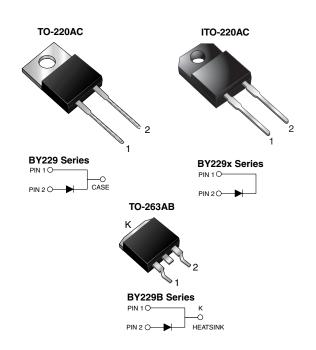


Vishay General Semiconductor

## **Fast Switching Plastic Rectifier**



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	8.0 A				
$V_{RRM}$	200 V to 800 V				
I <sub>FSM</sub>	100 A				
t <sub>rr</sub>	145 ns				
V <sub>F</sub>	1.85 V				
T <sub>J</sub> max.	150 °C				

### **FEATURES**



- Glass passivated chip junction
- Superfast recovery time for high efficiency
- · Low leakage current

- BAHS
- · High forward surge capability
- Meets MSL level 1, per J-STD-020, LF COMPLIANT maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AC and ITO-220AC package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

#### **TYPICAL APPLICATIONS**

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes application.

### **MECHANICAL DATA**

Case: TO-220AC, ITO-220AC, TO-263AB Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for commercial grade, meets JESD 201 class 1A whiskter test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T <sub>C</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	BY229-200	BY229-400	BY229-600	BY229-800	UNIT	
Maximum recurrent peak reverse voltage	$V_{RRM}$	200	400	600	800	V	
Maximum RMS voltage	V <sub>RMS</sub>	140	280	420	560	V	
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	V	
Maximum average forward rectified current at $T_C = 100$ °C	I <sub>F(AV)</sub>	8.0				Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100				Α	
Maximum slope of reverse recovery current $I_F = 2.0 \text{ A}, V_R = 30 \text{ V}, \text{ dI/dt} = 20 \mu \text{s}$	dl/dt	60				A/μs	
Operating junction and storage temperature range	$T_J, T_{STG}$	- 40 to + 150				°C	
Isolation voltage (ITO-220AC only) from terminal to heatsink t = 1 min	V <sub>AC</sub>	1500				V	

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>C</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST COI	NDITIONS	SYMBOL BY229-200 BY229-400 BY229-600 BY229-		BY229-800	UNIT		
Maximum instantaneous forward voltage <sup>(1)</sup>	20 A		V <sub>F</sub>	1.85			٧	
Maximum DC reverse current at rated DC blocking voltage		T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	10 300				μΑ
Maximum reverse recovery time		$1.0 \text{ A, V}_{R} = 30 \text{ V,}$ = 50 A/ $\mu$ s, $I_{rr} = 10 \% I_{RM}$		145				ns
Maximum recovered stored charge	I <sub>F</sub> = 2.0 A, V <sub>R</sub> dI/dt = 20 A/μs		Q <sub>rr</sub>	700			nC	

### Note:

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	BY229	BY229X	BY229B	UNIT		
Typical thermal resistance from junction to case	$R_{\theta JC}$	2.0	4.8	2.0	°C/W		
Typical thermal resistance from junction to air	$R_{\theta JA}$	20	-	20	°C/W		

ORDERING INFORMATION (Example)								
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
TO-220AC	BY229-200-E3/45	1.80	45	50/tube	Tube			
ITO-220AC	BY229X-200-E3/45	1.95	45	50/tube	Tube			
TO-263AB	BY229B-200-E3/45	1.77	45	50/tube	Tube			
TO-263AB	BY229B-200-E3/81	1.77	81	800/reel	Tape reel			
TO-220AC	BY229-200HE3/45 (1)	1.80	45	50/tube	Tube			
ITO-220AC	BY229X-200HE3/45 (1)	1.95	45	50/tube	Tube			
TO-263AB	BY229B-200HE3/45 (1)	1.77	45	50/tube	Tube			
TO-263AB	BY229B-200HE3/81 (1)	1.77	81	800/reel	Tape reel			

#### Note:

(1) Automotive grade AEC Q101 qualified

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### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

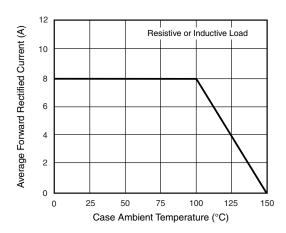


Figure 1. Forward Current Derating Curve

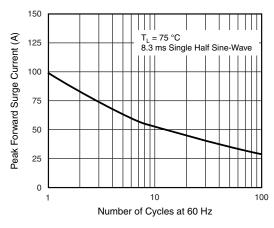


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

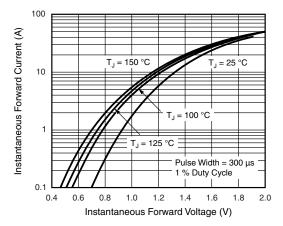


Figure 3. Typical Instantaneous Forward Characteristics

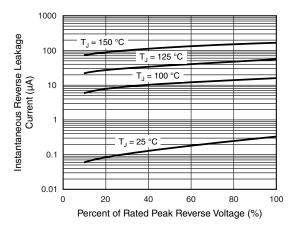


Figure 4. Typical Reverse Leakage Characteristics

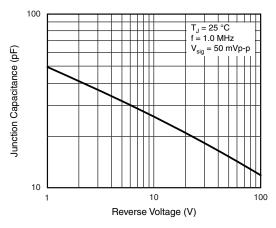


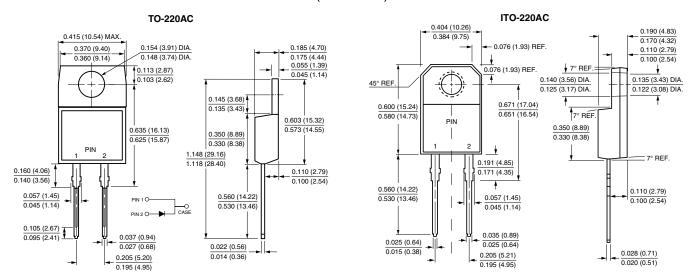
Figure 5. Typical Junction Capacitance

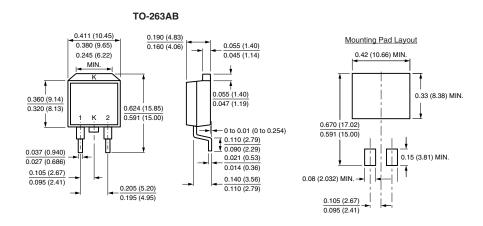
## BY229(X,B)-200 thru BY229(X,B)-800

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### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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