

## ULTRA FAST RECTIFIER

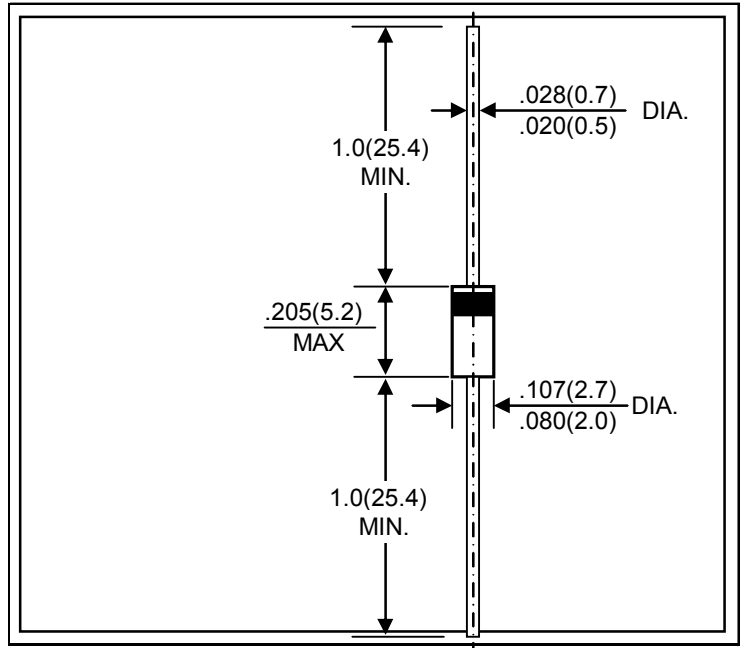
**VOLTAGE RANGE: 50 --- 1000 V**  
**CURRENT: 1.0 A**

### FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with freon, alcohol, Isopropanol and similar solvents
- ◇ The plastic material carries U/L recognition 94V-0

### MECHANICAL DATA

- ◇ Case: JEDEC DO-41, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.012 ounces, 0.34 grams
- ◇ Mounting position: Any



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Dimensions in inches and millimeter

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

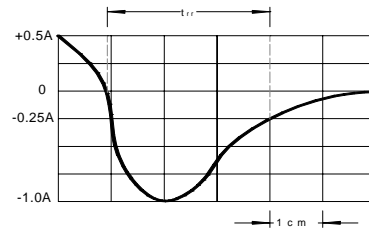
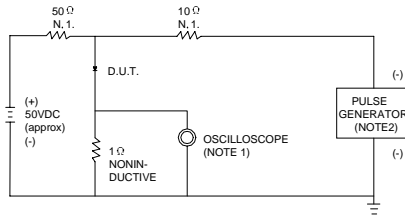
|   |                 | UF4001           | UF4002 | UF4003 | UF4004 | UF4005 | UF4006 | UF4007 | UNITS                     |
|---|-----------------|------------------|--------|--------|--------|--------|--------|--------|---------------------------|
| Maximum recurrent peak reverse voltage  | $V_{RRM}$       | 50               | 100    | 200    | 400    | 600    | 800    | 1000   | V                         |
| Maximum RMS voltage   | $V_{RMS}$       | 35               | 70     | 140    | 280    | 420    | 560    | 700    | V                         |
| Maximum DC blocking voltage   | $V_{DC}$        | 50               | 100    | 200    | 400    | 600    | 800    | 1000   | V                         |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ\text{C}$                          | $I_{F(AV)}$     | 1.0              |        |        |        |        |        |        | A                         |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load @ $T_J=125^\circ\text{C}$ | $I_{FSM}$       | 30.0             |        |        |        |        |        |        | A                         |
| Maximum instantaneous forward voltage<br>@ 1.0A   | $V_F$           | 1.0              |        |        |        | 1.7    |        |        | V                         |
| Maximum reverse current @ $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage @ $T_A=100^\circ\text{C}$        | $I_R$           | 10.0<br>100.0    |        |        |        |        |        |        | $\mu\text{A}$             |
| Maximum reverse recovery time (Note1)   | $t_{rr}$        | 50               |        |        |        | 75     |        |        | ns                        |
| Typical junction capacitance (Note2)  | $C_J$           | 17               |        |        |        |        |        |        | pF                        |
| Typical thermal resistance (Note3)  | $R_{\theta JA}$ | 60               |        |        |        |        |        |        | $^\circ\text{C}/\text{W}$ |
| Operating junction temperature range  | $T_J$           | - 55 ----- + 150 |        |        |        |        |        |        | $^\circ\text{C}$          |
| Storage temperature range   | $T_{STG}$       | - 55 ----- + 150 |        |        |        |        |        |        | $^\circ\text{C}$          |

NOTE: 1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance junction to ambient

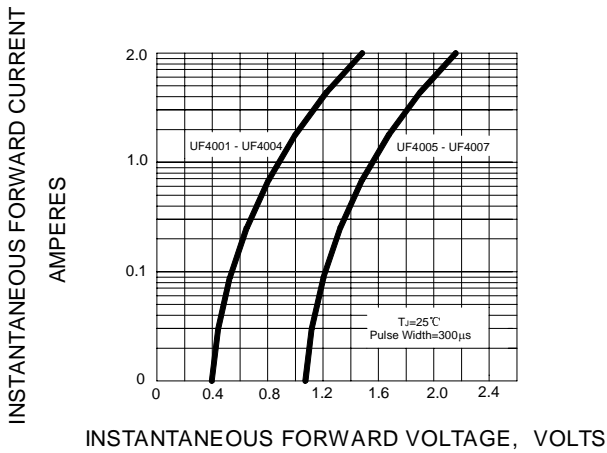
**FIG.1 -- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



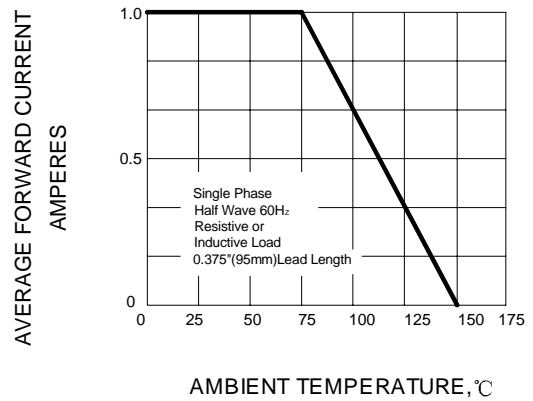
NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1MΩ .22pF.  
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50 Ω.

SET TIME BASE FOR 10/20 ns/cm

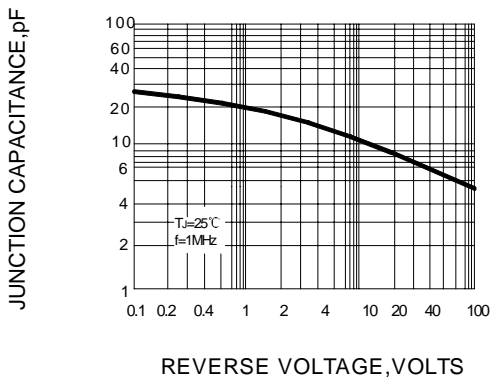
**FIG.2 -- TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 -- FORWARD DERATING CURVE**



**FIG.4 -- TYPICAL JUNCTION CAPACITANCE**



**FIG.5 -- PEAK FORWARD SURGE CURRENT**

