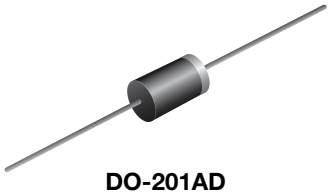
BY500-100, BY500-200, BY500-400, BY500-600, BY500-800

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 medium frequency rectification of switching mode power supplies, inverters, converters, TV sanning, Ultrasonic-system, speed controlled DC motors, low RF interference and freewheeling diode circuit.

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	
$I_{F(AV)}$	5.0 A
V_{RRM}	100 V, 200 V, 400 V, 600 V, 800 V
I_{FSM}	200 A
t_{rr}	200 ns
I_R	10 µA
V_F	1.35 V
T_J max.	125 °C
Package	DO-201AD
Diode variation	Single die

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	UNIT
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 10 ms 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 CONDITIONS**		**SYMBOL**	**BY500-100**	**BY500-200**	**BY500-400**	**BY500-600**	**BY500-800**	**UNIT**
Maximum instantaneous forward voltage	5.0 A		V_F	1.35					V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	10					μA
		T_A = 100 °C		1.0					mA
Maximum reverse recovery time	I_F = 1.0 A, V_R = 30 V, dI/dt = 50 A/μs, I_{rr} = 10 % I_{RM}		t_{rr}	200					ns
Maximum reverse recovery current			$I_{RM(REC)}$	2.0					A
Typical junction capacitance	4.0 V, 1 MHz		C_J	28					pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**SYMBOL**	**BY500-100**	**BY500-200**	**BY500-400**	**BY500-600**	**BY500-800**	**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**
BY500-400-E3/54	1.1	54	1400	13" diameter paper tape and reel
BY500-400-E3/73	1.1	73	1000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

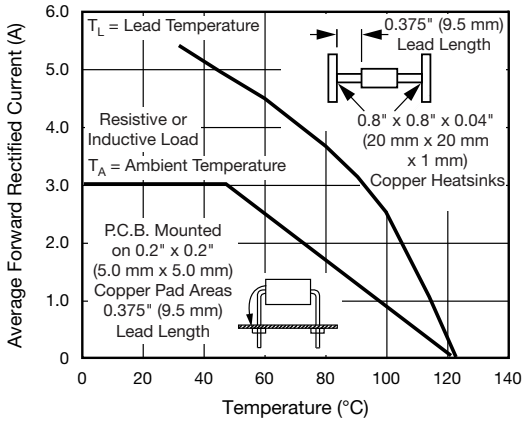


Fig. 1 - Forward Current Derating Curves

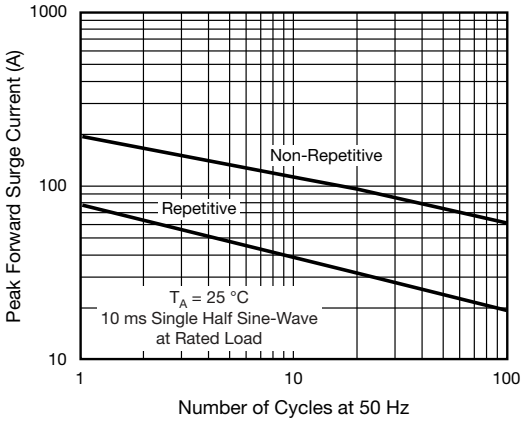


Fig. 2 - Maximum Peak Forward Surge Current

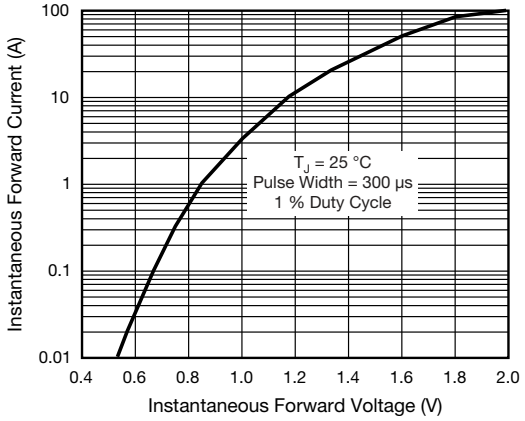


Fig. 3 - Typical Instantaneous Forward Characteristics

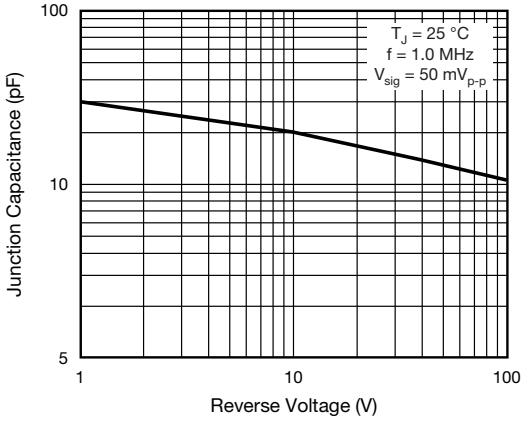


Fig. 5 - Typical Junction Capacitance

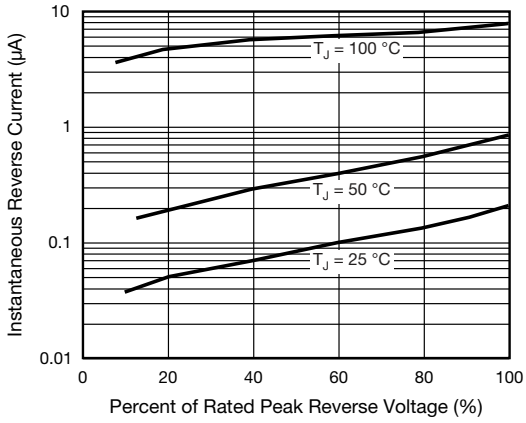
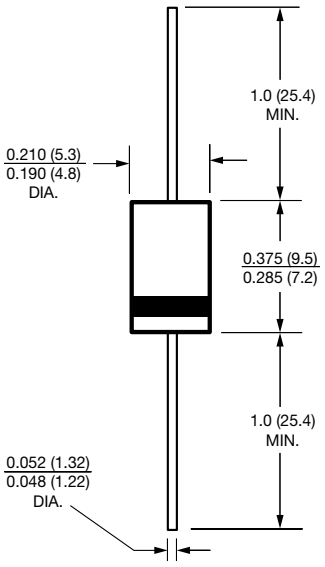


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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