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Vishay Semiconductor/Diodes Division
BY396P-E3/54

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~~Not Available for New Designs, Use RGP30B, RGP30D, RGP30G, RGP30K~~

BY396P, BY397P, BY398P, BY399P

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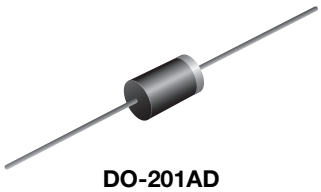
Vishay General Semiconductor

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

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 µA
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	I_R	10				µA
		T_A = 100 °C		500				
Maximum reverse recovery time	I_F = 10 mA, I_R = 10 mA, I_{rr} = 1.0 mA		t_{rr}	500				ns
Maximum forward recovery time	100 mA, dI/dt = 50 A/µs		t_{fr}	1.0				µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	28				pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	BY396P	BY397P	BY398P	BY399P	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	22				°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 °C unless otherwise noted)

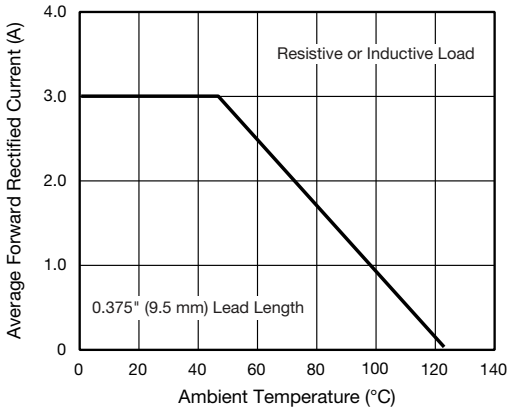


Fig. 1 - Forward Current Derating Curve

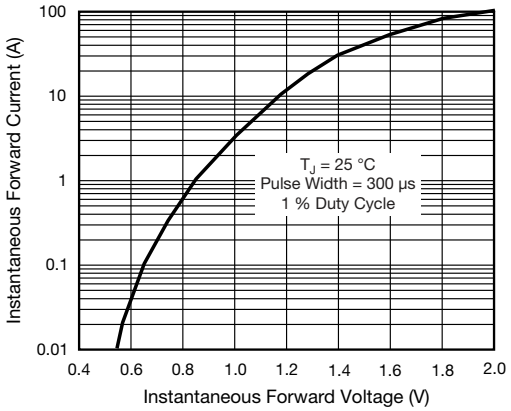


Fig. 3 - Typical Instantaneous Forward Characteristics

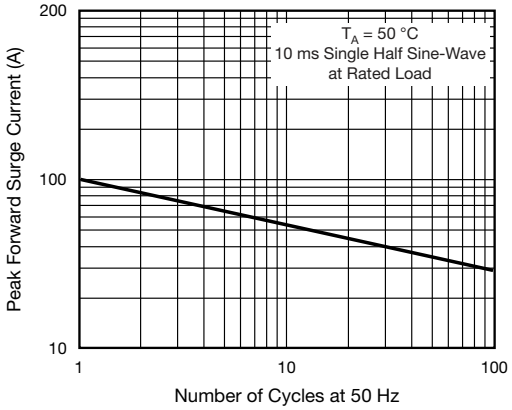


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

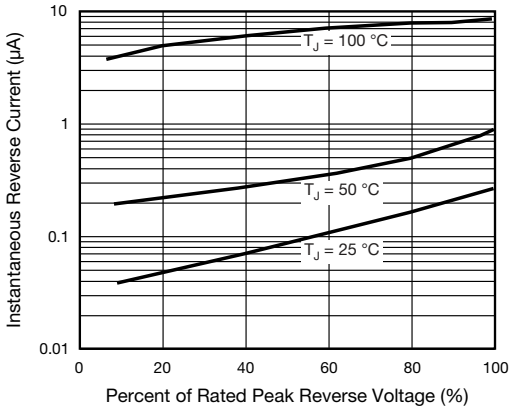


Fig. 4 - Typical Reverse Characteristics

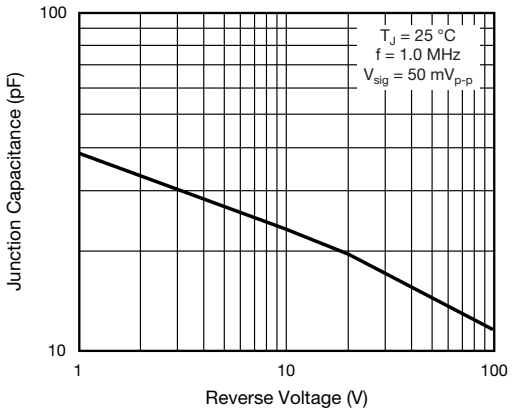
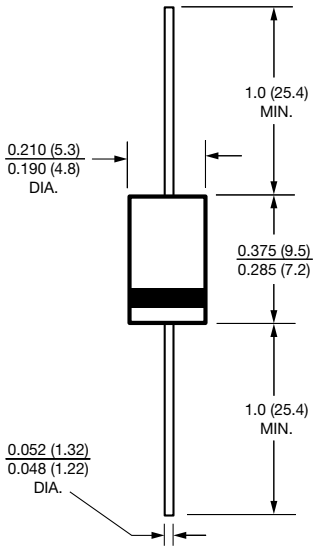


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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