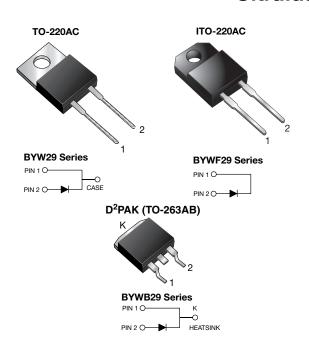
BYW29-xxx, BYWF29-xxx, BYWB29-xxx

Vishay General Semiconductor

HALOGEN

FREE

Ultrafast Rectifier



DESIGN SUPPORT TOOLS AVAILABLE



PRIMARY CHARACTERISTICS						
I _{F(AV)}	8.0 A					
V _{RRM}	50 V to 200 V					
I _{FSM}	100 A					
t _{rr}	25 ns					
V_{F}	0.8 V					
T _J max.	150 °C					
Package	TO-220AC, ITO-220AC, D ² PAK (TO-263AB)					
Circuit configurations	Single					

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 (D²PAK (TO-263AB package))
- Solder dip 275 °C max. 10 s, per JESD 22-B106 (for TO-220AC and ITO-220AC package)
- AEC-Q101 qualified available
 - Automotive ordering code:
 - base P/NHE3 (for ITO-220AC)
 - base P/NHM3 (for D2PAK TO-263AB package))
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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-220AC, ITO-220AC, 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,....)

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

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

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.



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MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	BYW29-50 BYWF29-50	BYW29-100 BYWF29-100	BYW29-150 BYWF29-150	BYW29-200 BYWF29-200 BYWB29-200	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 $T_C = 105 ^{\circ}C$	I _{F(AV)}	8.0			Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100			Α	
Operating and storage temperature range	T _J , T _{STG}	-65 to +150			°C	
Isolation voltage (ITO-220AC only) from terminal to heatsink t = 1 min	V _{AC}	1500			٧	

ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	BYW29-50 BYWF29-50	BYW29-100 BYWF29-100	BYW29-150 BYWF29-150	BYW29-200 BYWF29-200 BYWB29-200	UNIT
Maximum instantaneous	$I_F = 20 \text{ A}$	T _J = 25 °C	= 25 °C V _F ⁽¹⁾		1.3			V
forward voltage	I _F = 8.0 A	T _J = 150 °C	VF ('')	0.8				
Maximum DC reverse current at rated DC blocking voltage		T _C = 25 °C		10			μΑ	
		T _C = 100 °C	I _R	500				
Maximum reverse recovery time	$I_F = 1 \text{ A}, V_R = 30 \text{ V},$ dI/dt = 100 A/µs, $I_{rr} = 10 \% I_{RM}$		t _{rr}	25			ns	
Typical junction capacitance	4.0 V, 1 MHz		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	BYW	BYWF	BYWB	UNIT	
Typical thermal resistance from junction to case per leg	$R_{\theta JC}$	2.5	5.5	2.5	°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AC	BYW29-200-E3/45	1.80	45	50/tube	Tube		
ITO-220AC	BYWF29-200-E3/45	1.95	45	50/tube	Tube		
D ² PAK (TO-263AB)	BYWB29-200-M3/I	1.77	I	800/reel	Tape and reel		
ITO-220AC	BYWF29-200HE3_A/P (1)	1.95	Р	50/tube	Tube		
D ² PAK (TO-263AB)	BYWB29-200HM3/I (1)	1.77	I	800/reel	Tape and reel		

Note

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

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

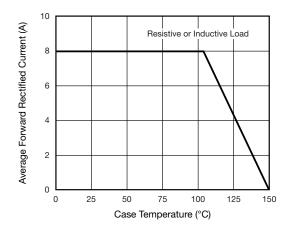


Fig. 1 - Maximum Forward Current Derating Curve

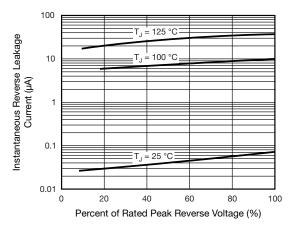


Fig. 4 - Typical Reverse Leakage Characteristics

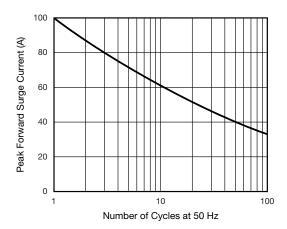


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

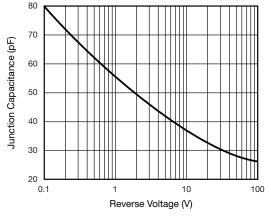


Fig. 5 - Typical Junction Capacitance

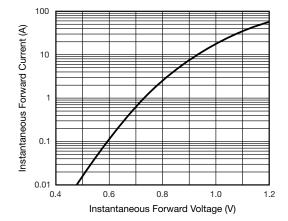


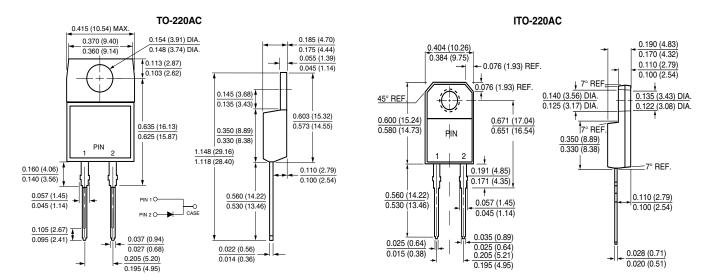
Fig. 3 - Typical Instantaneous Forward Characteristics

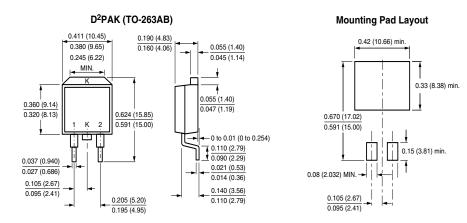


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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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