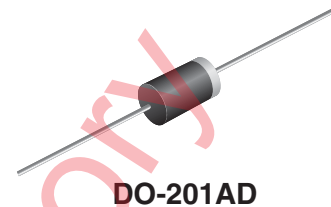


## Soft Recovery Fast-Switching Plastic Rectifier

### 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 $\mu$ A
$V_F$	1.25 V
$T_j$ max.	125 °C



### 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

# BY396P thru BY399P



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## Electrical Characteristics

( $T_A = 25\text{ }^\circ\text{C}$  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	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$		10	500		$\mu\text{A}$
Maximum reverse recovery time	at $I_F = 10\text{ mA}$ , $I_R = 10\text{ mA}$ , $I_{rr} = 1.0\text{ mA}$	$t_{rr}$		500			ns
Maximum forward recovery time	at 100 mA, $di/dt = 50\text{ A}/\mu\text{s}$	$t_{fr}$		1.0			$\mu\text{s}$
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$		28			pF

## Thermal Characteristics

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

Parameter	Symbols	BY396P	BY397P	BY398P	BY399P	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" (9.5mm) lead length with both leads to heat sink

## Ratings and Characteristics Curves

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

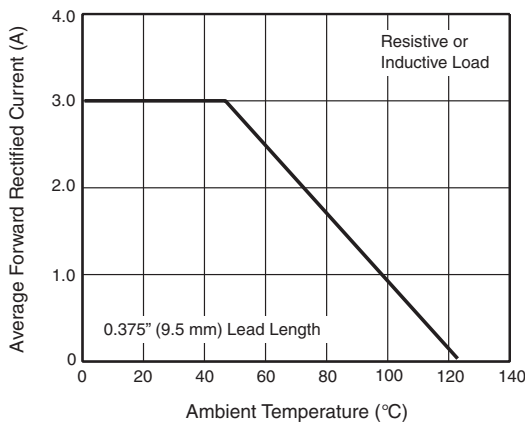


Figure 1. Forward Current Derating Curve

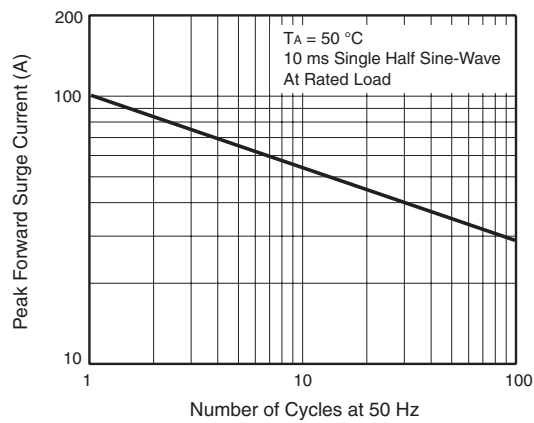


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

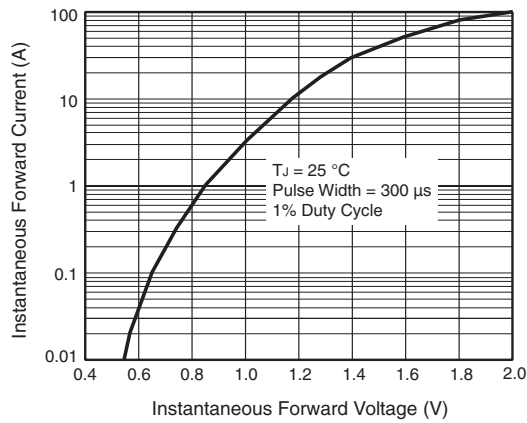


Figure 3. Typical Instantaneous Forward Characteristics

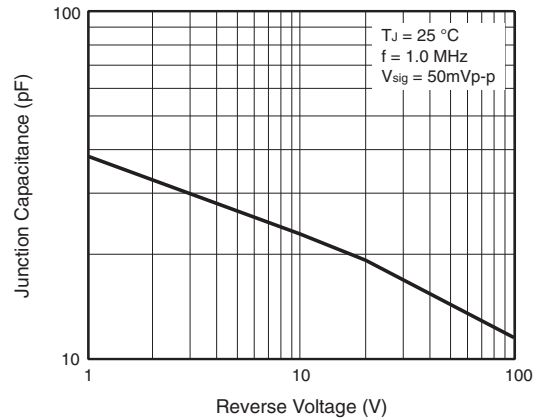


Figure 5. Typical Junction Capacitance

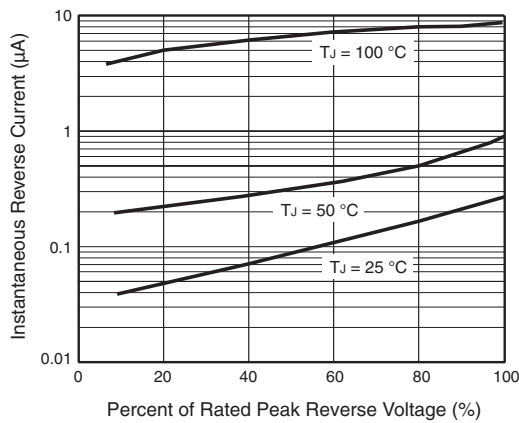
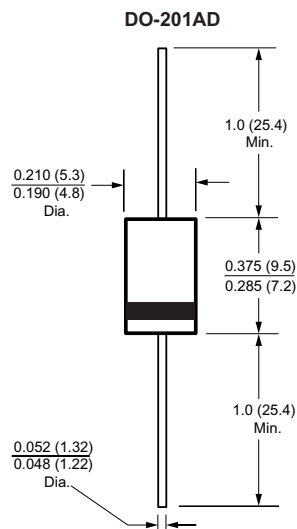


Figure 4. Typical Reverse Characteristics

## Package outline dimensions in inches (millimeters)





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