

## Soft Recovery Fast Switching Plastic Rectifier



DO-201AD

### FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

RoHS  
COMPLIANT

### 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 AEC-Q101 qualified.

### MECHANICAL DATA

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

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	100 V, 200 V, 400 V, 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
Package	DO-201AD
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	BY396P	BY397P	BY398P	BY399P	UNIT
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 CONDITIONS	SYMBOL	BY396P	BY397P	BY398P	BY399P	UNIT
Maximum instantaneous forward voltage	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				$\mu$ A
Maximum reverse recovery time			500				
Maximum forward recovery time	$I_F = 10$ mA, $I_R = 10$ mA, $I_{rr} = 1.0$ mA	$t_{fr}$	1.0				$\mu$ s
Typical junction capacitance	100 mA, $dI/dt = 50$ A/ $\mu$ s	$C_J$	28				pF

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

PARAMETER	SYMBOL	BY396P	BY397P	BY398P	BY399P	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$			22		$^\circ\text{C/W}$

**Note**

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

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BY398P-E3/54	1.1	54	1400	13" diameter paper tape and reel
BY398P-E3/73	1.1	73	1000	Ammo pack packaging

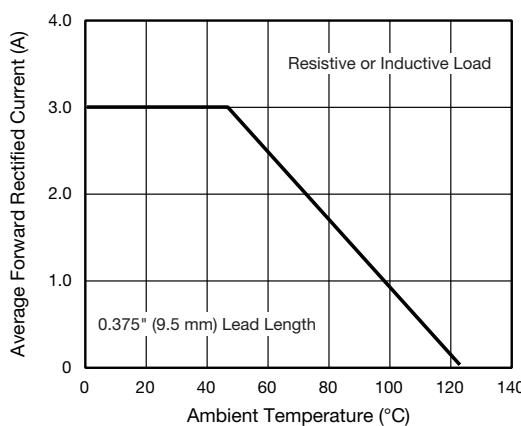
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

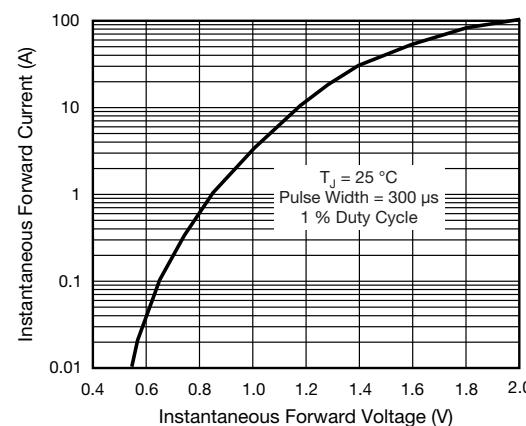


Fig. 3 - Typical Instantaneous Forward Characteristics

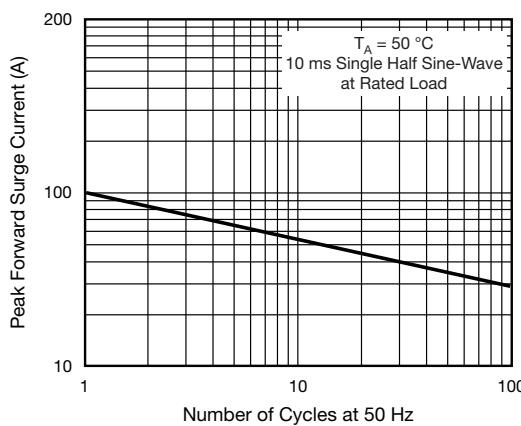


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

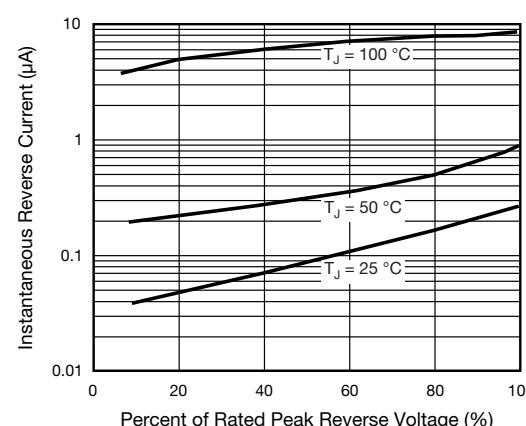


Fig. 4 - Typical Reverse Characteristics

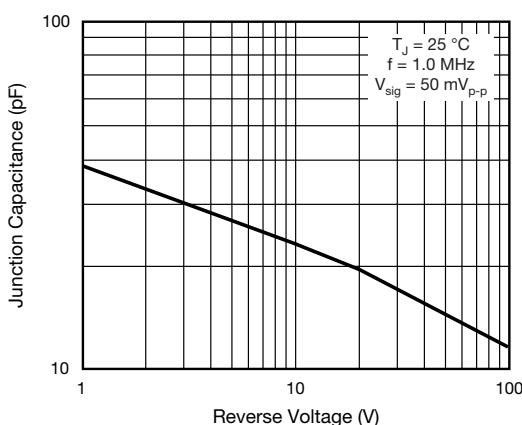
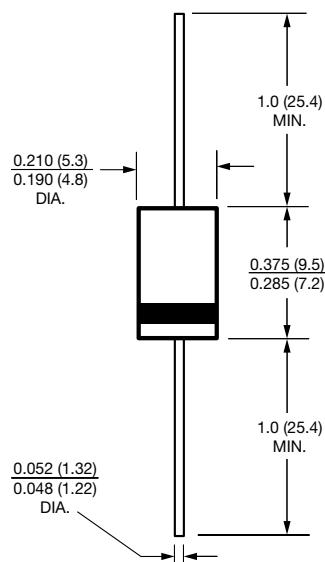


Fig. 5 - Typical Junction Capacitance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

DO-201AD



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