BY500-100, BY500-200, BY500-400, BY500-600, BY500-800



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Vishay General Semiconductor

RoHS

# **Soft Recovery Fast Switching Plastic Rectifier**



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub> 5.0 A					
V <sub>RRM</sub>	100 V, 200 V, 400 V, 600 V, 800 V				
I <sub>FSM</sub>	200 A				
t <sub>rr</sub>	200 ns				
I <sub>R</sub>	10 µA				
V <sub>F</sub>	1.35 V				
T <sub>J</sub> max.	125 °C				
Package	DO-201AD				
Diode variation	Single die				

### **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
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

# **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

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

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Revision: 26-Jul-13

BY500-100, BY500-200, BY500-400, BY500-600, BY500-800

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ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 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 <sub>F</sub>	1.35					v
Maximum DC reverse		T <sub>A</sub> = 25 °C		10					μA
blocking voltage		T <sub>A</sub> = 100 °C	I <sub>R</sub>	1.0					mA
Maximum reverse recovery time				<sub>F</sub> = 1.0 A, V <sub>R</sub> = 30 V, t <sub>rr</sub> 200 dl/dt = 50 A/µs,					ns
Maximum reverse recovery current	$I_{rr} = 10$		I <sub>RM(REC)</sub>	2.0			А		
Typical junction capacitance	4.0 V, 1	MHz	CJ	28				pF	

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

#### Note

/ISHA

<sup>(1)</sup> 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<sub>A</sub> = 25 °C unless otherwise noted)

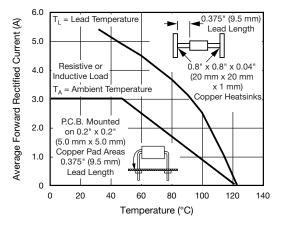


Fig. 1 - Forward Current Derating Curves

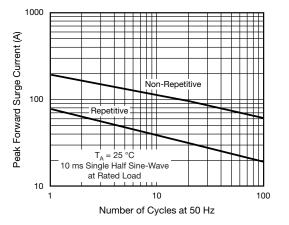
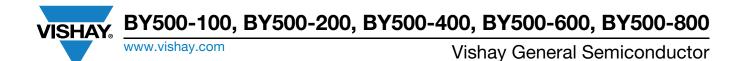


Fig. 2 - Maximum Peak Forward Surge Current

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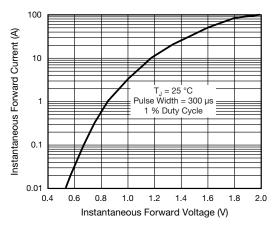


Fig. 3 - Typical Instantaneous Forward Characteristics

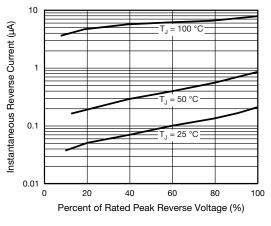
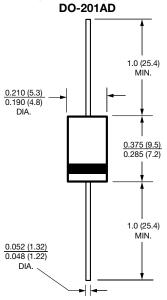


Fig. 4 - Typical Reverse Characteristics

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



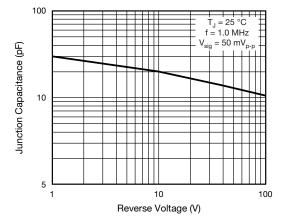


Fig. 5 - Typical Junction Capacitance

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