

### Soft Recovery Fast-Switching Plastic Rectifier

#### Major Ratings and 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 $\mu$ A
$V_F$	1.35 V
$T_j$ max.	125 °C



DO-201AD

#### Features

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds



#### Mechanical Data

**Case:** DO-201AD, molded epoxy body

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D

**Polarity:** Color band denotes cathode end

#### Typical Applications

For use in medium frequency rectification of switching mode power supplies, inverters, converters, TV scanning, Ultrasonic-system, speed controlled DC motors, low RF interference and free wheeling diode circuit. (Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

#### Maximum Ratings

( $T_A = 25$  °C unless otherwise noted)

Parameter	Symbols	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	Units
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 $T_L = 45$ °C	$I_{F(AV)}$			5.0			A
Peak forward surge current 10ms single half sine-wave superimposed on rated load at $T_A = 25$ °C	$I_{FSM}$			200			A
Maximum repetitive peak forward surge	$I_{FRM}$			10			A
Operating junction temperature range	$T_J$			- 50 to + 125			°C
Storage temperature range	$T_{STG}$			- 50 to + 150			°C

# BY500-100 thru BY500-800

Vishay General Semiconductor



## Electrical Characteristics

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

Parameter	Test condition	Symbols	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	Units
Maximum instantaneous forward voltage	at 5.0 A	$V_F$			1.35			V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	$I_R$			10	1.0		$\mu\text{A}$ mA
Maximum reverse recovery time <sup>(1)</sup>		$t_{rr}$			200			ns
Maximum reverse recovery current	at $I_F = 1.0 \text{ A}$ , $V_R = 30 \text{ V}$ , $di/dt = 50 \text{ A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$	$I_{RM(REC)}$			2.0			A
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$			28			pF

## Thermal Characteristics

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

Parameter	Symbols	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	Units
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$			22			$^\circ\text{C}/\text{W}$

Notes:

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

## Ratings and Characteristics Curves

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

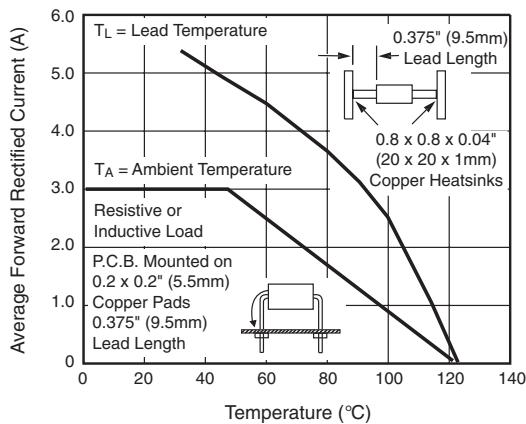


Figure 1. Forward Current Derating Curves

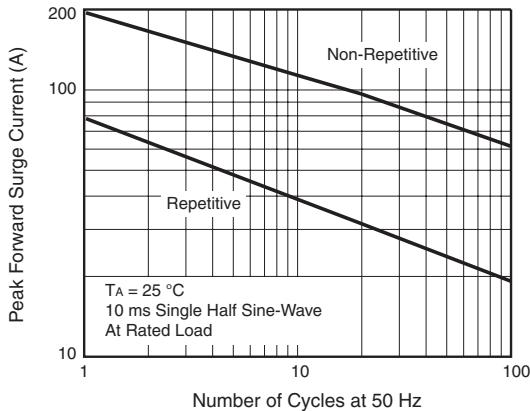


Figure 2. Maximum Peak Forward Surge Current

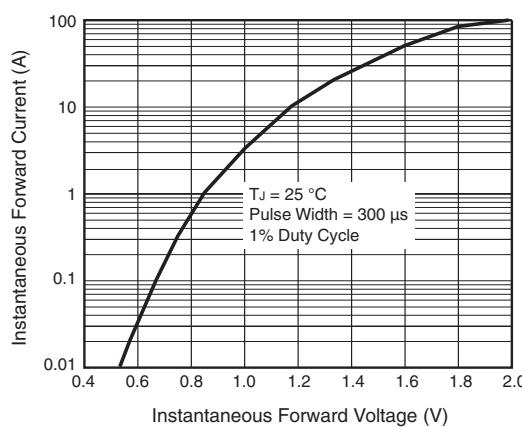


Figure 3. Typical Instantaneous Forward Characteristics

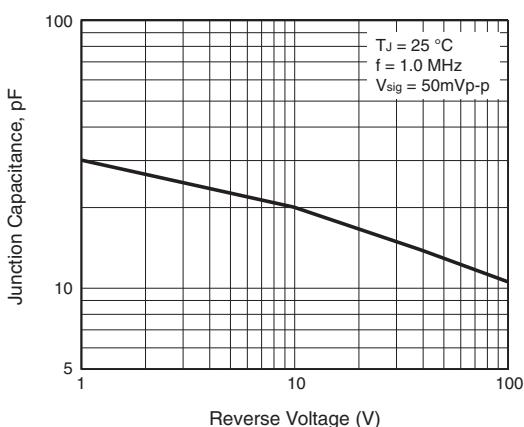


Figure 5. Typical Junction Capacitance

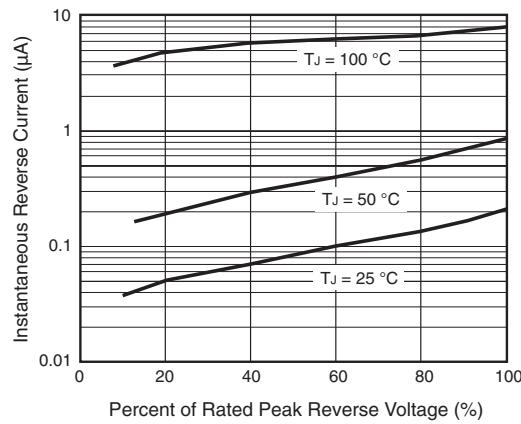
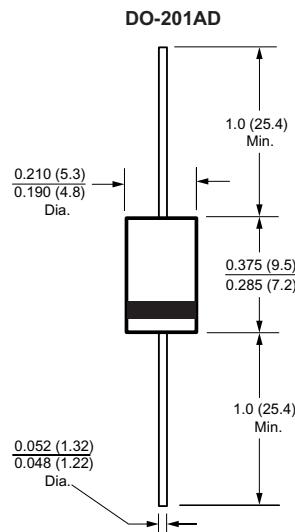


Figure 4. Typical Reverse Characteristics

### Package outline dimensions in inches (millimeters)





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