

**FAST RECOVERY GLASS PASSIVATED RECTIFIER**

**VOLTAGE RANGE 50 to 1000 Volts CURRENT 3.0 Amperes**

**FEATURES**

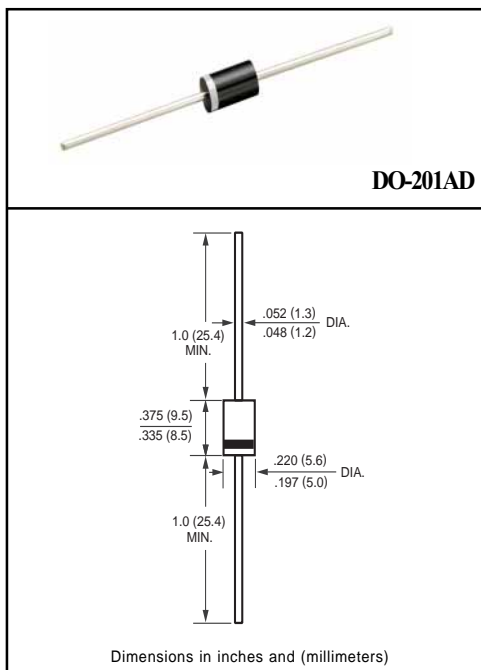
- \* High reliability
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* Glass passivated junction
- \* High switching capability

**MECHANICAL DATA**

- \* Case: Molded plastic
- \* Epoxy: Device has UL flammability classification 94V-0
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 1.18 grams

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings 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%.



**MAXIMUM RATINGS** (At TA = 25°C unless otherwise noted)

| RATINGS   | SYMBOL                            | FR301G | FR302G | FR303G | FR304G       | FR305G | FR306G | FR307G | UNITS |
|---|-----------------------------------|--------|--------|--------|--------------|--------|--------|--------|-------|
| Maximum Recurrent Peak Reverse Voltage  | V <sub>RRM</sub>                  | 50     | 100    | 200    | 400          | 600    | 800    | 1000   | Volts |
| Maximum RMS Voltage   | V <sub>RMS</sub>                  | 35     | 70     | 140    | 280          | 420    | 560    | 700    | Volts |
| Maximum DC Blocking Voltage   | V <sub>DC</sub>                   | 50     | 100    | 200    | 400          | 600    | 800    | 1000   | Volts |
| Maximum Average Forward Rectified Current at TA = 55°C  | I <sub>O</sub>                    |        |        |        | 3.0          |        |        |        | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>                  |        |        |        | 125          |        |        |        | Amps  |
| Typical Junction Capacitance (Note 2)   | C <sub>J</sub>                    |        |        |        | 50           |        |        |        | pF    |
| Operating and Storage Temperature Range   | T <sub>J</sub> , T <sub>STG</sub> |        |        |        | -65 to + 150 |        |        |        | °C    |

**ELECTRICAL CHARACTERISTICS** (At TA = 25°C unless otherwise noted)

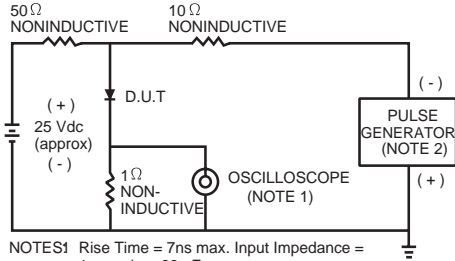
| CHARACTERISTICS  | SYMBOL          | FR301G | FR302G | FR303G | FR304G | FR305G | FR306G | FR307G | UNITS |
|--|-----------------|--------|--------|--------|--------|--------|--------|--------|-------|
| Maximum Instantaneous Forward Voltage at 3.0A DC   | V <sub>F</sub>  |        |        |        | 1.3    |        |        |        | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C                            | I <sub>R</sub>  |        |        |        | 5.0    |        |        |        | uAmps |
| Maximum Full Load Reverse Current Average, Full Cycle .375" (9.5mm) lead length at TL = 55°C |                 |        |        |        | 100    |        |        |        | uAmps |
| Maximum Reverse Recovery Time (Note 1)   | t <sub>rr</sub> |        |        |        | 150    | 250    | 500    |        | nSec  |

NOTES : 1. Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = -1.0A, I<sub>RR</sub> = -0.25A  
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

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# RATING AND CHARACTERISTIC CURVES ( FR301G THRU FR307G )

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

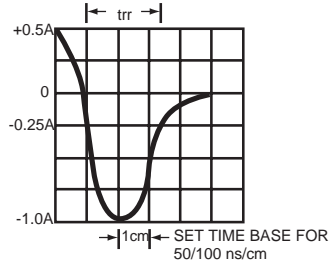


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

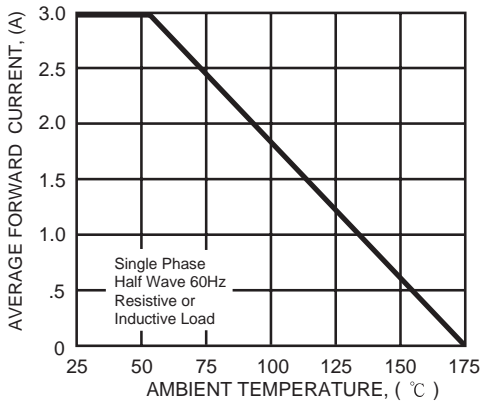


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

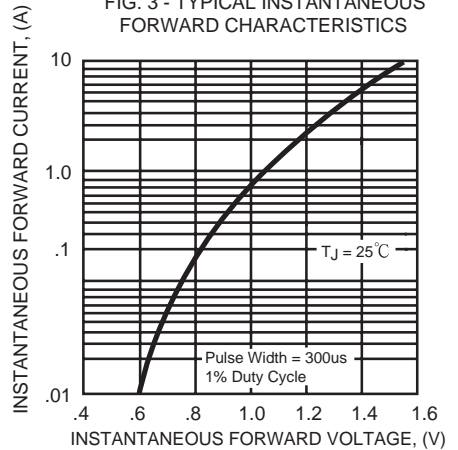


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

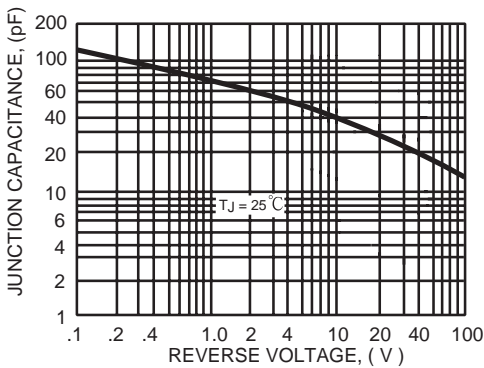


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

