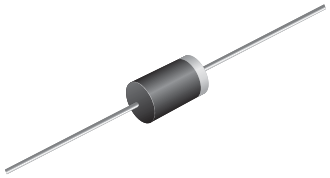
BY396P thru BY399P

Vishay General Semiconductor

Soft Recovery Fast-Switching Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	3.0 A
V_{RRM}	100 V to 800 V
I_{FSM}	100 A
t_{rr}	500 ns
I_R	10 µA
V_F	1.25 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 fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and Telecommunication.

(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	BY396P	BY397P	BY398P	BY399P	Units
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	400	800	V
Maximum RMS voltage	V_{RMS}	70	140	280	560	V
Maximum DC blocking voltage	V_{DC}	100	200	400	800	V
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at T_A = 50 °C	$I_{F(AV)}$	3.0				A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load at T_A= 50 °C	I_{FSM}	100				A
Maximum repetitive peak forward surge at f < 15 KHz	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	BY396P	BY397P	BY398P	BY399P	Units
Maximum instantaneous forward voltage	at 3.0 A	V_F	1.25				V
Maximum DC reverse current at rated DC blocking voltage	T_A= 25 °C T_A= 100 C	I_R	10 500				µA
Maximum reverse recovery time	at I_F = 10 mA, I_R = 10 mA, I_{rr} = 1.0 mA	t_{rr}	500				ns
Maximum forward recovery time	at 100 mA, di/dt = 50 A/µs	t_{fr}	1.0				µs
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	28				pF

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbols	BY396P	BY397P	BY398P	BY399P	Units
Typical thermal resistance (1)	$R_{\theta JA}$	22				°C/W

Notes:

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

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

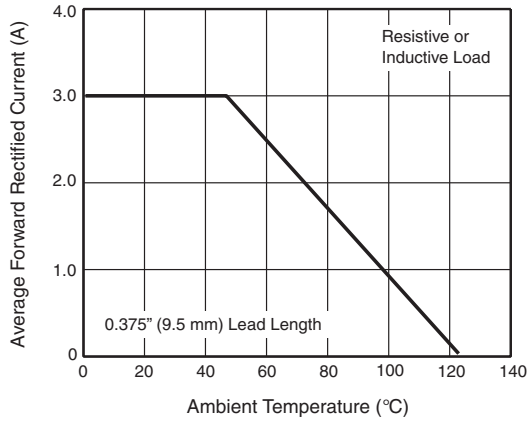


Figure 1. Forward Current Derating Curve

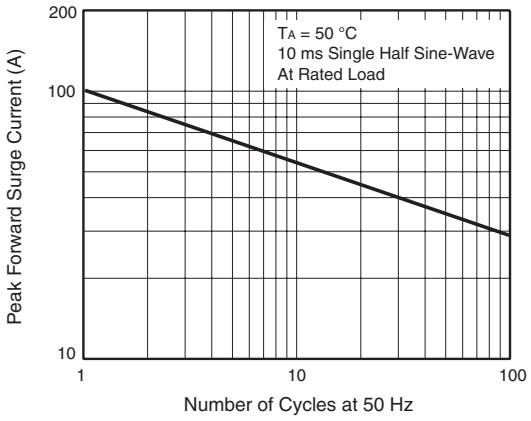


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

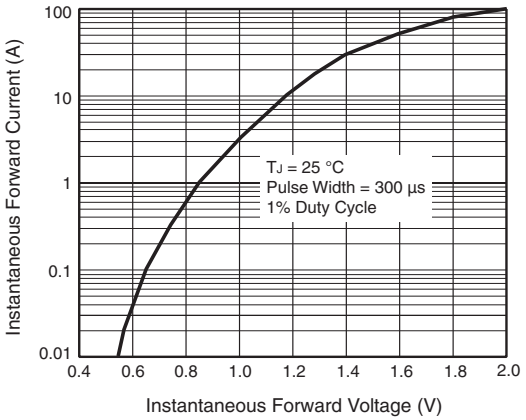


Figure 3. Typical Instantaneous Forward Characteristics

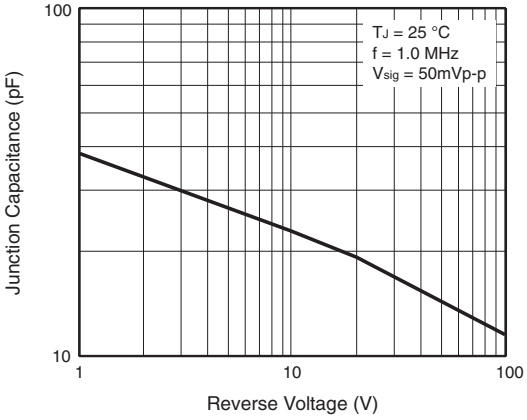


Figure 5. Typical Junction Capacitance

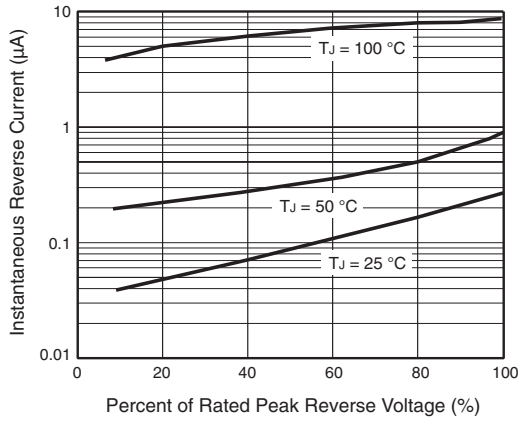
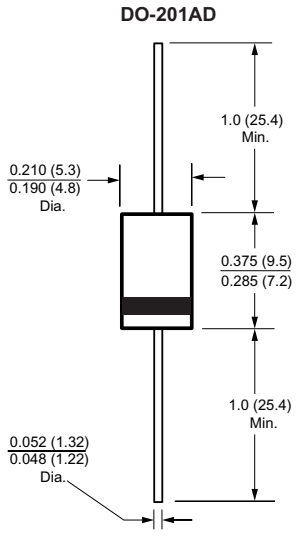


Figure 4. Typical Reverse Characteristics

Package outline dimensions in inches (millimeters)



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