

# 1F10-1F20

Photo Flash Rectifiers

**VOLTAGE RANGE: 1000 --- 2000 V**

**CURRENT: 0.5 A**



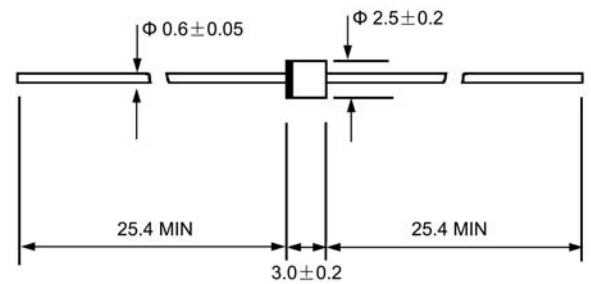
## Features

- ◇ Fast switching
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with alcohol, Isopropanol and similar solvents

## Mechanical Data

- ◇ Case: JEDEC R--1, molded plastic
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.007 ounces, 0.20 grams
- ◇ Mounting position: Any

**R - 1**



Dimensions in 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 by 20%.

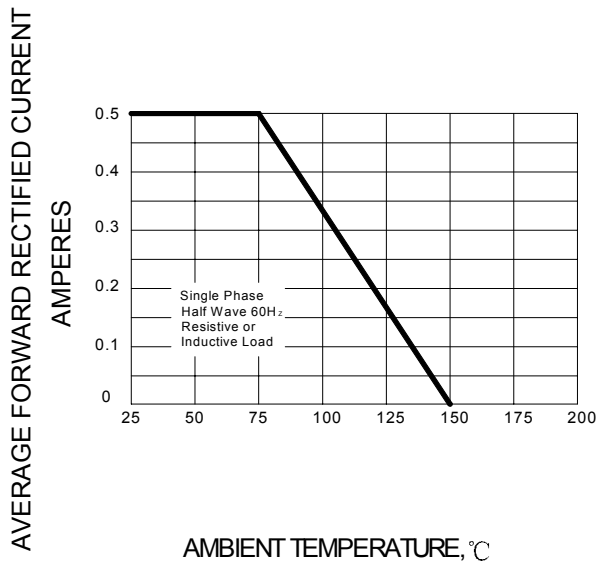
|   |             | 1F10          | 1F12 | 1F14 | 1F15 | 1F16 | 1F18 | 1F20 | UNITS      |
|---|-------------|---------------|------|------|------|------|------|------|------------|
| Maximum recurrent peak reverse voltage  | $V_{RRM}$   | 1000          | 1200 | 1400 | 1500 | 1600 | 1800 | 2000 | V          |
| Maximum RMS voltage   | $V_{RMS}$   | 700           | 840  | 980  | 1050 | 1120 | 1260 | 1400 | V          |
| Maximum DC blocking voltage   | $V_{DC}$    | 1000          | 1200 | 1400 | 1500 | 1600 | 1800 | 2000 | V          |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ C$                        | $I_{F(AV)}$ | 0.5           |      |      |      |      |      |      | A          |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load $T_J=125^\circ C$ | $I_{FSM}$   | 25.0          |      |      |      |      |      |      | A          |
| Maximum instantaneous forward voltage<br>@ 0.5 A  | $V_F$       | 1.8           |      |      |      |      |      |      | V          |
| Maximum reverse current @ $T_A=25^\circ C$<br>at rated DC blocking voltage @ $T_A=100^\circ C$            | $I_R$       | 5.0<br>100.0  |      |      |      |      |      |      | $\mu A$    |
| Maximum reverse recovery time (NOTE1)   | $t_{rr}$    | 300           |      |      |      |      |      |      | ns         |
| Typical junction capacitance (NOTE2)  | $C_J$       | 15            |      |      |      |      |      |      | pF         |
| Operating junction temperature range  | $T_J$       | -55 --- + 150 |      |      |      |      |      |      | $^\circ C$ |
| Storage temperature range   | $T_{STG}$   | -55 --- + 150 |      |      |      |      |      |      | $^\circ C$ |

NOTE: 1. Reverse recovery test conditions:  $I_F=0.5A, I_R=1.0A, I_{RR}=0.25A$ .

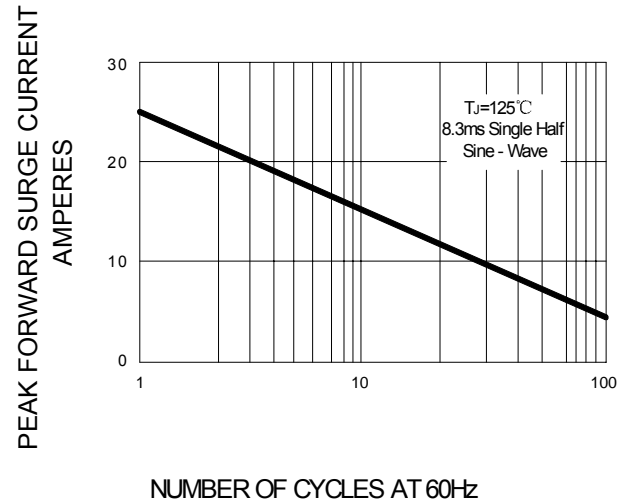
2. Measured at 1MHz and applied reverse voltage of 4.0V.

## Ratings AND Characteristic Curves

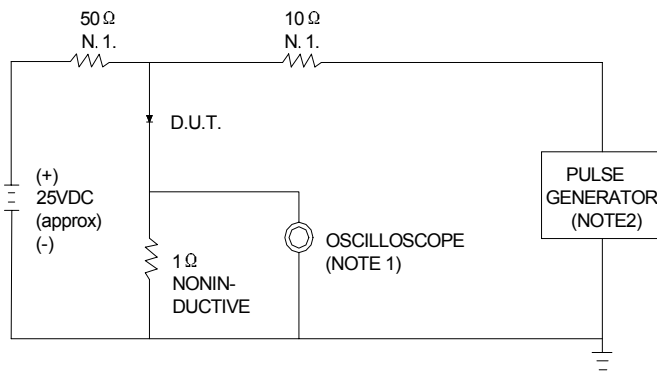
**FIG.1 – FORWARD DERATING CURVE**



**FIG.2 – PEAK FORWARD SURGE CURRENT**



**FIG.3 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE =  $1\text{M}\Omega$ , 22pF.  
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50 Ω.

