



FR101 - FR107

FAST RECOVERY RECTIFIER

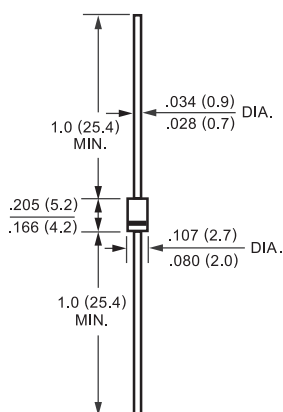
VOLTAGE RANGE - 50 to 1000 Volts CURRENT - 1.0 Ampere

MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: UL 94V0 rate flame retardant
- * Lead: MIL-STD-202E, Method 208 guaranteed
- * Mounting position: Any
- * Weight: 0.33 gram

FEATURES

- * Fast switching
- * Low leakage
- * Low forward voltage drop
- * High current capability
- * High surge capability
- * High reliability



DO-41



Dimensions in inches and (millimeters)

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%.

| PARAMETER | SYMBOL | FR101 | FR102 | FR103 | FR104 | FR105 | FR106 | FR107 | 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 $T_A = 75^\circ\text{C}$ | I_o | 1.0 | | | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave Superimposed on rated load (JEDEC Method) | I_{FSM} | 30 | | | | | | | Amps |
| Maximum Instantaneous Forward Voltage at 1.0A DC | V_F | 1.3 | | | | | | | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A = 25^\circ\text{C}$ | I_R | 5.0 | | | | | | | uAmps |
| Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at $T_L = 55^\circ\text{C}$ | | 100 | | | | | | | uAmps |
| Typical Junction Capacitance (Note 1) | C_J | 15 | | | | | | | pF |
| Maximum Reverse Recovery Time (Note 2) | T_{rr} | 150 | 150 | 150 | 150 | 250 | 500 | 500 | nSec |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | | | | | | | $^\circ\text{C}$ |

NOTES : 1. Measured at 1 MHz and applied reverse voltage of 4 Volts
2. Test Conditions: $I_F = 0.5A$, $I_R = 1.0A$, $I_{RR} = 0.25A$



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RATING AND CHARACTERISTIC CURVES

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

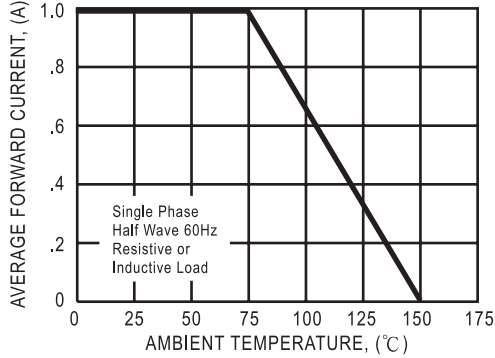


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

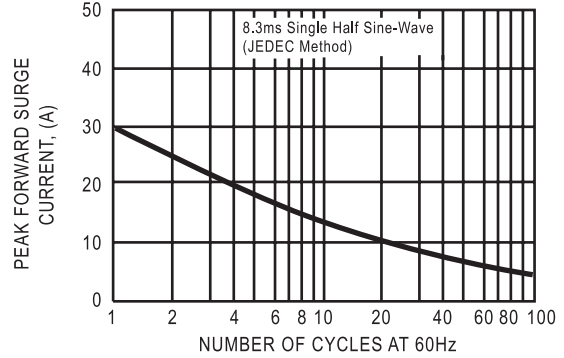


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

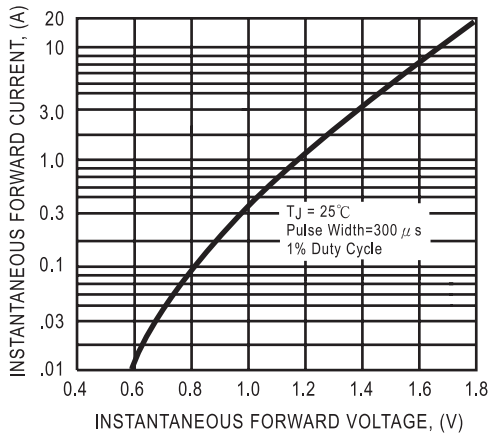


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

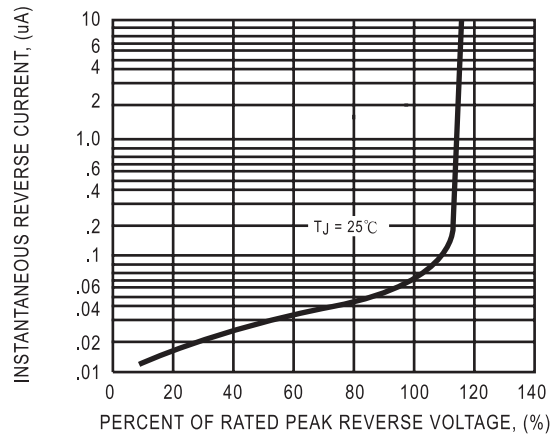


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

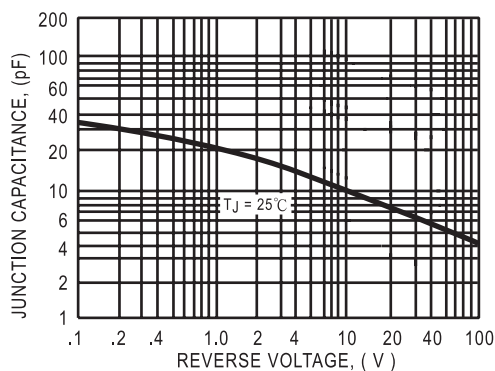
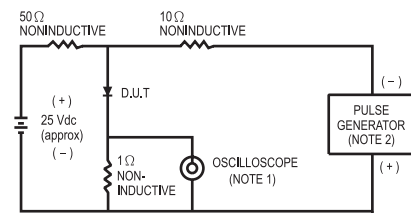


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

