

# FR501 THRU FR507

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## FAST RECOVERY RECTIFIERS

Voltage – 50 to 1000 Volts

Current – 5.0 Amperes

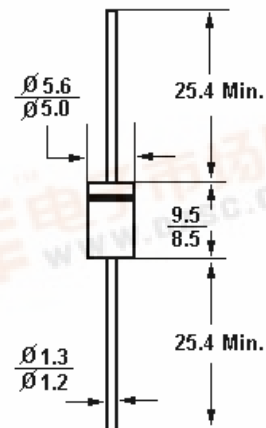
DO-201AD

### Features

- Low forward voltage drop
- Low leakage
- High current capability
- High reliability
- High current surge
- Fast switching

### Mechanical Data

- **Case:** Molded plastic.
- **Lead:** MIL-STD-202E, method 208C guaranteed.
- **Mounting Position:** Any.



Dimensions in mm

### Absolute Maximum Ratings and Characteristics @ 25°C unless otherwise specified.

Single phase half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

	Symbols	FR501	FR502	FR503	FR504	FR505	FR505P	FR506	FR507	FR507 P	Units
Maximum recurrent peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	600	800	1000	1000	Volts
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	420	560	700	700	Volts
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	800	1000	1000	Volts
Maximum Average forward rectified current at T <sub>A</sub> = 75 °C	I <sub>O</sub>	5.0									Amps
Peak forward surge current 8.3ms single half sine-wave, superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	200									Amps
Typical junction capacitance (Note 2)	C <sub>J</sub>	65									pF
Operating and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150									°C
Maximum instantaneous forward voltage At 3.0A DC	V <sub>F</sub>	1.3									Volts
Maximum DC reverse current at rated DC blocking voltage T <sub>A</sub> = 25 °C	I <sub>R</sub>	10									μA
Maximum reverse recovery time (Note 1)	T <sub>rr</sub>	150				250	150	500		250	nS
Maximum full load reverse current average Full cycle 375° (9.5mm) lead length at TL = 55°C	I <sub>R</sub>	150									μA

1) test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = -1\text{A}$ ,  $I_{rr} = -0.25\text{A}$ .

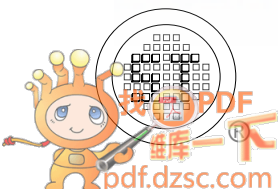
2) Measured at 1MHz and applied reverse voltage of 4 volts.

## SEMTECH ELECTRONICS LTD.

(Subsidiary of Semtech International Holdings Limited, acompany listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 13/12/2003



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FIG.1 - TYPICAL FORWARD CURRENT DERATING CURVE

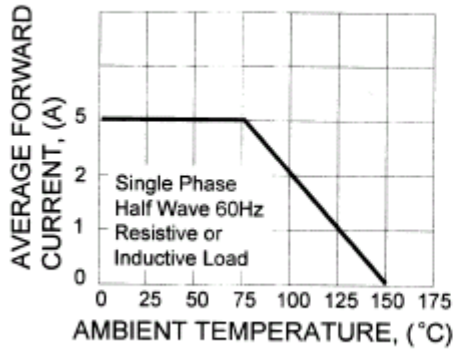


FIG. 2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

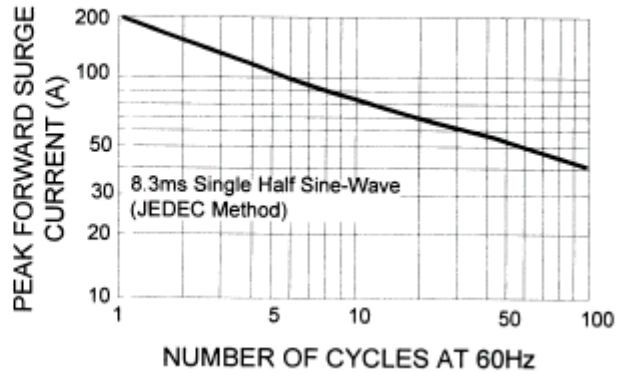


FIG.3 -TYPICAL INSTANTANEOUS

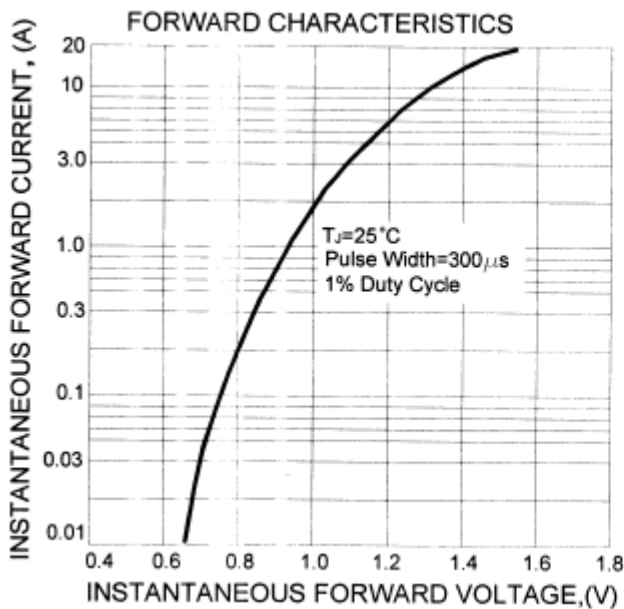


FIG.4- TYPICAL JUNCTION CAPACITANCE

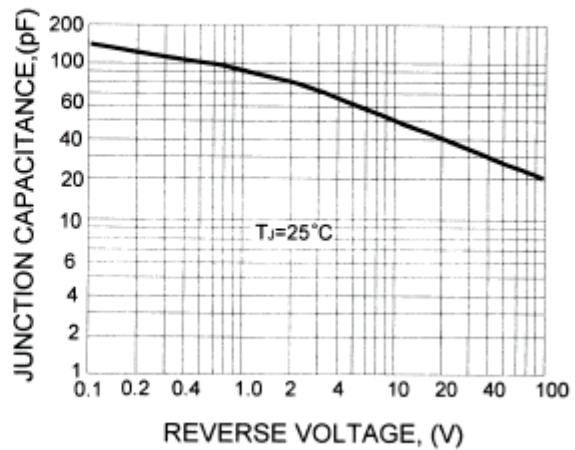
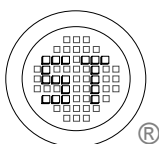
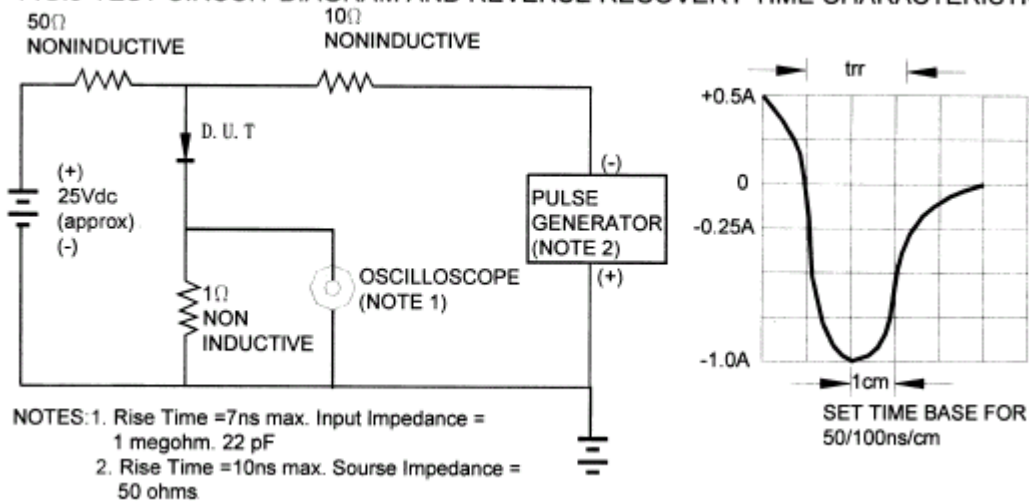
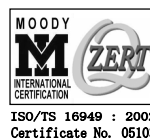


FIG.5-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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