

BY500-100 thru BY500-800

Vishay General Semiconductor

Soft Recovery Fast Switching Plastic Rectifier



PRIMARY CHARACTERISTICS						
I _{F(AV)}	5.0 A					
V _{RRM}	100 V to 800 V					
I _{FSM}	200 A					
t _{rr}	200 ns					
I _R	10 µA					
V _F	1.35 V					
T _J max.	125 °C					

FEATURES

- · Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106 COMPLIANT
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in medium frequency rectification of switching mode power supplies, inverters, converters, TV sanning, Ultrasonic-system, speed controlled DC motors, low RF interference and freewheeling diode circuit.

Note

• These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-201AD, molded epoxy body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS compliant, commercial grade

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	100	200	400	600	800	V
Maximum RMS voltage	V _{RMS}	70	140	280	420	560	V
Maximum DC blocking voltage	V _{DC}	100	200	400	600	800	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 45 ^\circ\text{C}$	I _{F(AV)}	5.0					А
Peak forward surge current 10 ms single half sine-wave superimposed on rated load at $T_A = 25$ °C	I _{FSM}	200			А		
Maximum repetitive peak forward surge	I _{FRM}	10				А	
Operating junction temperature range	Τ _J	- 50 to + 125				°C	
Storage temperature range	T _{STG}	- 50 to + 150			°C		



RoHS



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ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	UNIT
Maximum instantaneous forward voltage	5.0 A		V _F		1.35				
Maximum DC reverse current at rated DC		T _A = 25 °C	1-	10					μA
blocking voltage		T _A = 100 °C	I _R	1.0					mA
Maximum reverse recovery time			t _{rr}	200					ns
Maximum reverse recovery current		A, V _R = 30 V, 50 A/µs, % I _{RM}	I _{RM(REC)}	2.0			A		
Typical junction capacitance	4.0 V, 1	MHz	CJ	28			pF		

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	UNIT
Typical thermal resistance	R _{0JA} ⁽¹⁾	22				°C/W	

Note

⁽¹⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length with both leads to heat sink

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
BY500-400-E3/54	1.1	54	1400	13" diameter paper tape and reel				
BY500-400-E3/73	1.1	73	1000	Ammo pack packaging				

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

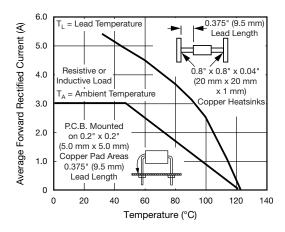
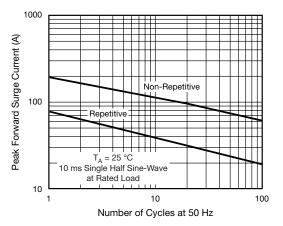


Fig. 1 - Forward Current Derating Curves





www.vishay.com 2 For technical questions within your region, please contact one of the following: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u>



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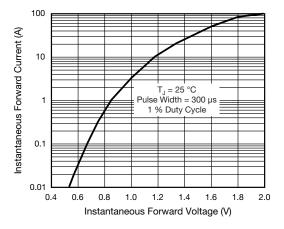


Fig. 3 - Typical Instantaneous Forward Characteristics

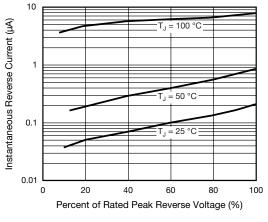
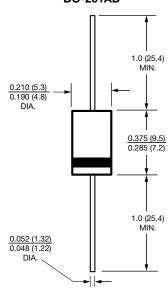


Fig. 4 - Typical Reverse Characteristics







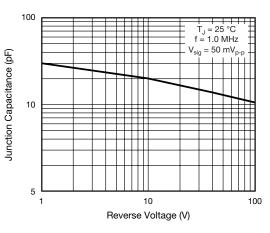


Fig. 5 - Typical Junction Capacitance



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