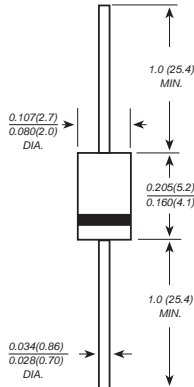


# FR101 THRU FR107

## FAST RECOVERY RECTIFIERS

Reverse Voltage - 50 to 1000 Volts Forward Current - 1.0 Ampere

### DO-41



Dimensions in inches and (millimeters)

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 260°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case:** JEDEC DO-41 molded plastic body  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.012 ounce, 0.33 grams

### 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 current derate by 20%.

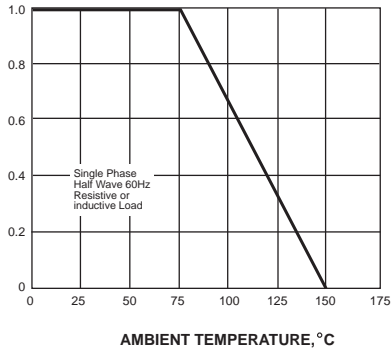
|   | SYMBOLS         | FR 101      | FR 102 | FR 103 | FR 104 | FR 105 | FR 106 | FR 107 | UNITS              |
|---|-----------------|-------------|--------|--------|--------|--------|--------|--------|--------------------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$       | 50          | 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<br>0.375" (9.5mm) lead length at $T_A=75^\circ\text{C}$         | $I_{(AV)}$      | 1.0         |        |        |        |        |        |        | Amp                |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method)    | $I_{FSM}$       | 30.0        |        |        |        |        |        |        | Amps               |
| Maximum instantaneous forward voltage at 1.0A   | $V_F$           | 1.3         |        |        |        |        |        |        | Volts              |
| Maximum DC reverse current $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage $T_A=100^\circ\text{C}$ | $I_R$           | 5.0<br>50.0 |        |        |        |        |        |        | $\mu\text{A}$      |
| Maximum reverse recovery time (NOTE 1)  | $t_{rr}$        | 150         |        |        |        | 250    | 500    |        | ns                 |
| Typical junction capacitance (NOTE 2)   | $C_J$           | 15.0        |        |        |        |        |        |        | pF                 |
| Typical thermal resistance (NOTE 3)   | $R_{\theta JA}$ | 50.0        |        |        |        |        |        |        | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range  | $T_J, T_{STG}$  | -65 to +150 |        |        |        |        |        |        | $^\circ\text{C}$   |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

# RATINGS AND CHARACTERISTIC CURVES FR101 THRU FR107

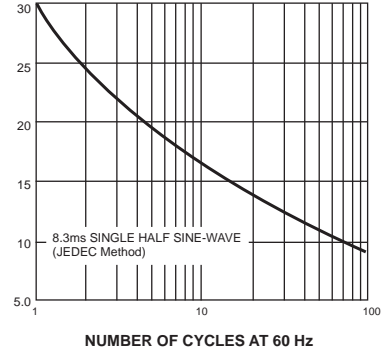
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



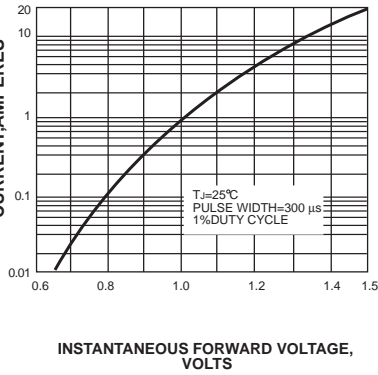
PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



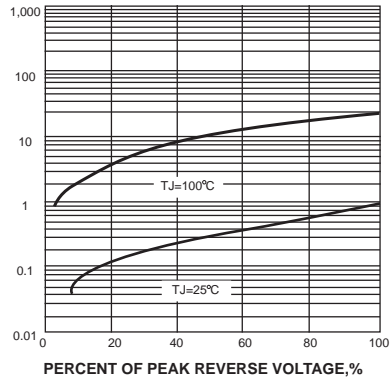
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



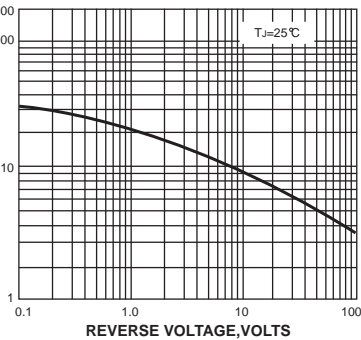
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



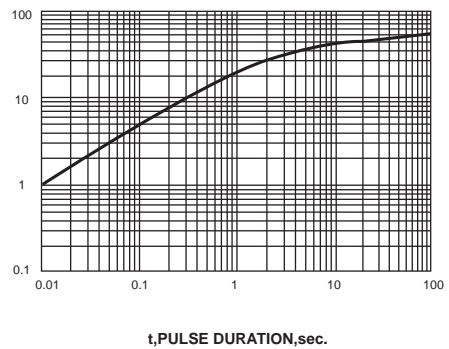
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



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