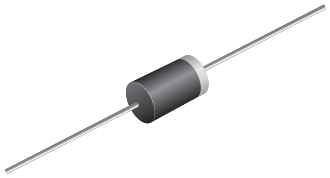
BY500-100 thru BY500-800

Vishay General Semiconductor

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 µA
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 sanning, 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

Electrical Characteristics

(T_A = 25 °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 °C T_A= 100 °C	I_R	10 1.0					µA mA
Maximum reverse recovery time (1)		t_{rr}	200					ns
Maximum reverse recovery current	at I_F = 1.0 A, V_R = 30 V, di/dt = 50 A/µs, 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 °C unless otherwise noted)

Parameter	Symbols	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	Units
Typical thermal resistance (1)	$R_{\theta JA}$	22					°C/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 °C unless otherwise noted)

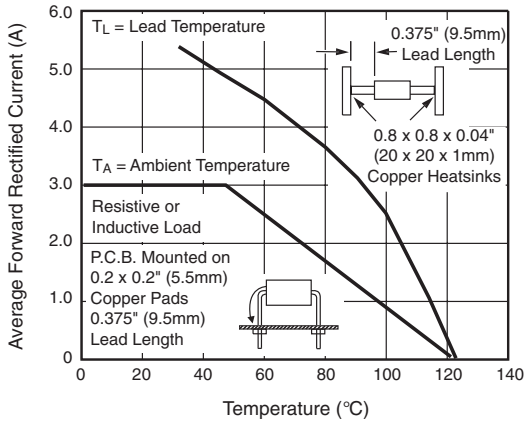


Figure 1. Forward Current Derating Curves

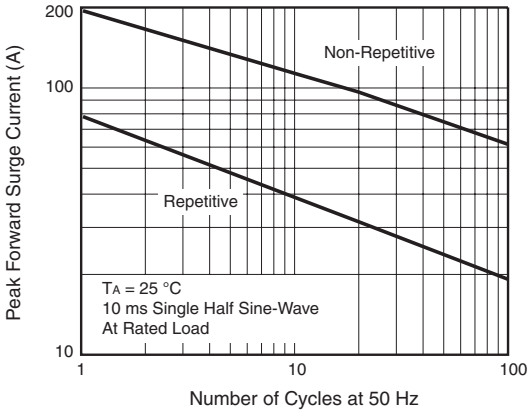


Figure 2. Maximum Peak Forward Surge Current

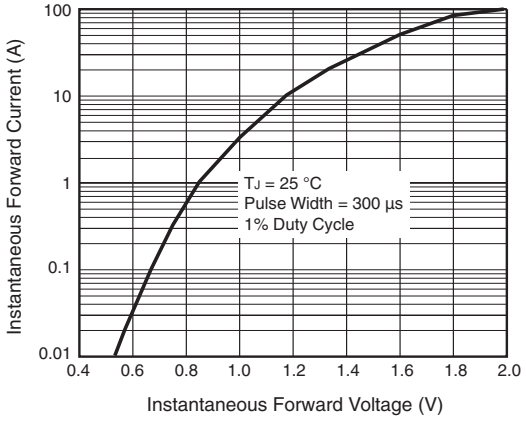


Figure 3. Typical Instantaneous Forward Characteristics

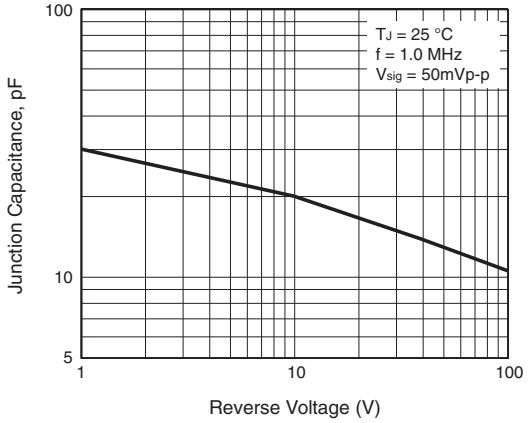


Figure 5. Typical Junction Capacitance

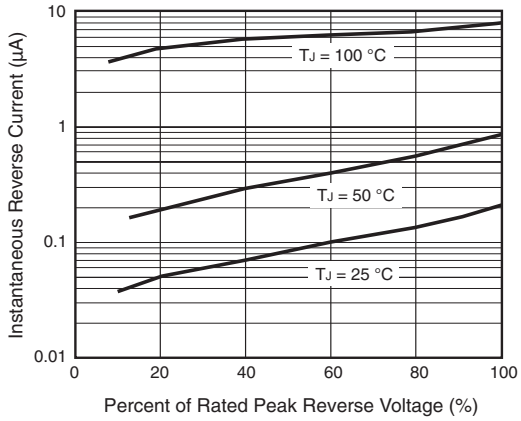
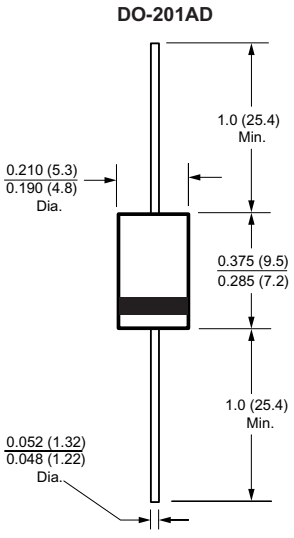


Figure 4. Typical Reverse Characteristics

Package outline dimensions in inches (millimeters)



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