



# FR301 thru FR307

Fast Recovery Rectifiers  
Reverse Voltage 50 to 1000 Volts Forward Current 3.0 Amperes

## Features

- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High reliability
- ◆ High surge current capability
- ◆  $T_J$  is 150°C (Max.) and  $T_{STG}$  is 175°C (Max.) with PI glue



DO-201AD

## Mechanical Data

- ◆ Case: Molded plastic DO-201AD
- ◆ Epoxy: UL 94V-O rate flame retardant
- ◆ Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- ◆ Polarity: Color band denotes cathode end
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds .375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ◆ Weight: 0.042 ounce, 1.195 grams



## Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Parameter	Symbols	FR301	FR302	FR303	FR304	FR305	FR306	FR307	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 $T_A=55^\circ\text{C}$	$I_{(AV)}$	3.0							Amps
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150.0							Amps
Maximum instantaneous forward voltage @ 3.0A	$V_F$	1.3							Volts
Maximum DC reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	10.0 150							$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_{rr}$	150				250	500		nS
Typical junction capacitance (Note 2)	$C_J$	55							pF
Operating temperature range	$T_J$	-55 to +125							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150							$^\circ\text{C}$

- Notes:**
1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

# RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

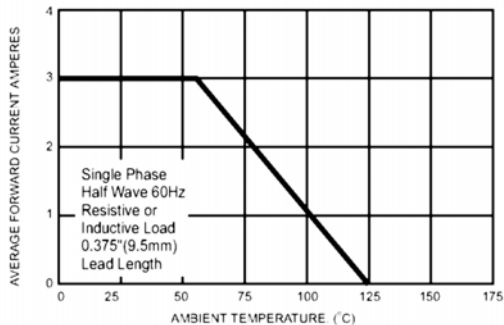


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

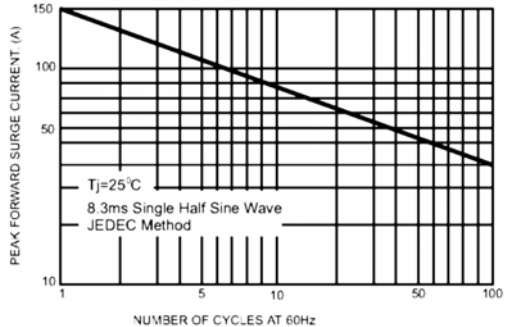


FIG.3- TYPICAL FORWARD CHARACTERISTICS

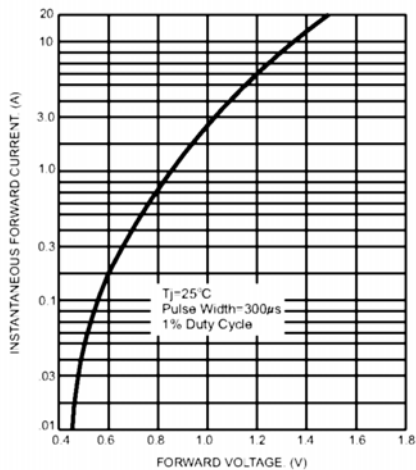


FIG.4- TYPICAL JUNCTION CAPACITANCE

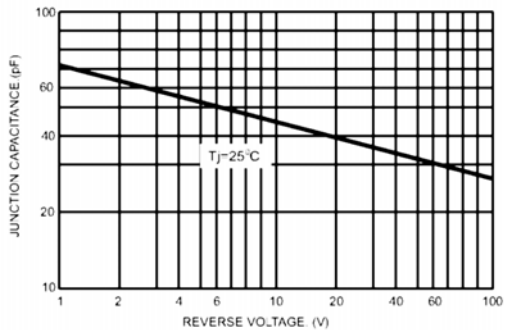
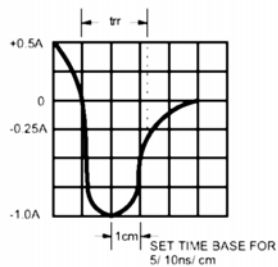
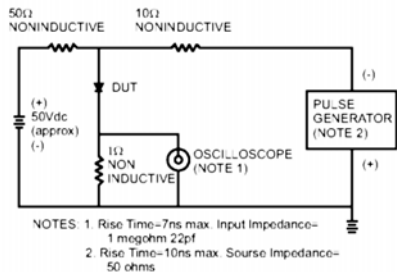


FIG.5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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