BYV32-200

SWITCHMODE™ Power Rectifier

This device is designed for use in switching power supplies, inverters and as free wheeling diodes.

Features

- Ultrafast 35 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- Epoxy Meets UL 94 V-0 @ 0.125 in
- High Temperature Glass Passivated Junction
- Low Leakage Specified @ 150°C Case Temperature
- Current Derating @ Both Case and Ambient Temperatures
- Pb-Free Package is Available*

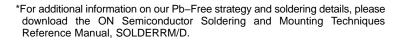
Mechanical Characteristics

- 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

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	200	٧
Average Rectified Forward Current Total Device, (Rated V_R), $T_C = 150^{\circ}C$ Per Leg Total Device	I _{F(AV)}	8.0 16	A
Peak Rectified Forward Current (Rated V _R , Square Wave, 20 kHz), T _C = 150°C – Per Diode Leg	I _{FM}	16	А
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I _{FSM}	100	А
Operating Junction Temperature and Storage Temperature	T _J , T _{stg}	-65 to +175	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

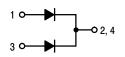




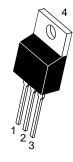
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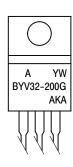
ULTRAFAST RECTIFIER 16 AMPERES 200 VOLTS



MARKING DIAGRAM



TO-220AB CASE 221A PLASTIC



A = Assembly Location

Y = Year
W = Work Week
BYV32-200 = Device Code
G = Pb-Free Package
AKA = Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
BYV32-200	TO-220	50 Units / Rail
BYV32-200G	TO-220 (Pb-Free)	50 Units / Rail

THERMAL CHARACTERISTICS (Per Diode Leg)

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Case	$R_{ heta JC}$	3.0	°C/W
ELECTRICAL CHARACTERISTICS (Per Diode Leg)			
Maximum Instantaneous Forward Voltage (Note 1)	Vr		V

Maximum Instantaneous Forward Voltage (Note 1) ($i_F = 5.0 \text{ Amps}$, $T_C = 100^{\circ}\text{C}$) ($i_F = 20 \text{ Amps}$, $T_C = 25^{\circ}\text{C}$)	V _F	0.85 1.15	V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, $T_C = 100^{\circ}C$) (Rated dc Voltage, $T_C = 25^{\circ}C$)	i _R	600 50	μΑ
Maximum Reverse Recovery Time $ \begin{aligned} (I_F = 1.0 \text{ Amp, di/dt} = 50 \text{ Amps/μs)} \\ (I_F = 0.5 \text{ Amp, } I_R = 1.0 \text{ Amp, } I_{REC} = 0.25 \text{ Amp)} \end{aligned} $	t _{rr}	35 25	ns

^{1.} Pulse Test: Pulse Width = 300 μ s, Duty Cycle \leq 2.0%

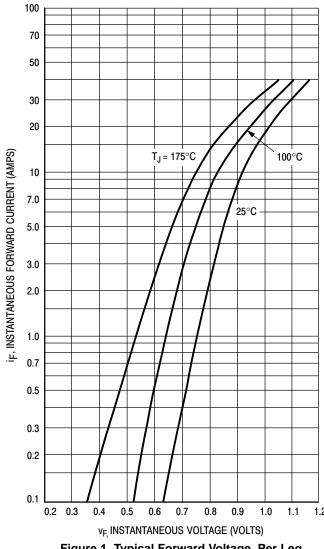


Figure 1. Typical Forward Voltage, Per Leg

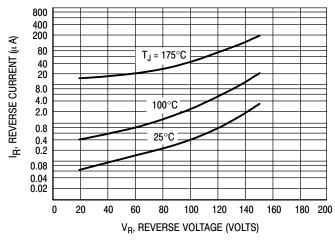


Figure 2. Typical Reverse Current, Per Leg*

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

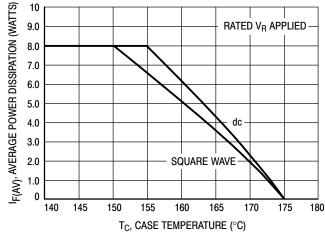
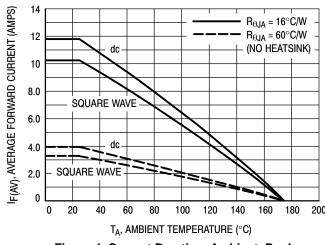


Figure 3. Current Derating, Case, Per Leg



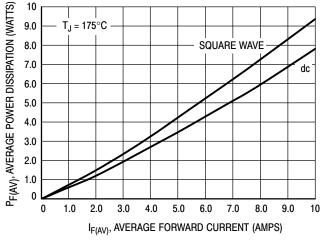


Figure 4. Current Derating, Ambient, Per Leg

Figure 5. Power Dissipation, Per Leg

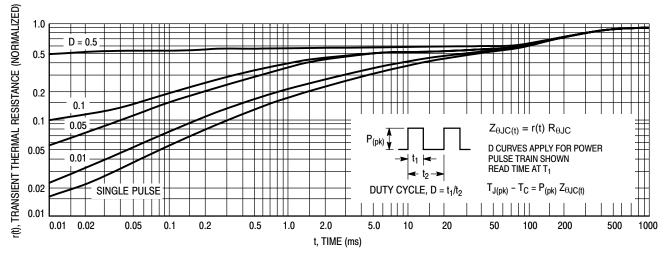


Figure 16. Thermal Response

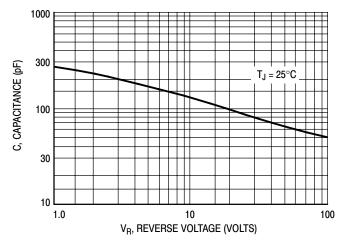


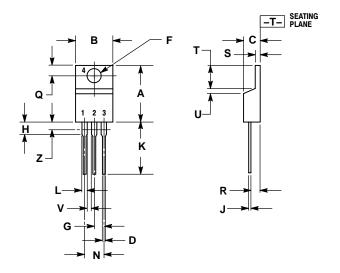
Figure 17. Typical Capacitance, Per Leg

BYV32-200

PACKAGE DIMENSIONS

TO-220 THREE-LEAD TO-220AB

CASE 221A-09 **ISSUE AA**



NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
 DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.570	0.620	14.48	15.75
В	0.380	0.405	9.66	10.28
С	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
۲	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
٦	0.045	0.060	1.15	1.52
Ν	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
Т	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
٧	0.045		1.15	
Z		0.080		2.04

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