

# UF4001 - UF4007

1.0 AMP. Glass Passivated  
High Efficient Plastic Rectifiers

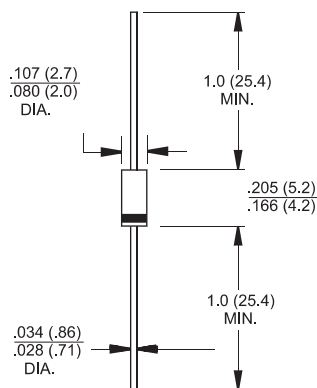
## DO-41 / DO-204AL

### Features

- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V0
- ✧ 1.0 ampere operation at  $T_A=55^{\circ}\text{C}$  with no thermal runaway
- ✧ Glass passivated chip junction
- ✧ Low cost
- ✧ Ultrafast recovery time for high efficiency
- ✧ High efficiency, low VF
- ✧ Low leakage current
- ✧ High surge current capability

### Mechanical Data

- ✧ Case: JEDEC DO-204AL molded plastic body over passivated chip
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Color band denotes cathode
- ✧ Mounting Position: Any
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds/.375"(9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 0.012 ounce, 0.3 gram



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating 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%

| Type Number  | Symbol                             | UF 4001      | UF 4002 | UF 4003 | UF 4004 | UF 4005 | UF 4006 | UF 4007 | 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 .375 (9.5mm) Lead Length @ $T_A = 55^{\circ}\text{C}$                | $I_{(AV)}$                         | 1.0          |         |         |         |         |         |         | A                              |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )            | $I_{FSM}$                          | 30           |         |         |         |         |         |         | A                              |
| Maximum Instantaneous Forward Voltage @ 1.0A   | $V_F$                              | 1.0          |         |         |         | 1.7     |         |         | V                              |
| Maximum DC Reverse Current @ $T_A=25^{\circ}\text{C}$ at Rated DC Blocking Voltage @ $T_A=125^{\circ}\text{C}$ | $I_R$                              | 5.0          |         |         |         | 150     |         |         | $\mu\text{A}$<br>$\mu\text{A}$ |
| Maximum Reverse Recovery Time ( Note 1 )   | $T_{rr}$                           | 50           |         |         |         | 75      |         |         | nS                             |
| Typical Junction Capacitance ( Note 2 )  | $C_j$                              | 17           |         |         |         |         |         |         | pF                             |
| Typical Thermal Resistance (Note 3)  | $R_{\theta JA}$<br>$R_{\theta JL}$ | 15           |         |         |         | 60      |         |         | $^{\circ}\text{C}/\text{W}$    |
| Operating/Storage Temperature Range  | $T_J, T_{STG}$                     | -65 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 V D.C.
  3. Thermal Resistance from junction to ambient and from Junction to Lead Length .375"(9.5mm), P.C.B. Mounted.

## RATINGS AND CHARACTERISTIC CURVES (UF4001 THRU UF4007)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

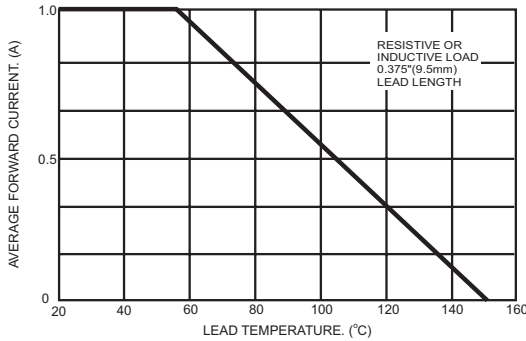


FIG.2- TYPICAL FORWARD CHARACTERISTICS

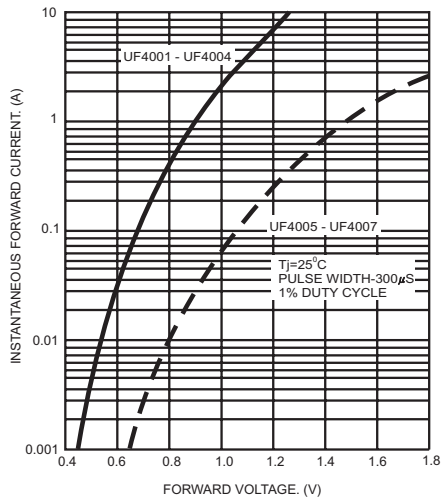


FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

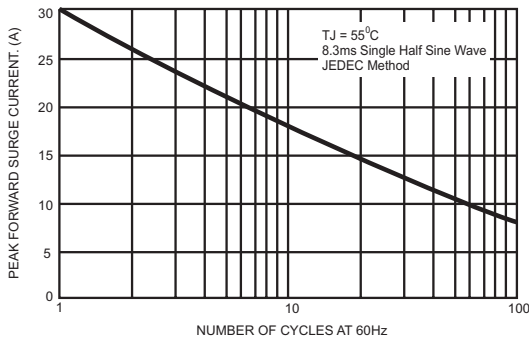


FIG.5- TYPICAL REVERSE CHARACTERISTICS

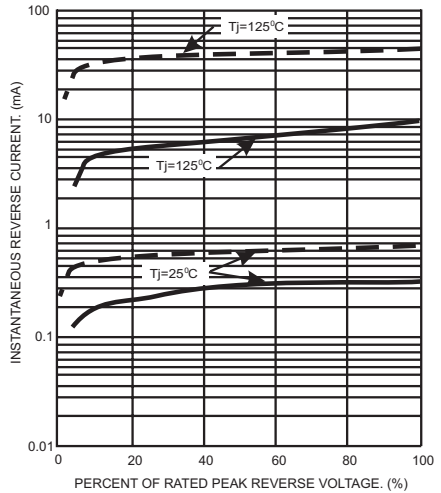


FIG.4- TYPICAL JUNCTION CAPACITANCE

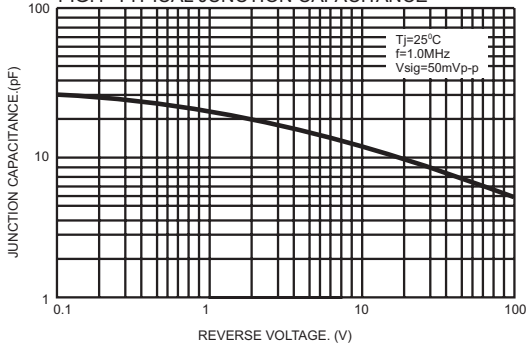
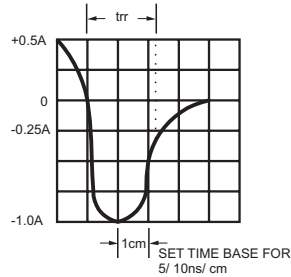
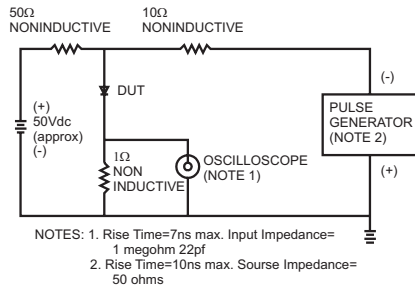


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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