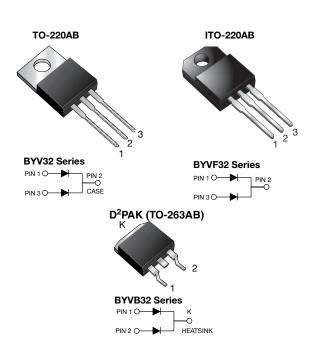
BYV32-xxx, BYVF32-xxx, BYVB32-xxx

Vishay General Semiconductor

HALOGEN

FREE

Dual Common-Cathode Ultrafast Rectifier



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS						
I _{F(AV)}	18 A					
V_{RRM}	50 V to 200 V					
I _{FSM}	150 A					
t _{rr}	25 ns					
V _F	0.85 V					
T _J max.	150 °C					
Package	TO-220AB, ITO-220AB, D ² PAK (TO-263AB)					
Circuit configuration	Common cathode					

FEATURES

- Power pack
- Glass passivated pellet chip junction
- · Ultrafast recovery time
- · Low switching losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 275 °C max. 10 s, per JESD 22-B106 (for TO-220AB and ITO-220AB package)
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHE3 (for ITO-220AB) base P/NHM3 (for D²PAK (TO-263AB package))
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, D2PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified ("_X" denotes revision code e.g. A, B,....)

(_X denotes revision code e.g. A, b,....)

Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test, HE3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs max.

BYV32-xxx, BYVF32-xxx, BYVB32-xxx

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MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	BYV32-50 BYVF32-50	BYV32-100 BYVF32-100	BYV32-150 BYVF32-150	BYV32-200 BYVF32-200 BYVB32-200	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V	
Maximum RMS voltage	V _{RMS}	35	70	105	140	V	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V	
Maximum average forward rectified current at $T_C = 125 ^{\circ}C$	I _{F(AV)}	18			Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	150			Α		
Operating storage and temperature range	T _J , T _{STG}	-65 to +150			°C		
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V _{AC}	1500			V		

ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	BYV32-50 BYVF32-50	BYV32-100 BYVF32-100	BYV32-150 BYVF32-150	BYV32-200 BYVF32-200 BYVB32-200	UNIT
Maximum instantaneous forward	I _F = 20 A	T _J = 25 °C	V _E (1)	1.15				V
voltage per diode	_F = 5.0 A	T _J = 100 °C	V _F ('')	0.85				
Maximum DC reverse current		T _J = 25 °C		10			μА	
per diode at rated DC blocking voltage		T _J = 100 °C	I _R	600				
Maximum reverse recovery time per diode	$I_F = 1 \text{ A}, V_R = 30 \text{ V}$ $dI/dt = 100 \text{ A/}\mu\text{s},$ $I_{rr} = 10 \% I_{RM}$		t _{rr}	25				ns
Typical junction capacitance per diode	4.0 V, 1 MI		CJ	45			pF	

Note

⁽¹⁾ Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	BYV	BYVF	BYVB	UNIT	
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	1.6	5.0	1.6	°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	BYV32-200-E3/45	1.85	45	50/tube	Tube		
ITO-220AB	BYVF32-200-E3/45	1.97	45	50/tube	Tube		
D ² PAK (TO-263AB)	BYVB32-200-M3/I	1.35	I	800/reel	Tape and reel		
ITO-220AB	BYVF32-200HE3_A/P (1)	1.97	Р	50/tube	Tube		
D ² PAK (TO-263AB)	BYVB32-200HM3/I (1)	1.35	I	800/reel	Tape and reel		

Note

⁽¹⁾ AEC-Q101 qualified, available in ITO-220AB and D2PAK (TO-263AB) package



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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

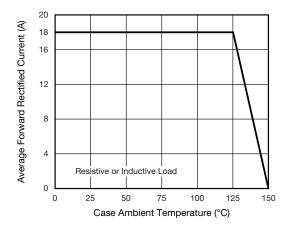


Fig. 1 - Forward Current Derating Curve

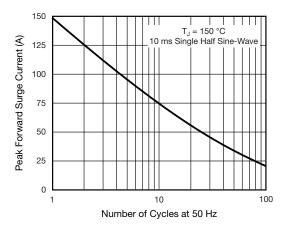


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

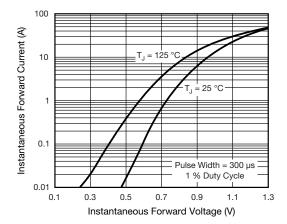


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

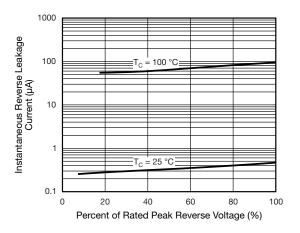


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

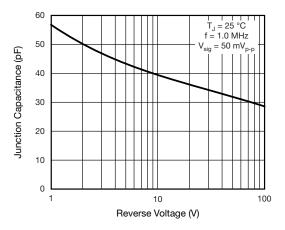


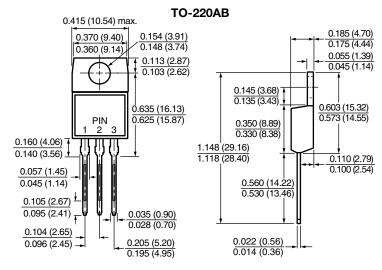
Fig. 5 - Typical Junction Capacitance Per Diode

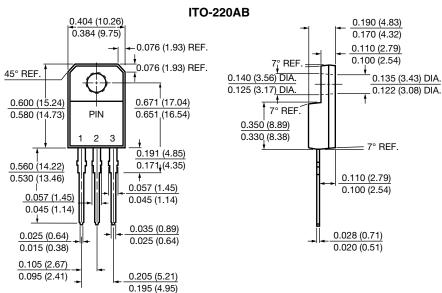


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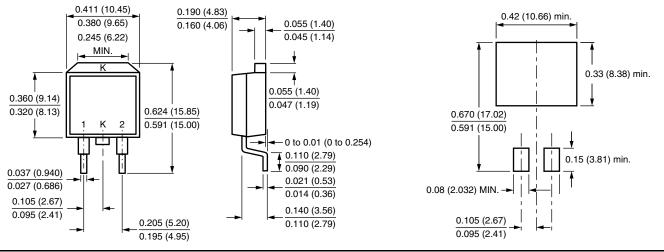
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





D²PAK (TO-263AB)

Mounting Pad Layout





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