



# UF4001 THRU UF4007

## ULTRA FAST RECTIFIERS

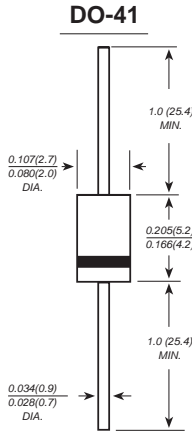
Reverse Voltage - 50 to 1000 Volts Forward Current - 1.0 Ampere

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Ultra fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds, 0.375" (9.5mm) lead length,  
5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case:** JEDEC DO-41 molded plastic body  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.012 ounce, 0.33 grams



Dimensions in inches and (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 current derate by 20%.

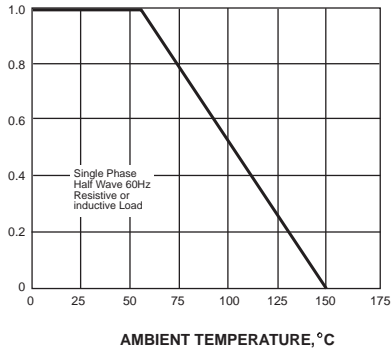
|   | SYMBOLS        | UF 4001     | UF 4002 | UF 4003 | UF 4004 | UF 4005 | UF 4006 | UF 4007       | UNITS              |
|---|----------------|-------------|---------|---------|---------|---------|---------|---------------|--------------------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$      | 50          | 100     | 200     | 400     | 600     | 800     | 1000          | VOLTS              |
| Maximum RMS voltage   | $V_{RMS}$      | 35          | 70      | 140     | 280     | 420     | 560     | 700           | VOLTS              |
| Maximum DC blocking voltage   | $V_{DC}$       | 50          | 100     | 200     | 400     | 600     | 800     | 1000          | VOLTS              |
| Maximum average forward rectified current<br>0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$         | $I_{(AV)}$     | 1.0         |         |         |         |         |         |               | Amps               |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method)    | $I_{FSM}$      | 30.0        |         |         |         |         |         |               | Amps               |
| Maximum instantaneous forward voltage at 1.0A   | $V_F$          | 1.0         |         |         | 1.70    |         |         | Volts         |                    |
| Maximum DC reverse current $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage $T_A=100^\circ\text{C}$ | $I_R$          | 5.0         |         |         | 50.0    |         |         | $\mu\text{A}$ |                    |
| Maximum reverse recovery time (NOTE 1)  | $t_{rr}$       | 50          |         |         | 75      |         |         | ns            |                    |
| Typical junction capacitance (NOTE 2)   | $C_J$          | 15.0        |         |         |         |         |         |               | pF                 |
| Typical thermal resistance (NOTE 3)   | $R_{qJA}$      | 50.0        |         |         |         |         |         |               | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range  | $T_J, T_{STG}$ | -65 to +150 |         |         |         |         |         |               | $^\circ\text{C}$   |

- Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

# RATINGS AND CHARACTERISTIC CURVES UF4001 THRU UF4007

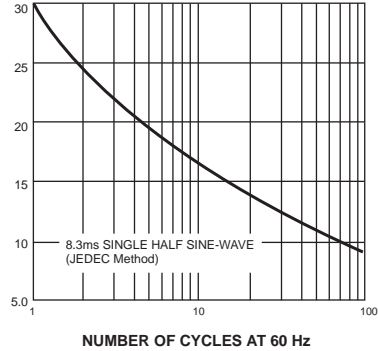
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



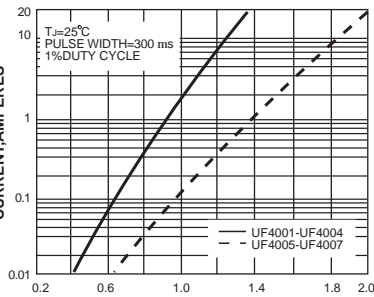
PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



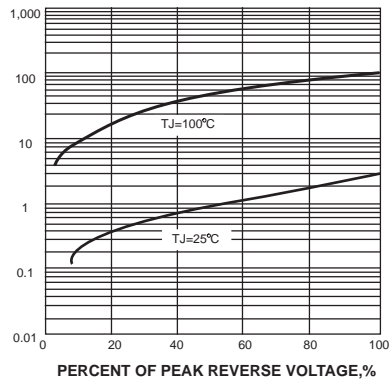
INSTANTANEOUS FORWARD CURRENT,AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



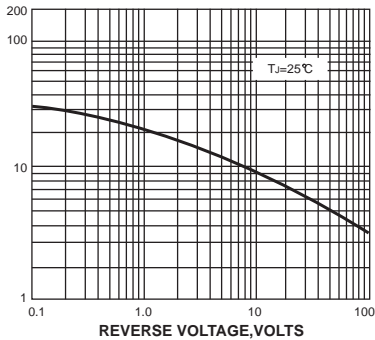
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

