



FR301 THRU FR307

FAST RECOVERY RECTIFIER

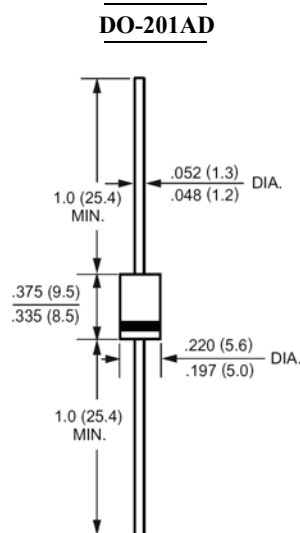
REVERSE VOLTAGE: 50 to 1000 VOLTS
FORWARD CURRENT: 3.0 AMPERE

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



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 $T_A=25^\circ C$ at Rated DC Blocking Voltage $T_A=100^\circ C$ | 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

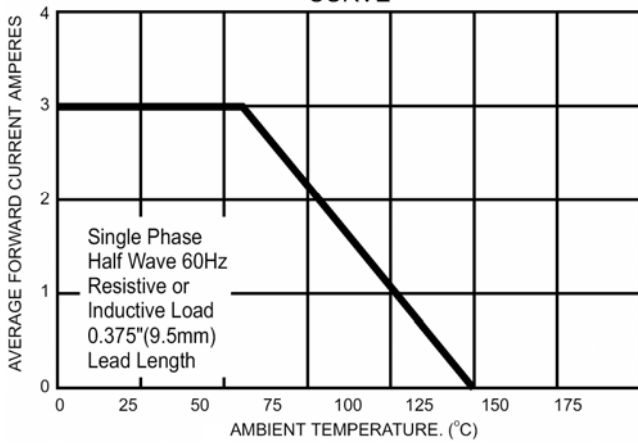


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

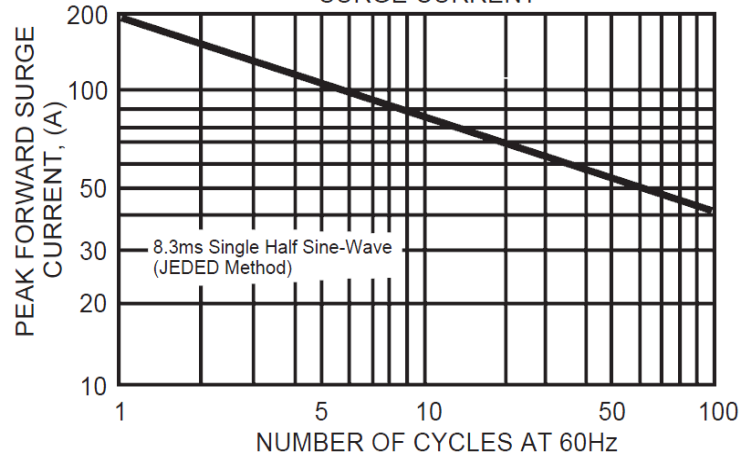


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

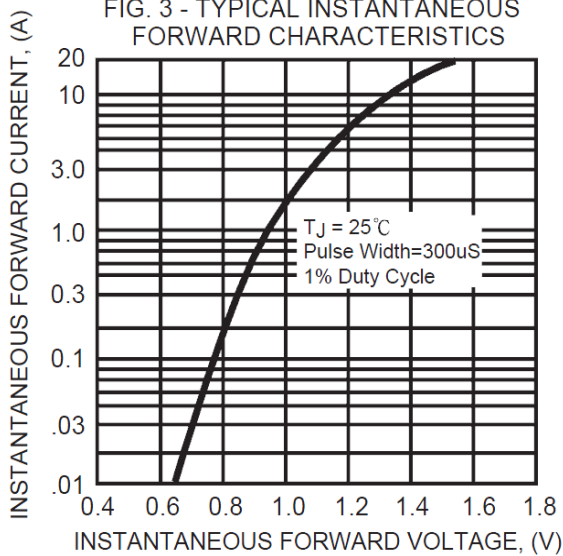


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

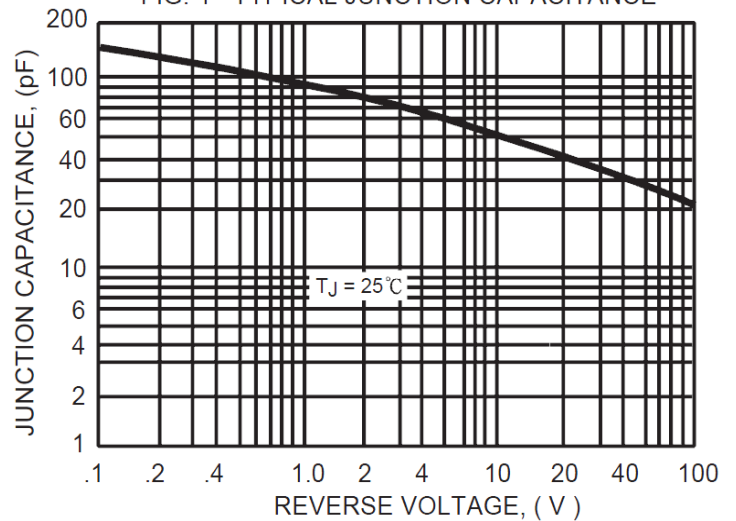
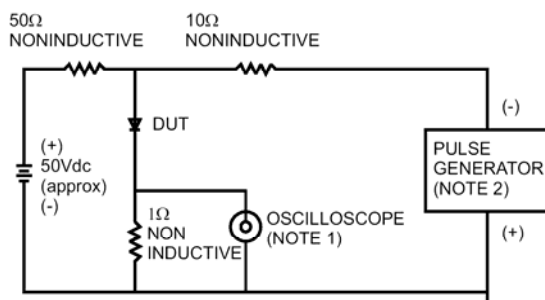


FIG. 5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

