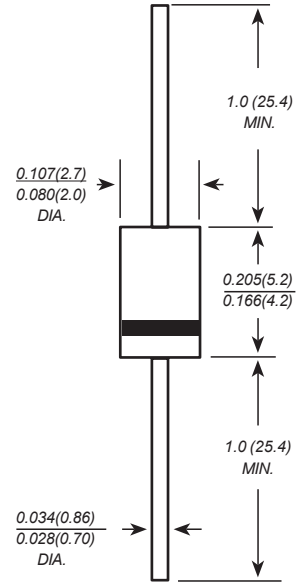


## ULTRA FAST RECTIFIERS

### 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

### DO-41



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%.

| parameter                                                                                                       | SYMBOLS                           | UF4001      | UF4002 | UF4003 | UF4004 | UF4005 | UF4006 | UF4007 | UNITS |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|--------|--------|--------|--------|--------|--------|-------|
| Marking code                                                                                                    |                                   |             |        |        |        |        |        |        |       |
| Maximum repetitive peak reverse voltage                                                                         | V <sub>RRM</sub>                  | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V     |
| Maximum RMS voltage                                                                                             | V <sub>RMS</sub>                  | 35          | 70     | 140    | 280    | 420    | 560    | 700    | V     |
| Maximum DC blocking voltage                                                                                     | V <sub>DC</sub>                   | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V     |
| Maximum average forward rectified current<br>0.375"(9.5mm) lead length at T <sub>A</sub> =55°C                  | I <sub>(AV)</sub>                 | 1.0         |        |        |        |        |        |        | A     |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method)          | I <sub>FSM</sub>                  | 30.0        |        |        |        |        |        |        | A     |
| Maximum instantaneous forward voltage at 1.0A                                                                   | V <sub>F</sub>                    | 1.0         |        |        |        | 1.7    |        |        | V     |
| Maximum DC reverse current      T <sub>A</sub> =25°C<br>at rated DC blocking voltage      T <sub>A</sub> =100°C | I <sub>R</sub>                    | 5.0<br>50.0 |        |        |        |        |        |        | μA    |
| Maximum reverse recovery time      (NOTE 1)                                                                     | t <sub>rr</sub>                   | 50          |        |        |        | 75     |        |        | ns    |
| Typical junction capacitance (NOTE 2)                                                                           | C <sub>J</sub>                    | 15.0        |        |        |        |        |        |        | pF    |
| Typical thermal resistance (NOTE 3)                                                                             | R <sub>θJA</sub>                  | 50.0        |        |        |        |        |        |        | °C/W  |
| Operating junction and storage temperature range                                                                | T <sub>J</sub> , T <sub>STG</sub> | -50 to +150 |        |        |        |        |        |        | °C    |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$

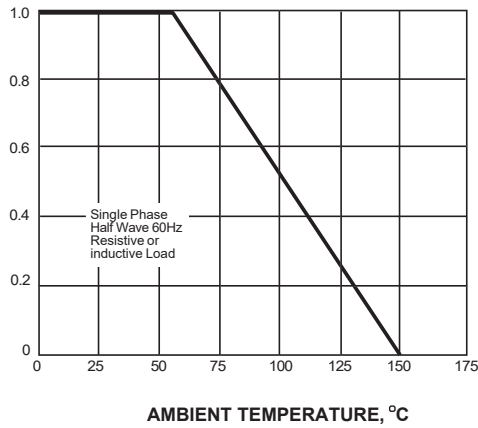
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

## Ratings And Characteristic Curves

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

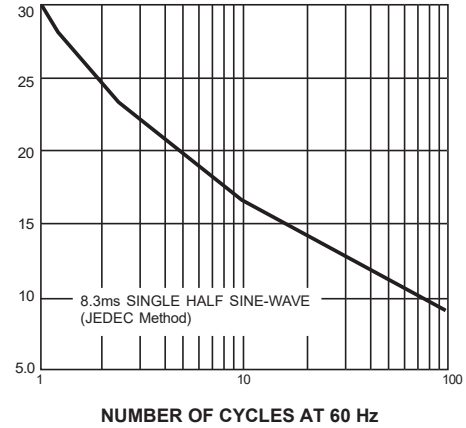
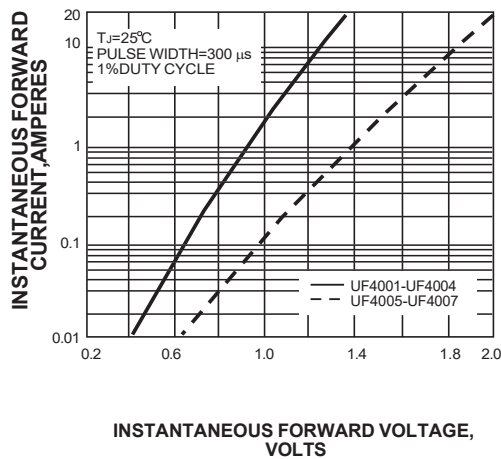


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

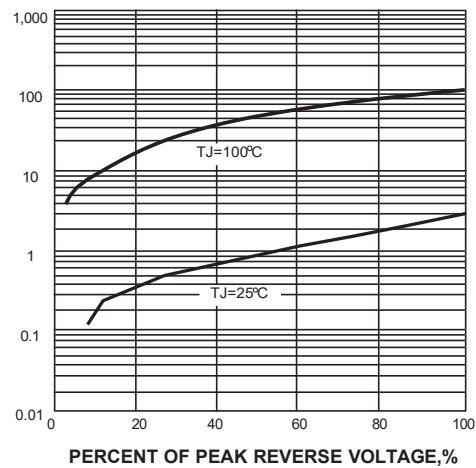
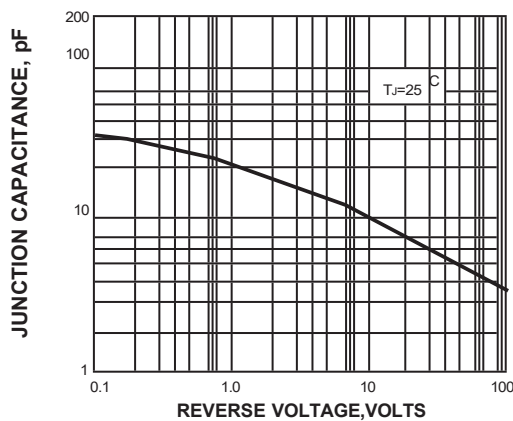
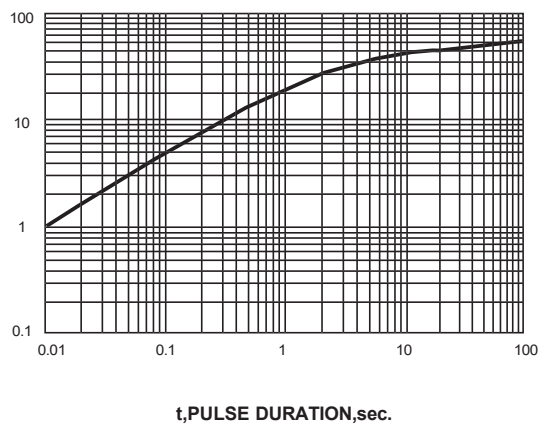


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.