



# FR301 THRU FR307

## 3.0 AMPS. Fast Recovery Rectifiers



Voltage Range  
50 to 1000 Volts  
Current  
3.0 Amperes

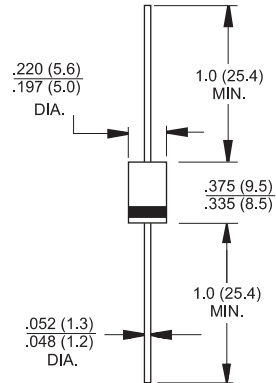
### Features

- ✧ Low forward voltage drop
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability

### Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Axial leads, solderable per MIL-STD- 202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode end
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 1.2 grams

### DO-201AD



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

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

For capacitive load, derate current by 20%

| Type Number                                                                                            | Symbol            | FR 301      | FR 302 | FR 303 | FR 304 | FR 305 | FR 306 | FR 307 | Units    |
|--------------------------------------------------------------------------------------------------------|-------------------|-------------|--------|--------|--------|--------|--------|--------|----------|
| Maximum Recurrent Peak Reverse Voltage                                                                 | V <sub>RRM</sub>  | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V        |
| Maximum RMS Voltage                                                                                    | V <sub>RMS</sub>  | 35          | 70     | 140    | 280    | 420    | 560    | 700    | V        |
| Maximum DC Blocking Voltage                                                                            | V <sub>DC</sub>   | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V        |
| Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length @T <sub>A</sub> = 55°C              | I <sub>(AV)</sub> | 3.0         |        |        |        |        |        |        | A        |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )    | I <sub>FSM</sub>  | 150         |        |        |        |        |        |        | A        |
| Maximum Instantaneous Forward Voltage @ 3.0A                                                           | V <sub>F</sub>    | 1.2         |        |        |        |        |        |        | V        |
| Maximum DC Reverse Current @ T <sub>A</sub> =25°C at Rated DC Blocking Voltage @ T <sub>A</sub> =100°C | I <sub>R</sub>    | 5<br>100    |        |        |        |        |        |        | uA<br>uA |
| Maximum Reverse Recovery Time ( Note 1 )                                                               | T <sub>rr</sub>   | 150         |        |        |        | 250    | 500    |        | nS       |
| Typical Junction Capacitance ( Note 2 )                                                                | C <sub>j</sub>    | 60          |        |        |        |        |        |        | pF       |
| Typical Thermal Resistance (Note 3)                                                                    | Rθ <sub>JA</sub>  | 40          |        |        |        |        |        |        | °C/W     |
| Operating Temperature Range                                                                            | T <sub>J</sub>    | -65 to +150 |        |        |        |        |        |        | °C       |
| Storage Temperature Range                                                                              | T <sub>STG</sub>  | -65 to +150 |        |        |        |        |        |        | °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 Volts D.C.

3. Mount on Cu-Pad Size 16mm x 16mm on P.C.B.

## RATINGS AND CHARACTERISTIC CURVES (FR301 THRU FR307)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

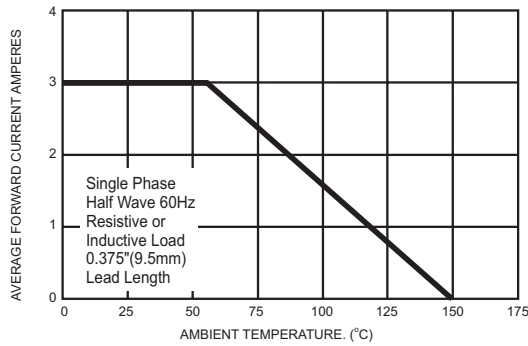


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

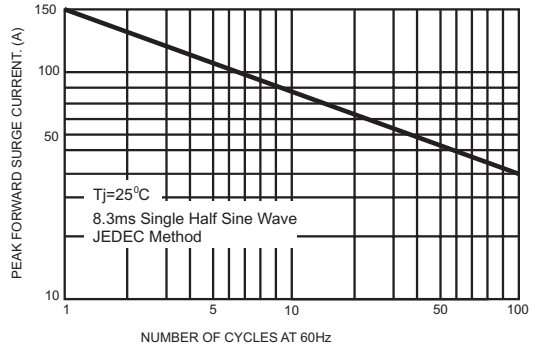


FIG.3- TYPICAL FORWARD CHARACTERISTICS

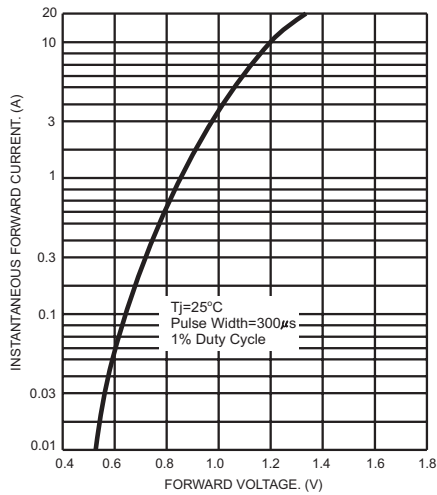


FIG.4- TYPICAL JUNCTION CAPACITANCE

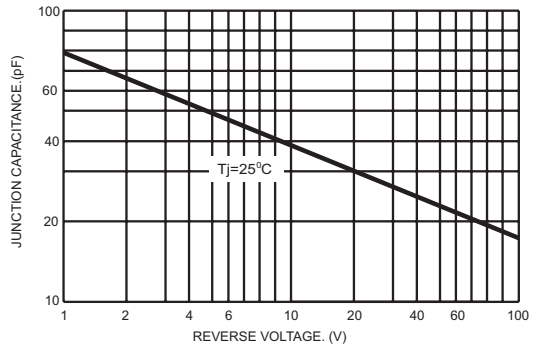


FIG.5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

