SYNSEMI SEMICONDUCTOR

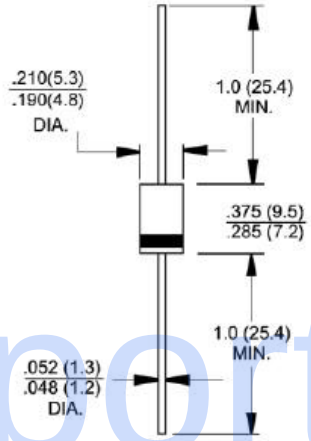
BY500-50 thru BY500-1000

5.0 Amps. Fast Recovery Rectifiers
Voltage Range 50 to 1000 Volts Forward Current 5.0 Amperes

Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High surge current capability
- Fast switching for high efficiency
- High forward current operation at T_L=45°C
- Construction utilizes void-free molded plastic technique
- Especially designed for applications such as switch mode power supplies, inverters, converters, TV scanning, Ultrasonic-systems, speed controlled DC motors, low RF interference and free wheeling diode circuits
- High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

DO-201AD



Dimensions in inches and (millimeters)

Mechanical Data

- Case: JEDEC DO-201AD, molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.042 ounce, 1.195 grams

PDF.Support

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	BY500 -50	BY500 -100	BY500 -200	BY500 -400	BY500 -600	BY500 -800	BY500 -1000	Units
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum average forward rectified current 0.375" (9.5mm) lead length at T_L=45°C	$I_{F(AV)}$	5.0							Amps
Peak forward surge current 10ms single half sine-wave superimposed on rated load at T_A=25°C	I_{FSM}	200.0							Amps
Maximum repetitive peak forward surge	I_{FRM}	10							Amps
Maximum instantaneous forward voltage at 5.0A	V_F	1.35							Volts
Maximum DC reverse current @T_A=25°C at rated DC blocking voltage @T_A=100°C	I_R	10.0 1.0							uA mA
Maximum reverse recovery time (Note 1)	t_{rr}	200							nS
Maximum reverse recovery current at I_F=1.0A, V_R=30V, di/dt=50A/us, I_{rr}=10% I_{RM}	$I_{RM(REC)}$	2.0							Amps
Typical junction capacitance at 4.0V, 1MHz	C_J	28							pF
Typical thermal resistance (Note 1)	$R_{\theta JA}$	22							°C/W
Operating junction temperature range	T_J	-50 to +125							°C
Storage temperature range	T_{STG}	-50 to +150							°C

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

BY500-50 thru BY500-1000

RATINGS AND CHARACTERISTIC CURVES

(T_A = 25°C unless otherwise noted)

FIG.1 - FORWARD CURRENT DERATING CURVE

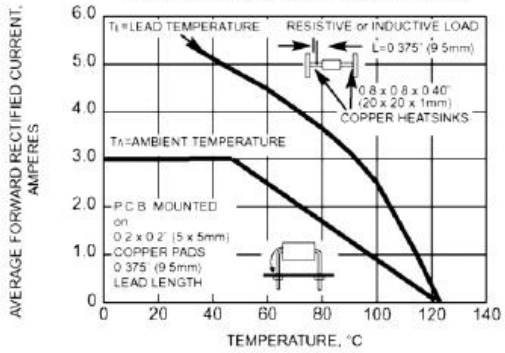


FIG. 2 - MAXIMUM PEAK FORWARD SURGE CURRENT

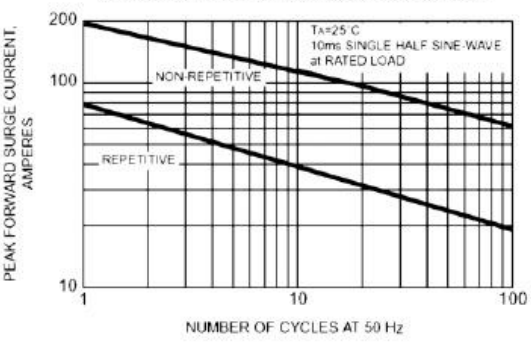


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

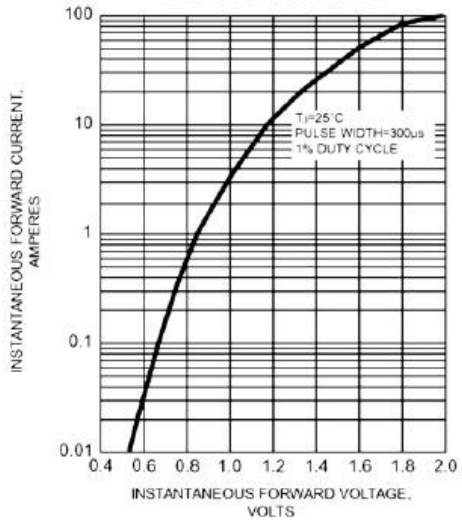


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

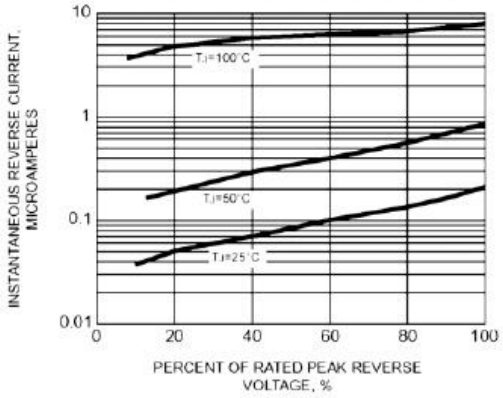


FIG. 5 - TYPICAL JUNCTION CAPACITANCE