# 1F10 thru 1F18

1.0 Amp. High Voltage Fast Recovery Rectifiers
Voltage Range 1000 to 1800 Volts  Forward Current 1.0 Ampere

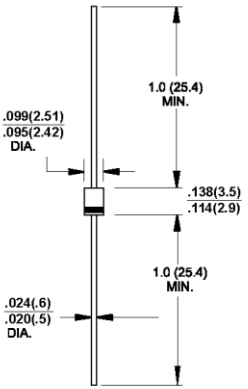
## Features

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

R-1

## Mechanical Data

- Case: Molded plastic R-1
- Epoxy: UL 94V-O rate flame retardant
- Lead: MIL-STD-202E method 208C guaranteed
- Mounting position: Any
- Weight: 0.007 ounce, 0.20 gram




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 | Symbols | 1F10 | 1F12 | 1F14 | 1F15 | 1F16 | 1F18 | Units |
|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 1000 | 1200 | 1400 | 1500 | 1600 | 1800 | Volts |
| Maximum RMS voltage | $V_{RMS}$ | 700 | 840 | 980 | 1050 | 1120 | 1260 | Volts |
| Maximum DC blocking voltage | $V_{DC}$ | 1000 | 1200 | 1400 | 1500 | 1600 | 1800 | Volts |
| Maximum average forward rectified current at $T_A$=50°C | $I_{F(AV)}$ | 0.5 | | | | | | Amp |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 25.0 | | | | | | Amps |
| Maximum instantaneous forward voltage at 0.5A DC | $V_F$ | 1.8 | | | | | | Volts |
| Maximum DC reverse current at rated DC blocking voltage at $T_A$=25°C | $I_R$ | 5.0 | | | | | | uA |
| Maximum full load reverse current average, full cycle average, .375" (9.5mm) lead length at $T_L$=55°C | $I_{R(AV)}$ | 100 | | | | | | uA |
| Maximum reverse recovery time (Note 1) | $t_{rr}$ | 300 | | | | | | nS |
| Typical junction capacitance (Note 2) | $C_J$ | 15 | | | | | | pF |
| Operating and storage temperature range | $T_J$, $T_{STG}$ | -65 to +150 | | | | | | °C |

**Notes:** 1. Reverse Recovery Test Conditions: $I_F$=0.5A, $I_R$=1.0A, $I_{RR}$=0.25A
2. Measured at 1 MHZ and applied reverse voltage of 4.0 volts

## RATINGS AND CHARACTERISTIC CURVES

($T_A$ = 25°C unless otherwise noted)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

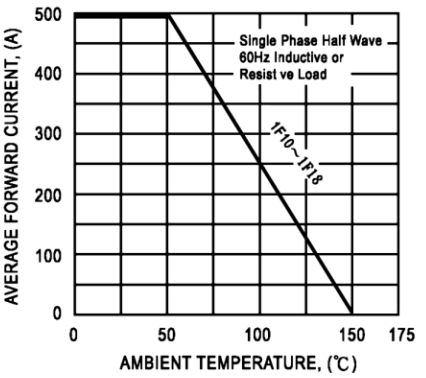



FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

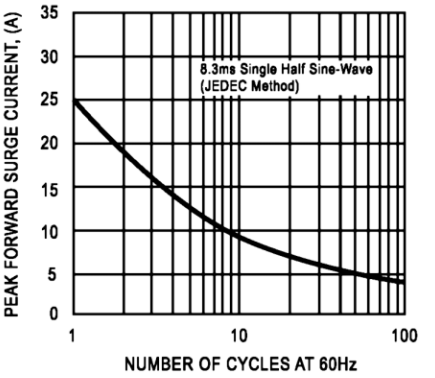
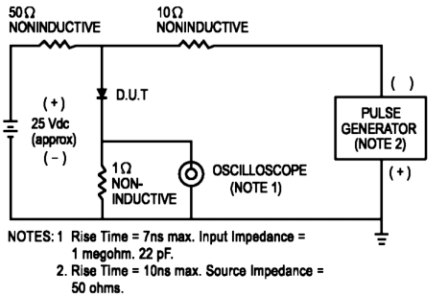



FIG. 3 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC




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