

Switch-mode Power Rectifier

BYV32-200

Features and Benefits

- Low Forward Voltage
- Low Power Loss/High Efficiency
- High Surge Capacity
- 175°C Operating Junction Temperature
- 16 A Total (8 A Per Diode Leg)
- These Devices are Pb-Free and are RoHS Compliant*

Applications

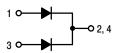
- Power Supply Output Rectification
- Power Management
- Instrumentation

Mechanical Characteristics

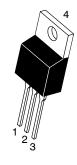
- Case: Epoxy, Molded
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- ESD Rating: Human Body Model 3B

Machine Model C

ULTRAFAST RECTIFIER 16 AMPERES, 200 VOLTS t_{rr} = 35 ns



MARKING DIAGRAM



TO-220 CASE 221A STYLE 6



= Assembly Location

Y = Year

WW = Work Week

BYV32-200 = Device Code

G = Pb-Free Package

AKA = Diode Polarity

ORDERING INFORMATION

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

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^{*}For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

BYV32-200

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _R WM V _R	200	V
Average Rectified Forward Current, T _C = 156°C Per Leg Total Device	I _{F(AV)}	8.0 16	А
Peak Rectified Forward Current (Square Wave, 20 kHz), $T_C = 154^{\circ}C$ – 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

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic	Conditions	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Case	Min. Pad	$R_{\theta JC}$	3.0	°C/W
Maximum Thermal Resistance, Junction-to-Ambient	Min. Pad	$R_{\theta JA}$	60	

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typical	Max	Unit
Instantaneous Forward Voltage (Note 1) ($i_F = 5.0 \text{ A}$, $T_j = 100^{\circ}\text{C}$) ($i_F = 20 \text{ A}$, $T_j = 25^{\circ}\text{C}$)	VF	- -	0.74 1.01	0.85 1.15	٧
Instantaneous Reverse Current (Note 1) (Rated dc Voltage, $T_j = 100^{\circ}\text{C}$) (Rated dc Voltage, $T_j = 25^{\circ}\text{C}$)	İR	- -	21 3.5	600 50	μΑ
Maximum Reverse Recovery Time (I _F = 1.0 A, di/dt = 50 A/ μ s) (I _F = 0.5 A, I _R = 1.0 A, I _{REC} = 0.25 A)	t _{rr}	- -		35 25	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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

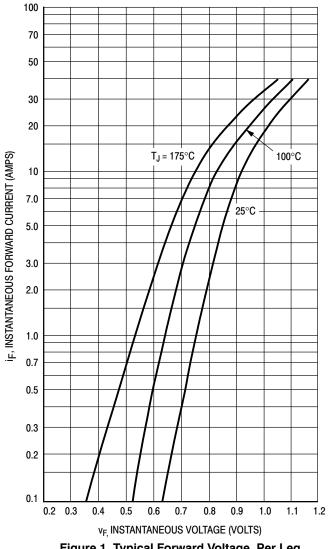


Figure 1. Typical Forward Voltage, Per Leg

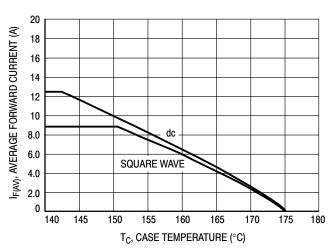


Figure 4. Current Derating, Case, Per Leg

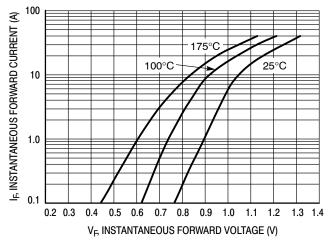


Figure 2. Maximum Forward Voltage

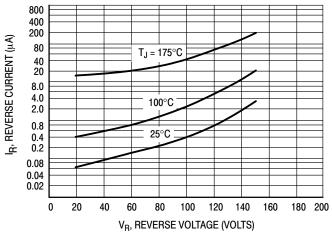


Figure 3. Typical Reverse Current, Per Leg*

* 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.

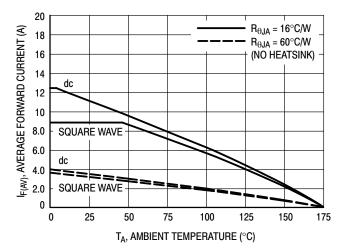


Figure 5. Current Derating, Ambient, Per Leg

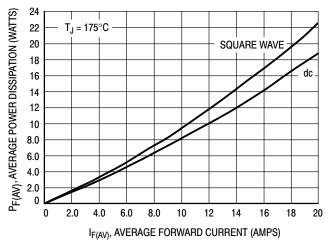


Figure 6. Power Dissipation, Per Leg

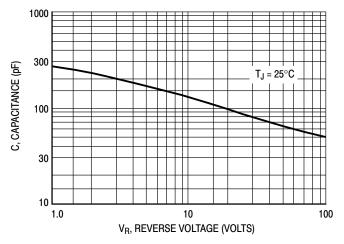


Figure 7. Typical Capacitance, Per Leg

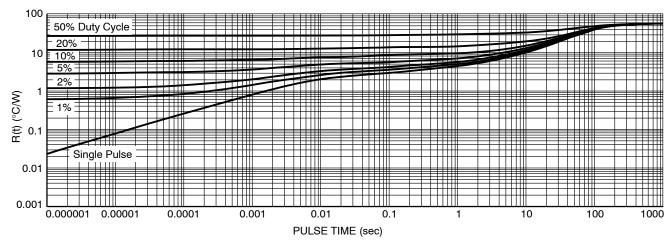


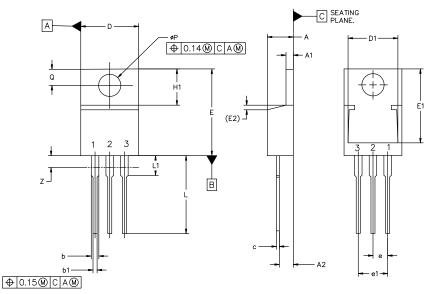
Figure 8. Thermal Response, Junction-to-Ambient





TO-220-3 10.10x15.12x4.45, 2.54P CASE 221A **ISSUE AL**

DATE 05 FEB 2025



MILLIMETERS					
DIM	MIN	NOM	MAX		
Α	4.07	4.45	4.83		
A1	1.15	1.28	1.41		
A2	2.04	2.42	2.79		
b	1.15	1.34	1.52		
b1	0.64	0.80	0.96		
С	0.36	0.49	0.61		
D	9.66	10.10	10.53		
D1	8.43	8.63	8.83		
Е	14.48	15.12	15.75		
E1	12.58	12.78	12.98		
E2	1.27 REF				

MILLIMETERS						
DIM	DIM MIN NOM MAX					
е	2.42	2.54	2.66			
e1	4.83	5.08	5.33			
H1	5.97	6.22	6.47			
L	12.70	13.49	14.27			
L1	2.80	3.45	4.10			
Q	2.54	2.79	3.04			
ØΡ	3.60	3.85	4.09			
Z	-,	-,	3.48			

NOTES:

- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.

 2. CONTROLLING DIMENSION: MILLIMETERS.

 3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

STYLE 1:		STYLE 2:		STYLE 3:		STYLE 4:	
PIN 1.	BASE	PIN 1.	BASE	PIN 1.	CATHODE	PIN 1.	MAIN TERMINAL 1
2.	COLLECTOR	2.	EMITTER	2.	ANODE	2.	MAIN TERMINAL 2
3.	EMITTER	3.	COLLECTOR	3.	GATE	3.	GATE
4.	COLLECTOR	4.	EMITTER	4.	ANODE	4.	MAIN TERMINAL 2
STYLE 5:		STYLE 6:		STYLE 7:		STYLE 8:	
PIN 1.	GATE	PIN 1.	ANODE	PIN 1.	CATHODE	PIN 1.	CATHODE
2.	DRAIN	2.	CATHODE	2.	ANODE	2.	ANODE
3.	SOURCE	3.	ANODE	3.	CATHODE	3.	EXTERNAL TRIP/DELAY
4.	DRAIN	4.	CATHODE	4.	ANODE	4.	ANODE
STYLE 9:		STYLE 10:		STYLE 11:	:	STYLE 12:	:
PIN 1.	GATE	PIN 1.	GATE	PIN 1.	DRAIN	PIN 1.	MAIN TERMINAL 1
2.	COLLECTOR	2.	SOURCE	2.	SOURCE	2.	MAIN TERMINAL 2
3.	EMITTER	3.	DRAIN	3.	GATE	3.	GATE
4.	COLLECTOR	4.	SOURCE	4.	SOURCE	4.	NOT CONNECTED

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DESCRIPTION:	TO-220-3 10.10x15.12x4.45, 2.54P		PAGE 1 OF 1	

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