

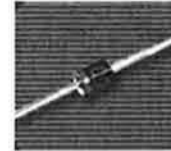


# 1F10 thru 1F18

High Voltage Fast Recovery Rectifiers  
Reverse Voltage 1000 to 1800 Volts Forward Current 1.0 Ampere

## Features

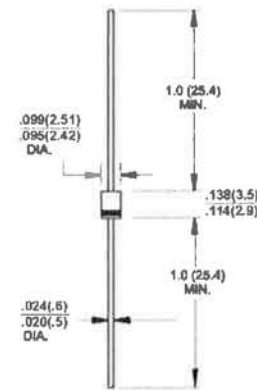
- ◆ Fast switching
- ◆ Low leakage
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High current surge
- ◆ High reliability



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 $T_A=50^\circ\text{C}$	$I_{T(AV)}$	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 $T_A=25^\circ\text{C}$	$I_R$	5.0						$\mu\text{A}$
Maximum full load reverse current average, full cycle average, .375" (9.5mm) lead length at $T_A=55^\circ\text{C}$	$I_{R(AV)}$	100						$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_{rr}$	300						ns
Typical junction capacitance (Note 2)	$C_j$	15						pF
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150						$^\circ\text{C}$

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



## RATINGS AND CHARACTERISTIC CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

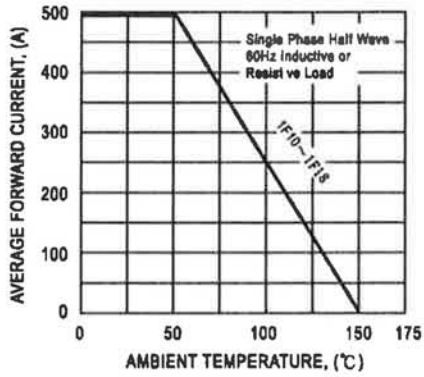


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

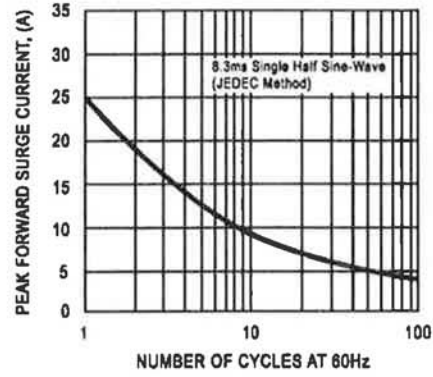
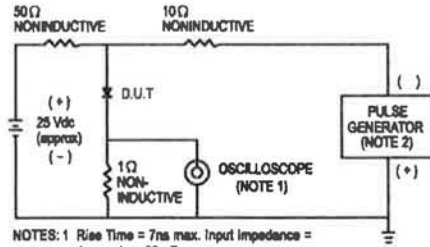


FIG. 3 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

