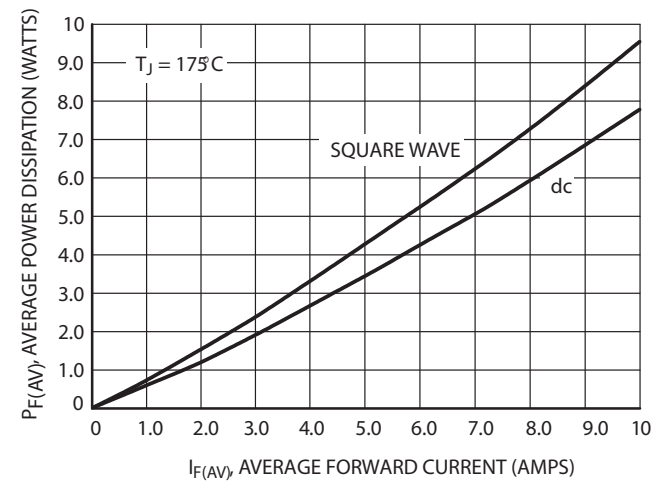
\* The curves shown are typical for the highest voltage device in the grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if sufficiently below rated V



**Figure 3. Current Derating, Case**



**Figure 4. Current Derating, Ambient**



**Figure 5. Power Dissipation**

# BYW29-200

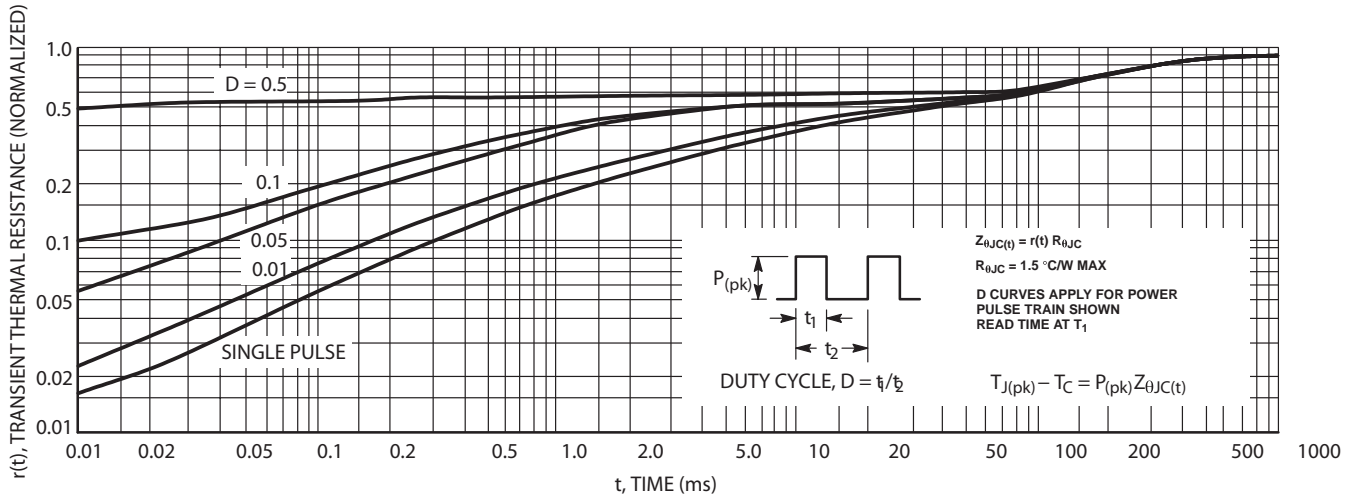


Figure 6. Thermal Response

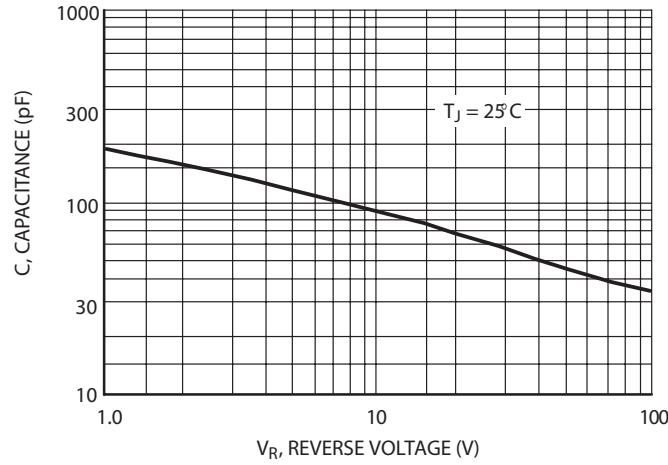
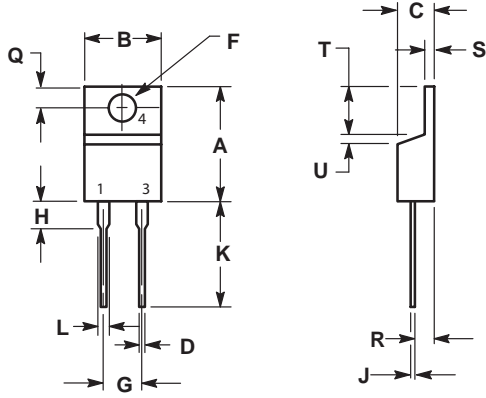


Figure 7. Typical Capacitance

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## 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