



SYNSEMI SEMICONDUCTOR

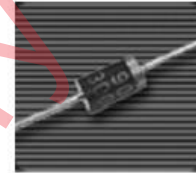
# BY500-50 thru BY500-1000

5.0 Amps. Fast Recovery Rectifiers

Voltage Range 50 to 1000 Volts Forward Current 5.0 Amperes

## Features

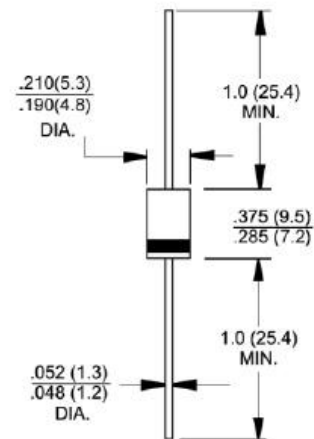
- ◆ Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- ◆ High surge current capability
- ◆ Fast switching for high efficiency
- ◆ High forward current operation at  $T_L=45^\circ\text{C}$
- ◆ Construction utilizes void-free molded plastic technique
- ◆ Especially designed for applications such as switch mode power supplies, inverters, converters, TV scanning, Ultrasonic-systems, speed controlled DC motors, low RF interference and free wheeling diode circuits
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension



DO-201AD

## Mechanical Data

- ◆ Case: JEDEC DO-201AD, molded plastic body
- ◆ Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- ◆ Polarity: Color band denotes cathode end
- ◆ Mounting Position: Any
- ◆ Weight: 0.042 ounce, 1.195 grams



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	BY500-50	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	BY500-1000	Units
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_L=45^\circ\text{C}$	$I_{F(AV)}$	5.0							Amps
Peak forward surge current 10ms single half sine-wave superimposed on rated load at $T_A=25^\circ\text{C}$	$I_{FSM}$	200.0							Amps
Maximum repetitive peak forward surge	$I_{FRM}$	10							Amps
Maximum instantaneous forward voltage at 5.0A	$V_F$	1.35							Volts
Maximum DC reverse current at rated DC blocking voltage	$I_R$	10.0 1.0							$\mu\text{A}$ mA
Maximum reverse recovery time (Note 1)	$t_r$	200							nS
Maximum reverse recovery current at $I_F=1.0\text{A}$ , $V_R=30\text{V}$ , $di/dt=50\text{A}/\mu\text{s}$ , $I_r=10\% I_{FRM}$	$I_{RM(REC)}$	2.0							Amps
Typical junction capacitance at 4.0V, 1MHz	$C_j$	28							pF
Typical thermal resistance (Note 1)	$R_{\theta JA}$	22							$^\circ\text{C}/\text{W}$
Operating junction temperature range	$T_J$	-50 to +125							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-50 to +150							$^\circ\text{C}$

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

# BY500-50 thru BY500-1000

## RATINGS AND CHARACTERISTIC CURVES

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

