Silicon Diode

BY396P

Fast Switching Diode

100V / 3A

DATASHEET

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OEM – General Semiconductor

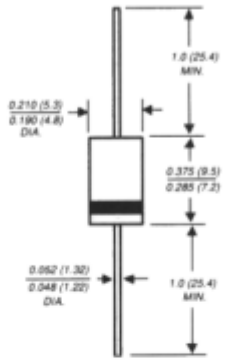
Source: General Semiconductor Databook 1998

BY396P THRU BY399P

SOFT RECOVER FAST - SWITCHING PLASTIC RECTIFIER

***Reverse Voltage** - 100 to 800 Volts* ***Forward Current** - 3.0 Amperes*

DO-201AD



Dimensions in inches and (millimeters)

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- High surge current capability
- Construction utilizes void-free molded plastic technique
- 3.0 Ampere operation at T_A=50°C with no thermal runaway
- Fast switching for high efficiency
- High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

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: 0.04 ounce, 1.1 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	BY396P	BY397P	BY398P	BY399P	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	400	800	Volts
Maximum RMS voltage	V_{RMS}	70	140	280	560	Volts
Maximum DC blocking voltage	V_{DC}	100	200	400	800	Volts
Maximum average forward rectified current 0.375" (9.5mm) lead lengths at T_A=50°C	$I_{(AV)}$	3.0				Amps
Peak forward surge current 10ms single half sine-wave superimposed on rated load at T_A=50°C	I_{FSM}	100.0				Amps
Maximum repetitive peak forward surge (NOTE 1)	I_{FRM}	10.0				Amps
Maximum instantaneous forward voltage at 3.0A	V_F	1.25				Volts
Maximum DC reverse current at rated DC blocking voltage T_A= 25°C / T_A=100°C	I_R	10.0 500.0				µA
Maximum reverse recovery time (NOTE 2)	t_{rr}	500.0				ns
Maximum forward recovery time at 100mA, di/d = 50A/µs	t_{fr}	1.0				µs
Typical junction capacitance (NOTE 3)	C_J	28.0				pF
Typical thermal resistance (NOTE 4)	$R_{\theta JA}$	22.0				°C/W
Operating junction temperature range	T_J	-50 to +125				°C
Storage temperature range	T_{STG}	-50 to +150				°C

NOTES:
(1) Repetitive peak forward surge current at f<15 KHz
(2) Reverse recovery test conditions: I_F=10mA, I_R=10mA, I_{rr}=1.0mA
(3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
(4) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length with both leads to heat sink

RATINGS AND CHARACTERISTIC CURVES BY396P THRU BY399P

FIG. 1 - FORWARD CURRENT DERATING CURVE

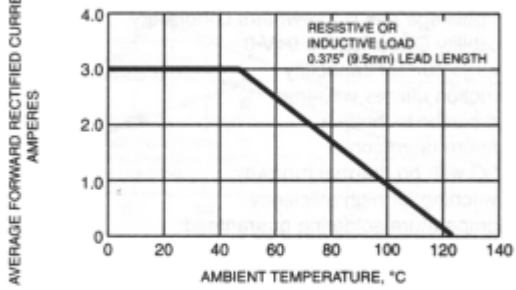


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

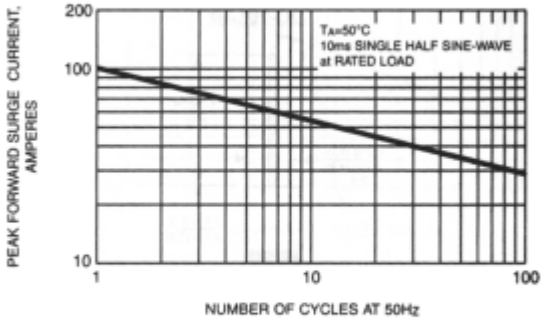


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

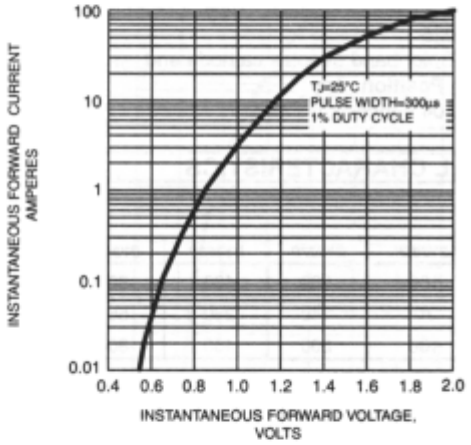


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

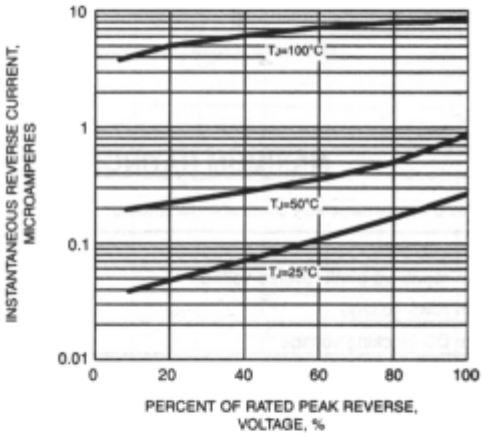


FIG. 5 - TYPICAL JUNCTION CAPACITANCE