



Certificate Number: Q10561



Certificate Number: E17276

# FR301G - FR307G-STR GLASS PASSIVATED JUNCTION FAST RECOVERY RECTIFIERS

**PRV : 50 - 1000 Volts**  
**Io : 3.0 Amperes**

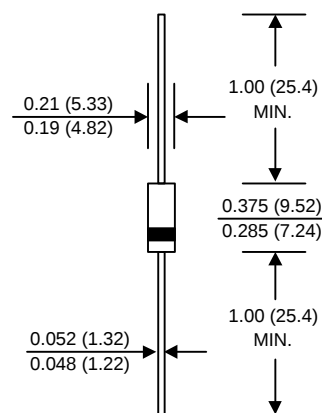
## FEATURES :

- \* Glass passivated chip
- \* High current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop
- \* Fast switching for high efficiency

## MECHANICAL DATA :

- \* Case : DO-201AD Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 1.21 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%.

| RATING                                                                                                  | SYMBOL             | FR301G        | FR302G | FR303G | FR304G | FR305G | FR306G | FR307G | FR307G-STR | UNIT  |
|---------------------------------------------------------------------------------------------------------|--------------------|---------------|--------|--------|--------|--------|--------|--------|------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                  | V <sub>RRM</sub>   | 50            | 100    | 200    | 400    | 600    | 800    | 1000   | 1000       | Volts |
| Maximum RMS Voltage                                                                                     | V <sub>RMS</sub>   | 35            | 70     | 140    | 280    | 420    | 560    | 700    | 700        | Volts |
| Maximum DC Blocking Voltage                                                                             | V <sub>DC</sub>    | 50            | 100    | 200    | 400    | 600    | 800    | 1000   | 1000       | Volts |
| Maximum Average Forward Current<br>0.375"(9.5mm) Lead Length      Ta = 55 °C                            | I <sub>F(AV)</sub> | 3.0           |        |        |        |        |        |        |            | Amps. |
| Peak Forward Surge Current,<br>8.3ms Single half sine wave superimposed<br>on rated load (JEDEC Method) | I <sub>FSM</sub>   | 100           |        |        |        |        |        |        |            | Amps. |
| Maximum Peak Forward Voltage at I <sub>F</sub> = 3.0 Amps.                                              | V <sub>F</sub>     | 1.3           |        |        |        |        |        |        |            | Volts |
| Maximum DC Reverse Current      Ta = 25 °C<br>at Rated DC Blocking Voltage      Ta = 100 °C             | I <sub>R</sub>     | 5             |        |        |        |        |        |        |            | μA    |
|                                                                                                         | I <sub>R(H)</sub>  | 100           |        |        |        |        |        |        |            | μA    |
| Maximum Reverse Recovery Time ( Note 1 )                                                                | T <sub>rr</sub>    | 150           |        |        |        | 250    | 500    |        | 250        | ns    |
| Typical Junction Capacitance ( Note 2 )                                                                 | C <sub>J</sub>     | 60            |        |        |        |        |        |        |            | pf    |
| Junction 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<sub>F</sub> = 0.5 A, I<sub>R</sub> = 1.0 A, I<sub>rr</sub> = 0.25 A.
- ( 2 ) Measured at 1.0 MHz and applied reverse voltage of 4.0 V<sub>dc</sub>

UPDATE : JUNE 17, 1998

## RATING AND CHARACTERISTIC CURVES ( FR301G - FR307G-STR )

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

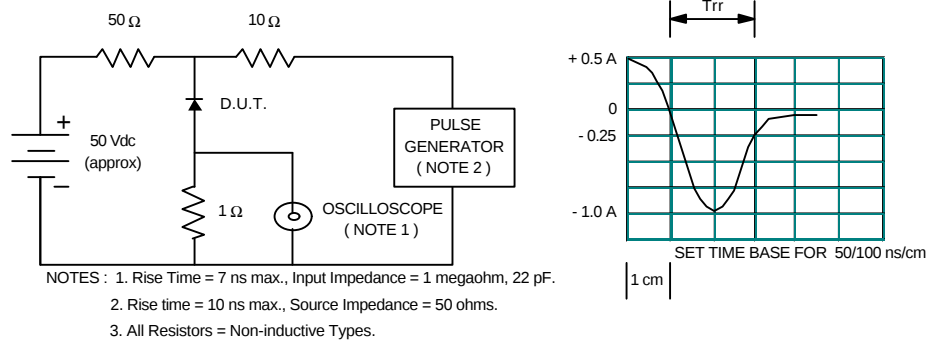


FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

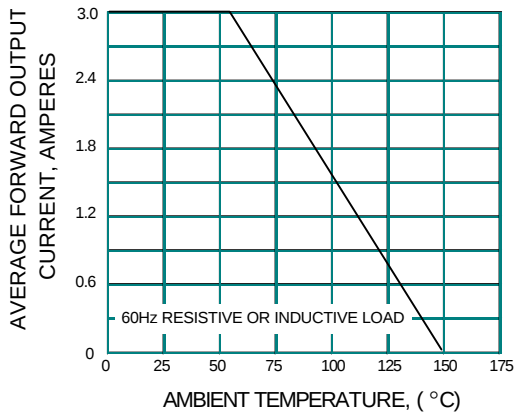


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

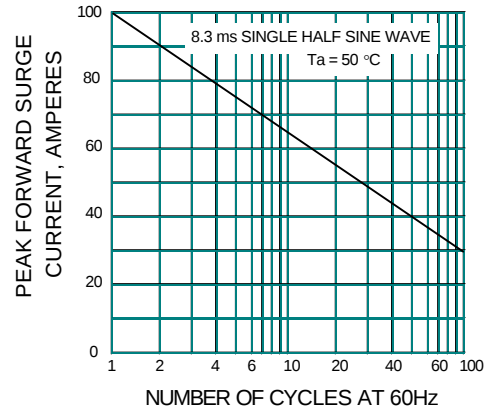


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

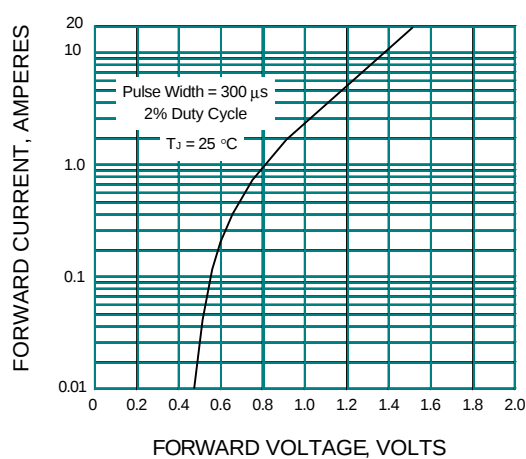


FIG.5 - TYPICAL REVERSE CHARACTERISTICS

