



# FR301 THRU FR307

## FAST RECOVERY RECTIFIER

**REVERSE VOLTAGE:** 50 to 1000 VOLTS

**FORWARD CURRENT:** 3.0 AMPERE

### FEATURES

- High surge current capability
- Void-free Plastic in a DO-201AD package.
- Fast switching for high efficiency
- Low leakage.
- Suffix "H" indicates Halogen-free parts, ex. FR301H.

### MECHANICAL DATA

Case : Molded plastic, DO-201AD

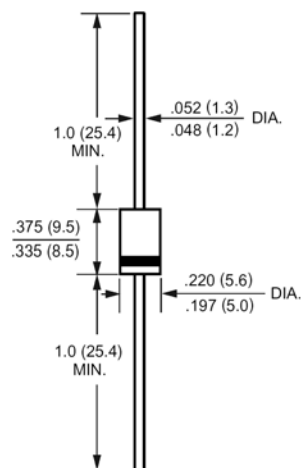
Epoxy : UL 94V-O rate flame retardant

Lead : Axial leads, solderable per MIL-STD-202,  
method 208 guaranteed

Polarity : Color band denotes cathode end

Mounting position : Any

### DO-201AD



Dimensions in inches and (millimeters)

### 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 Recurrent 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 .375"(9.5mm) Lead Length	$I_{(AV)}$	3.0							Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	200.0							Amp
Maximum Forward Voltage at 3.0A DC and 25°C	$V_F$	1.3							Volts
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	$I_R$	5.0 100							uAmp
Typical Junction Capacitance (Note 1)	$C_J$	60							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	40.0							°C/W
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	150			250		500		nS
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +150							°C

#### NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal Resistance Junction to Ambient and from junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted with 0.8x0.8" (20x20mm) copper pads

3- Reverse Recovery Test Conditions:  $I_F=5A$ ,  $I_R=1A$ ,  $I_{RR}=25A$ .



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### RATINGS AND CHARACTERISTIC CURVES

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

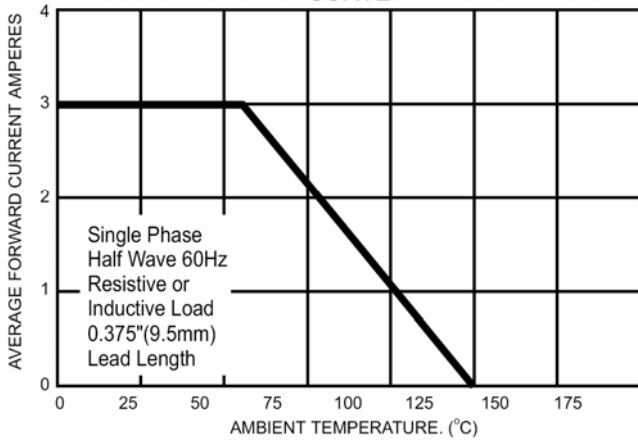


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

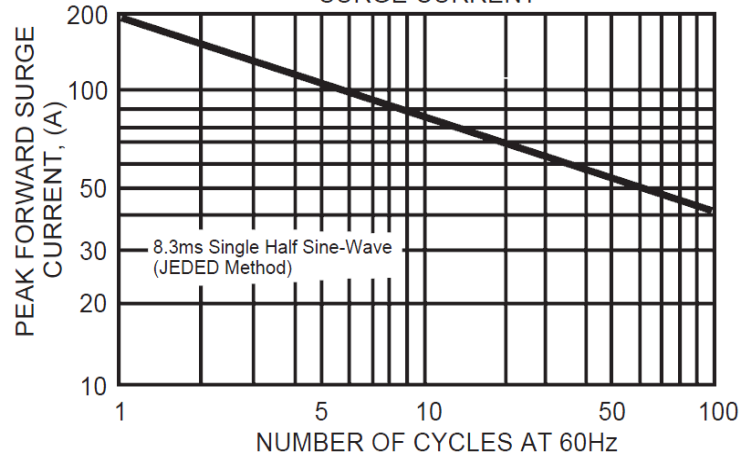


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

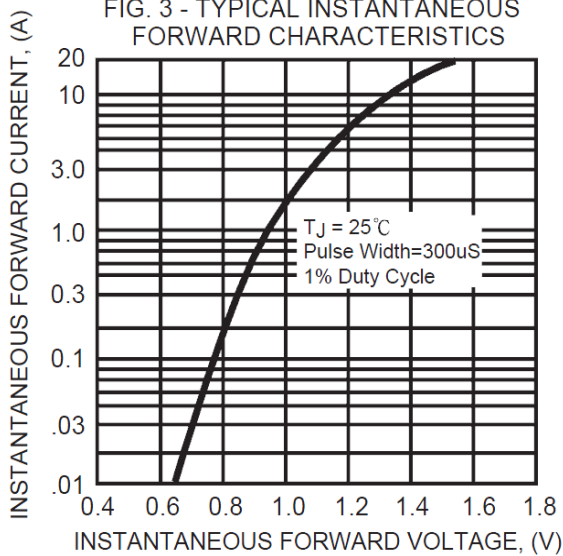


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

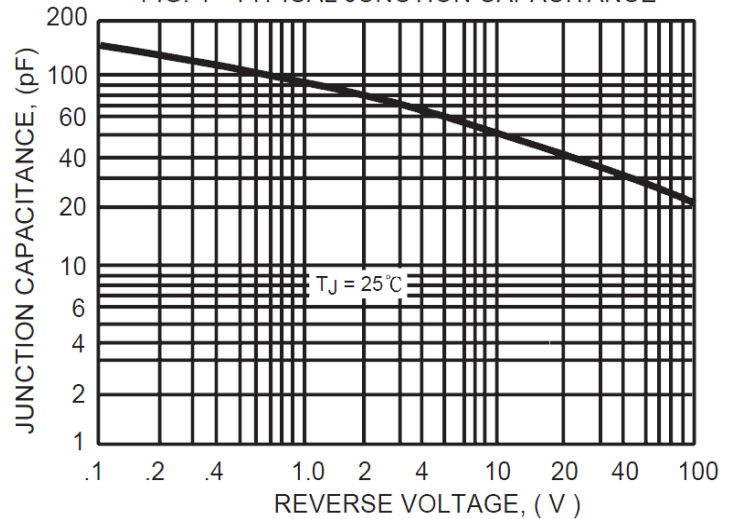
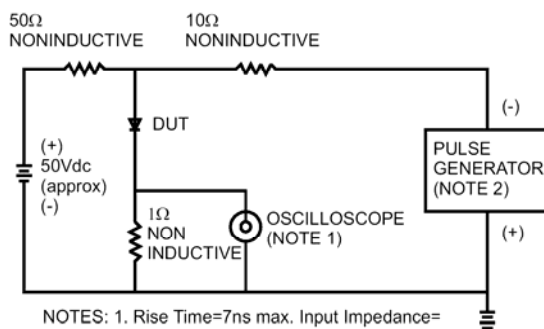


FIG. 5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



- NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms

