

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 scanning, 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 μ A
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 ($T_A = 25^\circ\text{C}$ 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					
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	I_R	10			μA		
		$T_A = 100^\circ\text{C}$		1.0			mA		
Maximum reverse recovery time	$I_F = 1.0 \text{ A}$, $V_R = 30 \text{ V}$, $dI/dt = 50 \text{ A}/\mu\text{s}$, $I_{rr} = 10\% I_{RM}$	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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	UNIT
Typical thermal resistance	R_{0JA} (1)			22			$^\circ\text{C}/\text{W}$

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

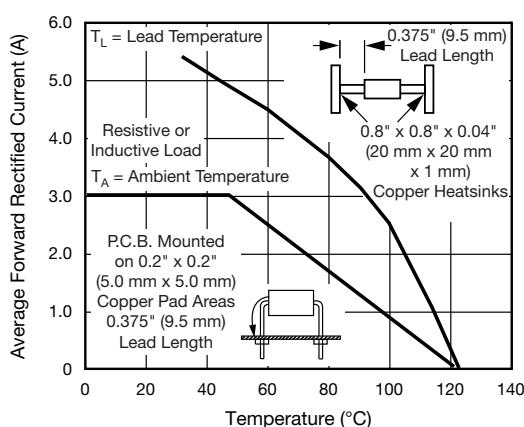
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curves

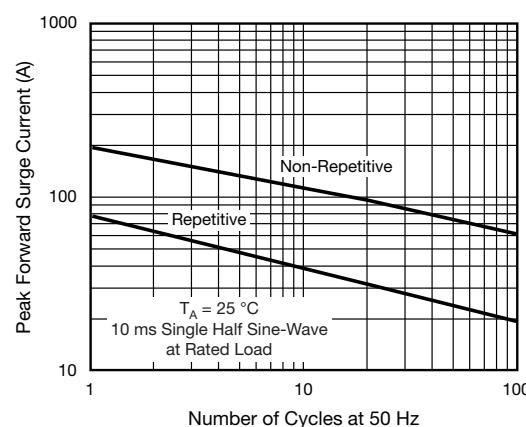
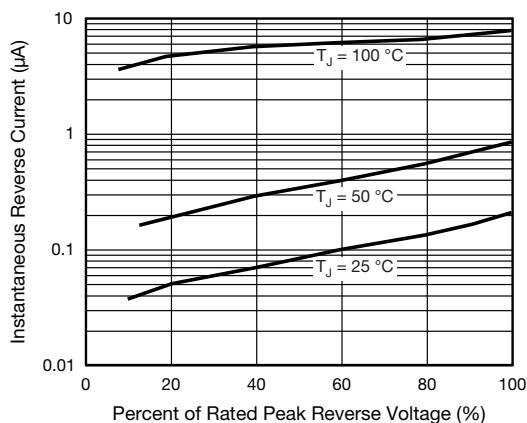
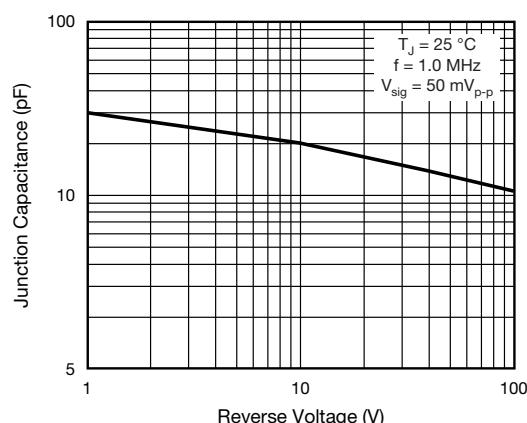
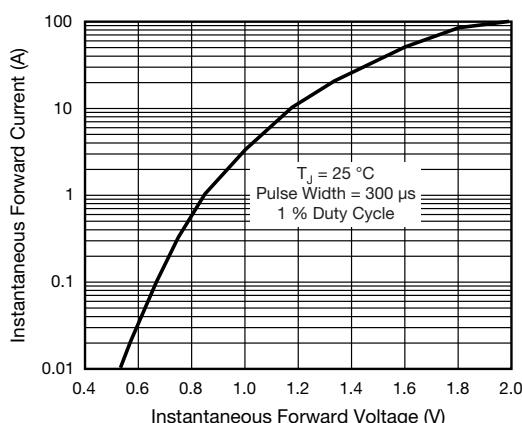
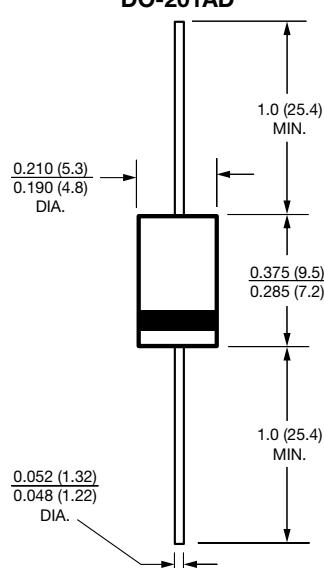


Fig. 2 - Maximum Peak Forward Surge Current


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD


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