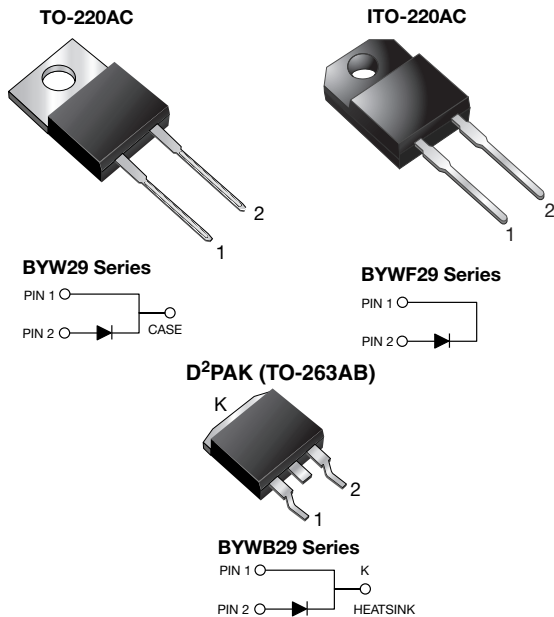




**THE DATASHEET OF
BYWB29-100-E3/81**



Ultrafast Rectifier



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



RoHS
COMPLIANT
HALOGEN
FREE
Available

DESIGN SUPPORT TOOLS AVAILABLE



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
V_{RRM}	50 V to 200 V
I_{FSM}	100 A
t_{tr}	25 ns
V_F	0.8 V
$T_J \text{ max.}$	150 °C
Package	TO-220AC, ITO-220AC, D ² PAK (TO-263AB)
Circuit configurations	Single

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 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.



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 °C	I _{F(AV)}	8.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100				A
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				V

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 forward voltage	I _F = 20 A	T _J = 25 °C	V _F ⁽¹⁾	1.3				V
	I _F = 8.0 A	T _J = 150 °C		0.8				
Maximum DC reverse current at rated DC blocking voltage	T _C = 25 °C		I _R	10				μA
	T _C = 100 °C			500				
Maximum reverse recovery time	I _F = 1 A, V _R = 30 V, dI/dt = 100 A/μs, I _{rr} = 10 % I _{RM}		t _{rr}	25				ns
Typical junction capacitance	4.0 V, 1 MHz		C _J	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 _{θJC}	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	P	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



RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

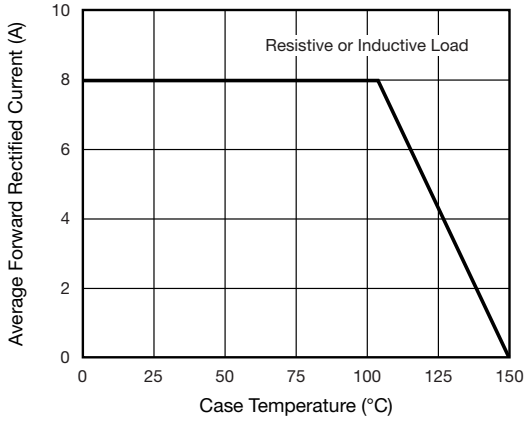


Fig. 1 - Maximum Forward Current Derating Curve

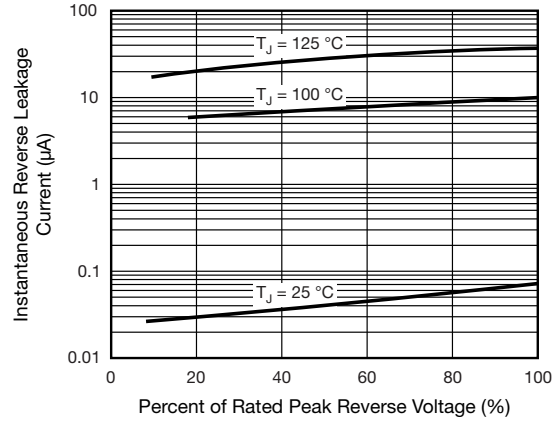


Fig. 4 - Typical Reverse Leakage Characteristics

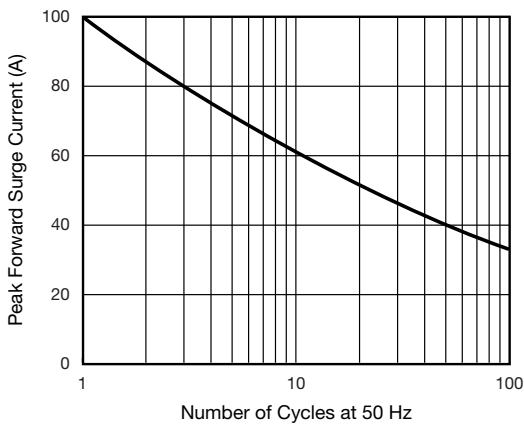


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

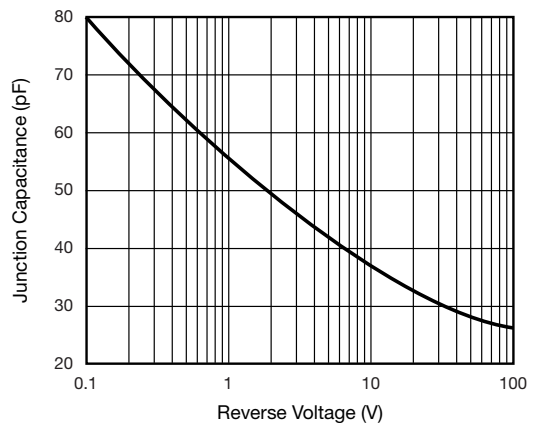


Fig. 5 - Typical Junction Capacitance

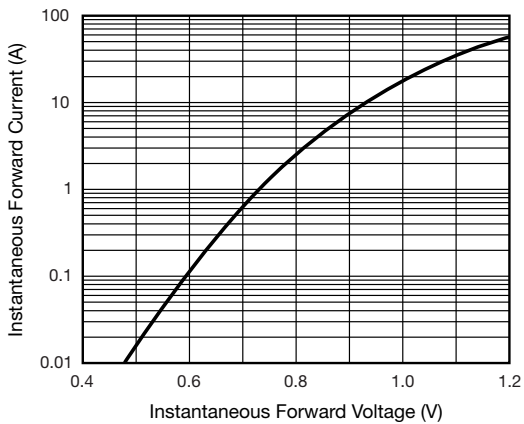
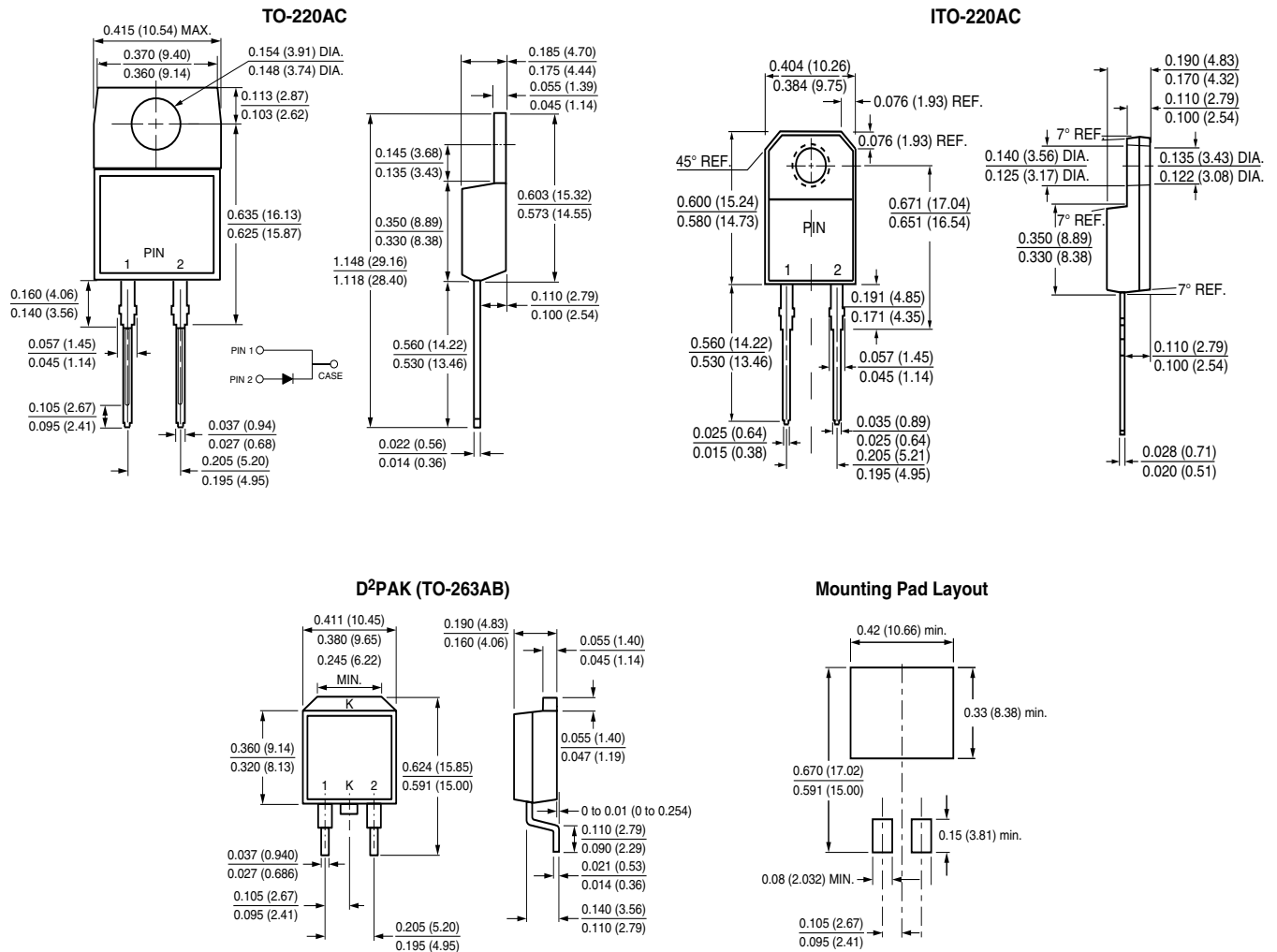


Fig. 3 - Typical Instantaneous Forward Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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