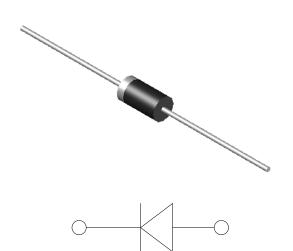
# FR301G THRU FR307G



# **Fast Recovery Rectifier**

#### Features

- High efficiency
- High current capability
- High reliability
- High surge current capability
- Low power loss
- Glass passivated chip junction
- Solder dip 275 °C max. 7 s, per JESD 22-B106

### **Mechanical Data**

• Package: DO-201AD(DO-27)

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant

- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity:Color band denotes cathode end

## ■Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER   | SYMBOL           | UNIT | FR301G    | FR302G | FR303G | FR304G | FR305G | FR306G | FR307G |
|---|------------------|------|-----------|--------|--------|--------|--------|--------|--------|
| Device marking code   |                  |      | FR301G    | FR302G | FR303G | FR304G | FR305G | FR306G | FR307G |
| Repetitive Peak Reverse Voltage   | V <sub>RRM</sub> | V    | 50        | 100    | 200    | 400    | 600    | 800    | 1000   |
| Average Forward Current @60Hz sine wave, Resistance load, Ta=50 $^\circ\mathbb{C}$      | IF(AV)           | А    | 3.0       |        |        |        |        |        |        |
| Forward Surge Current(Non-repetitive) @60Hz Half-sine wave, 1 cycle, Ta= $25^{\circ}$ C | I <sub>FSM</sub> | А    | 125       |        |        |        |        |        |        |
| Storage Temperature   | T <sub>stg</sub> | °C   | -55 ~+150 |        |        |        |        |        |        |
| Junction Temperature  | Тј               | °C   | -55~+150  |        |        |        |        |        |        |

## ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER  | SYMBOL                                  | UNIT | TEST CONDITIONS   | FR301G      | FR302G | FR303G | FR304G | FR305G | FR306G | FR307G |
|--|---|------|---|-------------|--------|--------|--------|--------|--------|--------|
| Maximum instantaneous forward voltage drop per diode | V <sub>FM</sub>                         | V    | I <sub>FM</sub> =3.0A   | 1.3         |        |        |        |        |        |        |
| Maximum DC reverse current at                        | T C C C C C C C C C C C C C C C C C C C |      | Ta=25℃  |             | 2.5    |        |        |        |        |        |
| rated DC blocking voltage per diode                  | I <sub>RRM2</sub>                       | μA   | Ta=125℃   |             | 100    |        |        |        |        |        |
| Reverse Recovery time                                | t <sub>rr</sub>                         |      | I <sub>F</sub> =0.5A I <sub>R</sub> =1A<br>I <sub>RR</sub> =0.25A | 150 250 500 |        |        |        | 00     |        |        |
| Typical junction capacitance                         | Cj                                      | pF   | Neasured at 1MHZ and<br>pplied Reverse Voltage 55<br>f 4.0 V.D.C. |             |        |        |        |        |        |        |

## **Thermal Characteristics** $(T_a=25^{\circ}C \text{ Unless otherwise specified})$

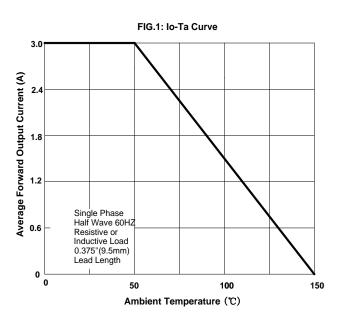
| PARAMETER                   | SYMBOL           | UNIT | FR301G | FR302G | FR303G | FR304G | FR305G | FR306G | FR307G |
|-----------------------------|------------------|------|--------|--------|--------|--------|--------|--------|--------|
| Thermal Resistance(Typical) | $R_{\theta J-A}$ | °C/W |        |        |        | 30     |        |        |        |

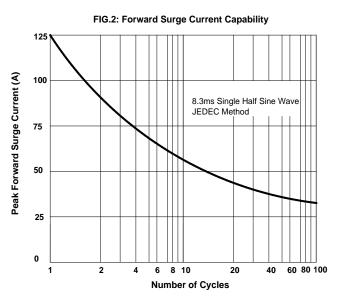


| PREFERED P/N  | PACKAGE CODE | UNIT WEIGHT(g)   | MINIMUM<br>PACKAGE(pcs) | INNER BOX<br>QUANTITY(pcs) | OUTER CARTON<br>QUANTITY(pcs) | DELIVERY MODE |  |  |  |
|---------------|--------------|------------------|-------------------------|----------------------------|-------------------------------|---------------|--|--|--|
| FR301G~FR307G | D1           | Approximate 1.05 | 1250                    | 1250                       | 12500                         | Таре          |  |  |  |
| FR301G~FR307G | C1           | Approximate 1.05 | 250                     | 250                        | 12500                         | Bulk          |  |  |  |

## ■Ordering Information (Example)

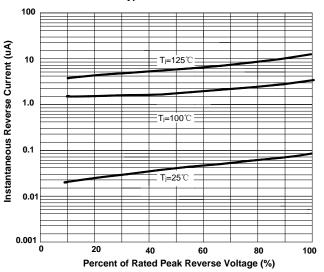
# Characteristics (Typical)





#### FIG.3: Forward Voltage 20 10 Instantaneous Forward Current (A) 4.0 2.0 1.0 0.4 0.2 0.1 **TJ=25℃** Pulse width=300us 1% Duty Cycle 0.02 0.01 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 Instantaneous Forward Voltage (V)

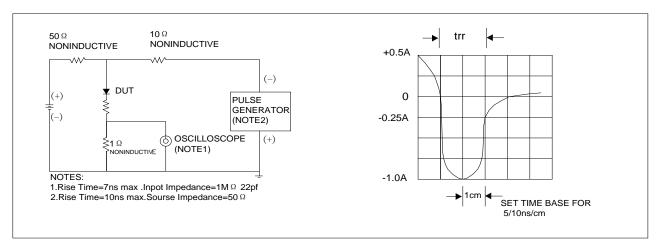
FIG.4: Typical Reverse Characteristics



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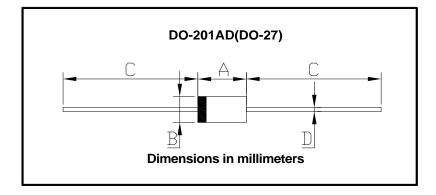


# FR301G THRU FR307G



#### FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

## Outline Dimensions



| DO-201AD(DO-27) |          |      |  |  |  |  |
|-----------------|----------|------|--|--|--|--|
| Dim             | im Min M |      |  |  |  |  |
| А               | 8.50     | 9.50 |  |  |  |  |
| В               | 5.00     | 5.60 |  |  |  |  |
| С               | 25.4     | /    |  |  |  |  |
| D               | 1.20     | 1.30 |  |  |  |  |

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