

## UF1000~UF1006

### ULTRAFAST RECOVERY RECTIFIERS

**VOLTAGE** 50 to 600 Volts **CURRENT** 10.0 Amperes

TO-220AC

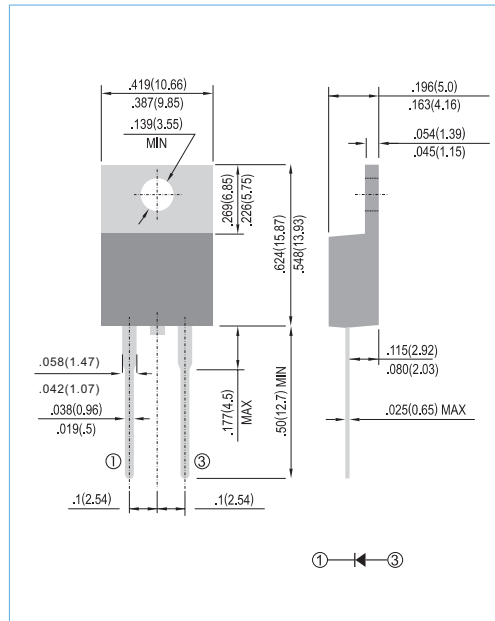
Unit: inch ( mm )

#### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O utilizing Flame Retardant Epoxy Molding Compound.
- Exceeds environmental standards of MIL-S-19500/228
- Low power loss, high efficiency.
- Low forward voltage, high current capability
- High surge capacity.
- Ultra fast recovery time, high voltage.
- In compliance with EU RoHS 2002/95/EC directives

#### MECHANICAL DATA

- Case: TO-220AC full molded plastic package
- Terminals: Lead solderable per MIL-STD-750, Method 2026
- Polarity: As marked.
- Standard packaging: Any
- Weight: 0.0655 ounces, 1.859 grams.



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings 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%

| PARAMETER                                                                                             | SYMBOL                           | UF1000      | UF1001 | UF1002 | UF1003 | UF1004 | UF1006 | UNITS  |
|-------------------------------------------------------------------------------------------------------|----------------------------------|-------------|--------|--------|--------|--------|--------|--------|
| Maximum Recurrent Peak Reverse Voltage                                                                | V <sub>RRM</sub>                 | 50          | 100    | 200    | 300    | 400    | 600    | V      |
| Maximum RMS Voltage                                                                                   | V <sub>RMS</sub>                 | 35          | 70     | 140    | 210    | 280    | 420    | V      |
| Maximum DC Blocking Voltage                                                                           | V <sub>DC</sub>                  | 50          | 100    | 200    | 300    | 400    | 600    | V      |
| Maximum Average Forward Current at T <sub>C</sub> = 100°C                                             | I <sub>F(AV)</sub>               | 10          |        |        |        |        |        | A      |
| Peak Forward Surge Current :8.3ms single half sine-wave superimposed on rated load(JEDEC method)      | I <sub>FSM</sub>                 | 150         |        |        |        |        |        | A      |
| Maximum Forward Voltage at 10.0A                                                                      | V <sub>F</sub>                   | 1.0         |        |        | 1.30   |        | 1.70   | V      |
| Maximum DC Reverse Current T <sub>J</sub> =25°C<br>at Rated DC Blocking Voltage T <sub>J</sub> =125°C | I <sub>R</sub>                   | 1.0<br>500  |        |        |        |        |        | μA     |
| Typical Junction Capacitance (Note 1)                                                                 | C <sub>J</sub>                   | 80          |        |        |        |        | 50     | pF     |
| Maximum Reverse Recovery Time (Note 2)                                                                | t <sub>rr</sub>                  | 50          |        |        |        |        | 100    | ns     |
| Typical Thermal Resistance (Note 3)                                                                   | R <sub>θJC</sub>                 | 2           |        |        |        |        |        | °C / W |
| Operating Junction and Storage Temperature Range                                                      | T <sub>J</sub> ,T <sub>STG</sub> | -55 to +150 |        |        |        |        |        | °C     |

#### NOTES:

1. Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
2. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=25\text{A}$ .
3. Thermal resistance from Junction to case.
4. Both Bonding and Chip structure are available.

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### RATING AND CHARACTERISTIC CURVES

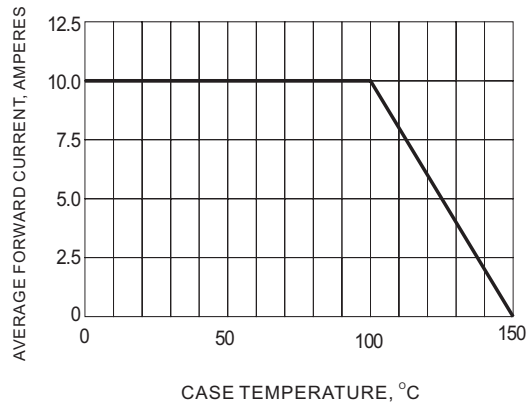


Fig.1 FORWARD CURRENT DERATING CURVE

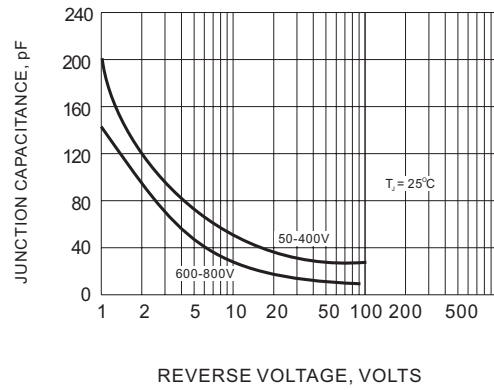


Fig.2 TYPICAL JUNCTION CAPACITANCES

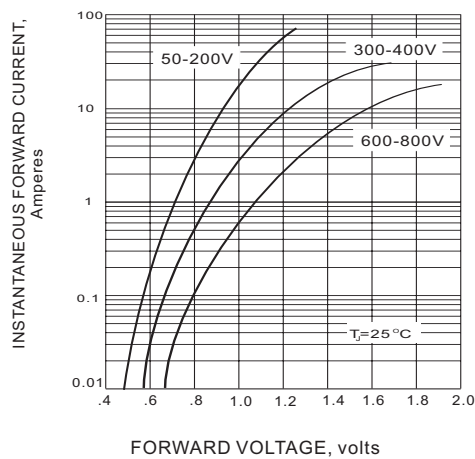


Fig.3 FORWARD CHARACTERISTICS

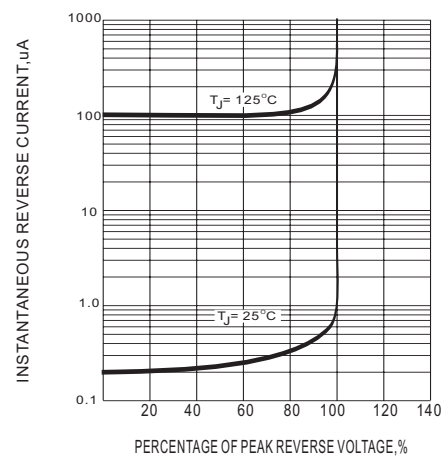


Fig.4 TYPICAL REVERSE CHARACTERISTICS

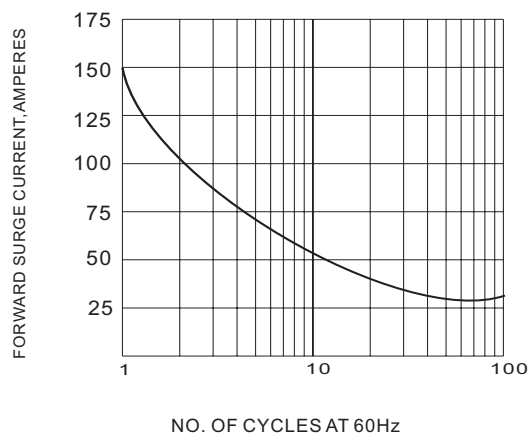


Fig.5 PEAK FORWARD SURGE CURRENT