

# FR501 THRU FR507

## FAST RECOVERY RECTIFIERS

Voltage – 50 to 1000 Volts

Current – 5.0 Amperes

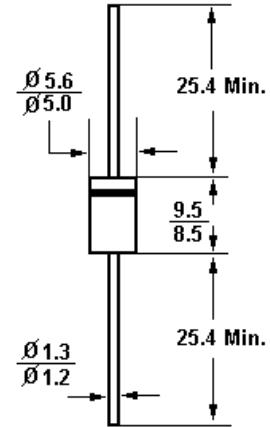
DO-201AD

### 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

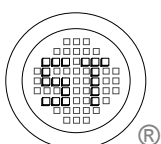
### Absolute Maximum Ratings and Characteristics @ 25°C unless otherwise specified.

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	$V_{RRM}$	50	100	200	400	600	600	800	1000	1000	Volts
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	420	560	700	700	Volts
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	800	1000	1000	Volts
Maximum Average forward rectified current at $T_A = 75^\circ\text{C}$	$I_O$	5.0									Amps
Peak forward surge current 8.3ms single half sine-wave, superimposed on rated load (JEDEC method)	$I_{FSM}$	200									Amps
Typical junction capacitance (Note 2)	$C_J$	65									pF
Operating and storage temperature range	$T_J, T_{STG}$	-65 to +150									°C
Maximum instantaneous forward voltage At 3.0A DC	$V_F$	1.3									Volts
Maximum DC reverse current at rated DC blocking voltage $T_A = 25^\circ\text{C}$	$I_R$	10									μA
Maximum reverse recovery time (Note 1)	$T_{rr}$	150			250		150	500		250	nS
Maximum full load reverse current average Full cycle 375° (9.5mm) lead length at TL = 55°C	$I_R$	150									μA

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

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



**SEMTECH ELECTRONICS LTD.**

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



ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001  
Certificate No. 7116



ISO 9001 : 2000  
Certificate No. 558-198-02-04

Dated : 13/12/2003

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FIG.1 - TYPICAL FORWARD CURRENT DERATING CURVE

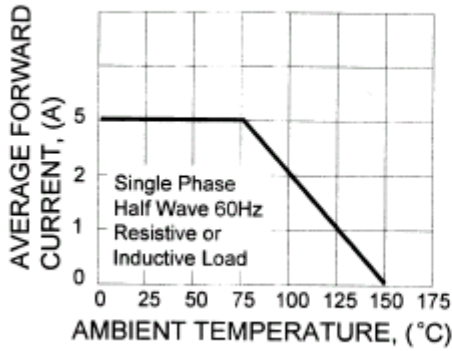


FIG. 2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

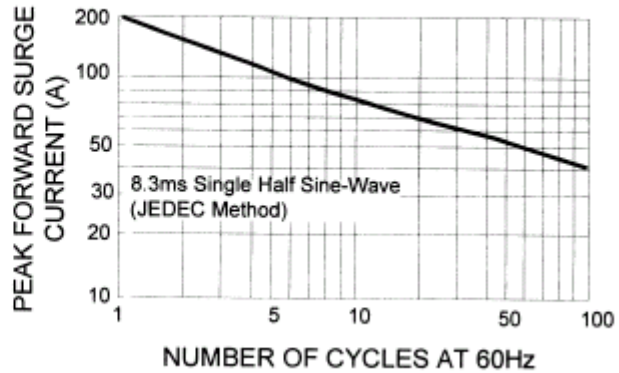


FIG.3 -TYPICAL INSTANTANEOUS

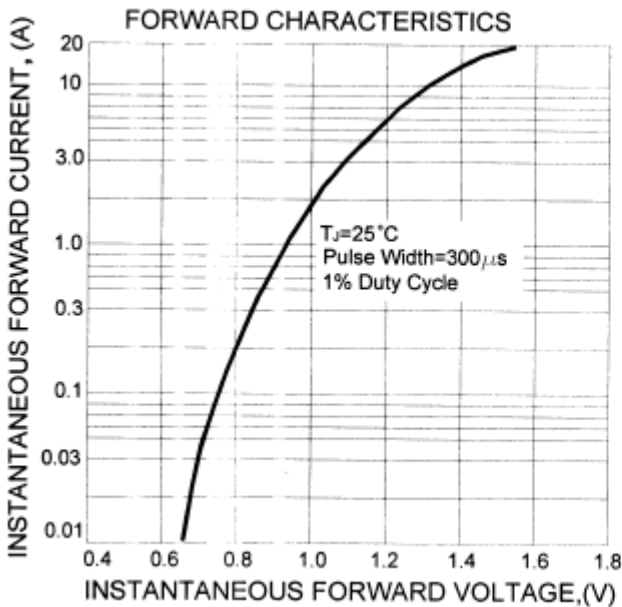


FIG.4- TYPICAL JUNCTION CAPACITANCE

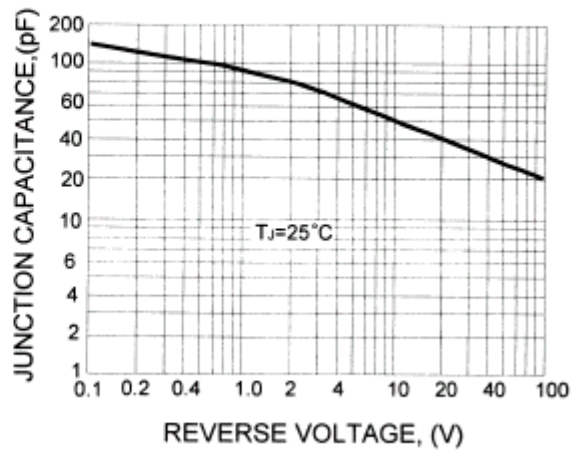
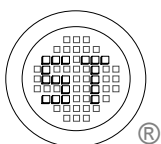
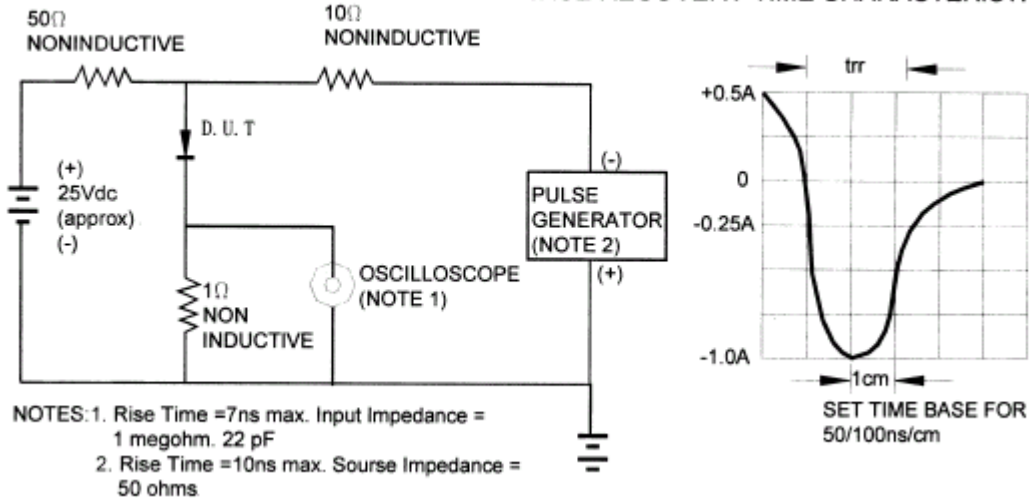
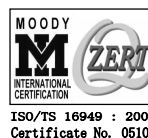


FIG.5-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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