



**THE DATASHEET OF  
BY500-200-E3/54**



**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 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

<b>PRIMARY CHARACTERISTICS</b>	
$I_{F(AV)}$	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 $\mu$ A
$V_F$	1.35 V
$T_J$ max.	125 °C
Package	DO-201AD
Diode variation	Single die

<b>MAXIMUM RATINGS</b> ( $T_A = 25$ °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



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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			V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	$I_R$			10			$\mu\text{A}$
	$T_A = 100\text{ }^\circ\text{C}$				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

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	BY500-100	BY500-200	BY500-400	BY500-600	BY500-800	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$			22			$^\circ\text{C}/\text{W}$

**Note**

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

<b>ORDERING INFORMATION</b> (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** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

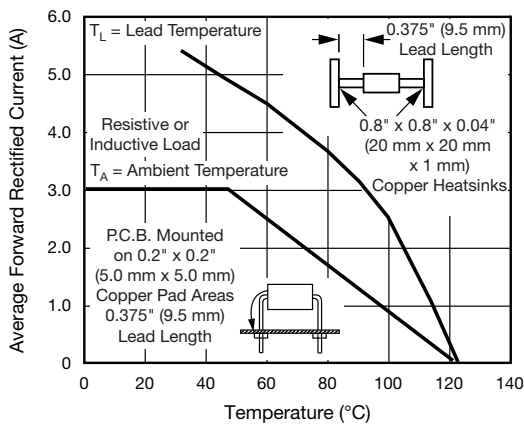


Fig. 1 - Forward Current Derating Curves

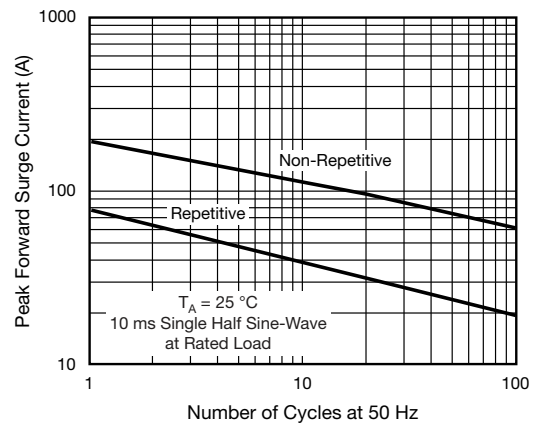


Fig. 2 - Maximum Peak Forward Surge Current

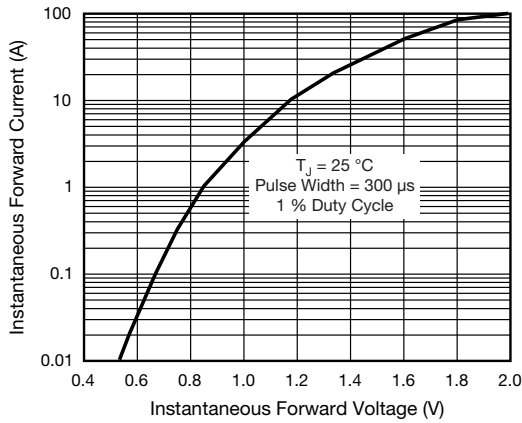


Fig. 3 - Typical Instantaneous Forward Characteristics

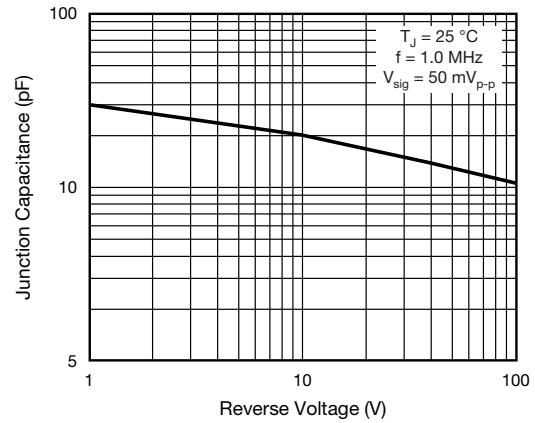


Fig. 5 - Typical Junction Capacitance

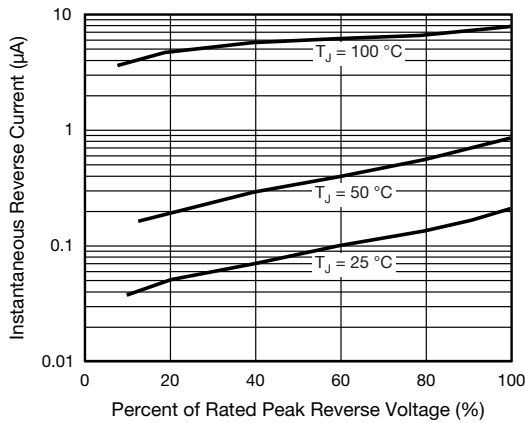
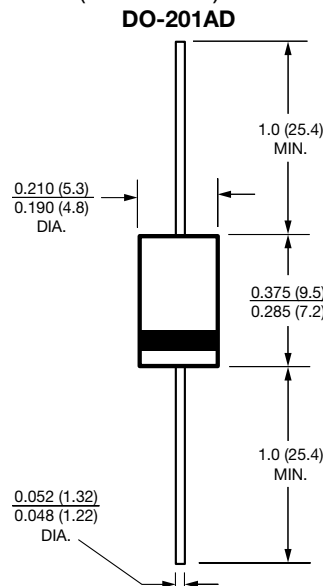


Fig. 4 - Typical Reverse Characteristics

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





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