

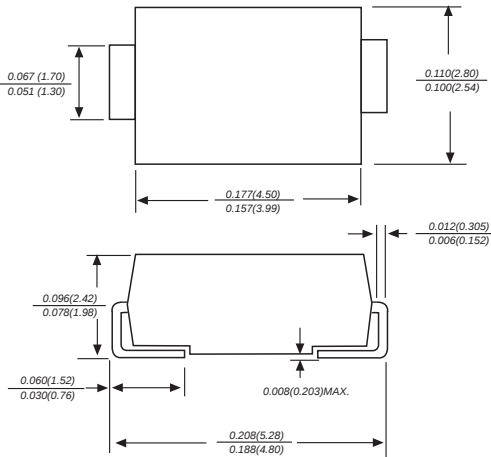


# UF1A THRU UF1M

## SURFACE MOUNT ULTRA FAST RECTIFIER

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

### DO-214AC/SMA



Dimensions in inches and (millimeters)

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ◆ Glass passivated chip junction

### MECHANICAL DATA

**Case:** JEDEC DO-214AC molded plastic body over passivated chip  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.002 ounce, 0.07 grams

### 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%.

| MDD Catalog Number                                                                                          | SYMBOLS                          | UF1A        | UF1B | UF1D | UF1G | UF1J | UF1K | UF1M | UNITS |
|-------------------------------------------------------------------------------------------------------------|----------------------------------|-------------|------|------|------|------|------|------|-------|
| Maximum repetitive peak reverse voltage                                                                     | V <sub>RRM</sub>                 | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | VOLTS |
| Maximum RMS voltage                                                                                         | V <sub>RMS</sub>                 | 35          | 70   | 140  | 280  | 420  | 560  | 700  | VOLTS |
| Maximum DC blocking voltage                                                                                 | V <sub>DC</sub>                  | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | VOLTS |
| Maximum average forward rectified current at T <sub>L</sub> =55°C                                           | I <sub>(AV)</sub>                | 1.0         |      |      |      |      |      |      | Amp   |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method)         | I <sub>FSM</sub>                 | 30.0        |      |      |      |      |      |      | Amps  |
| Maximum instantaneous forward voltage at 1.0A                                                               | V <sub>F</sub>                   | 1.0         |      |      | 1.4  | 1.7  |      |      | Volts |
| 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  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_{rr}=0.25\text{A}$

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

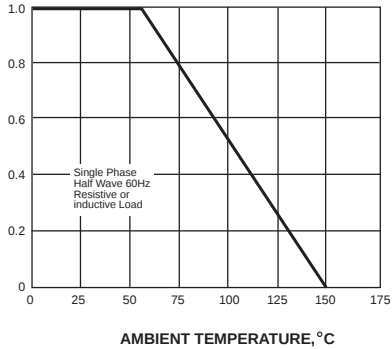
3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

MDD ELECTRONIC

# RATINGS AND CHARACTERISTIC CURVES UF1A THRU UF1M

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

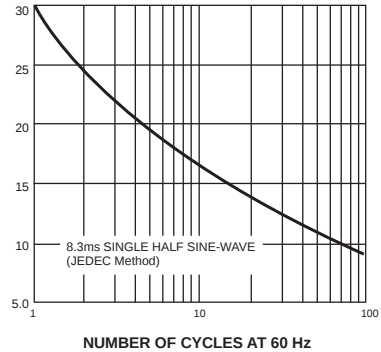


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

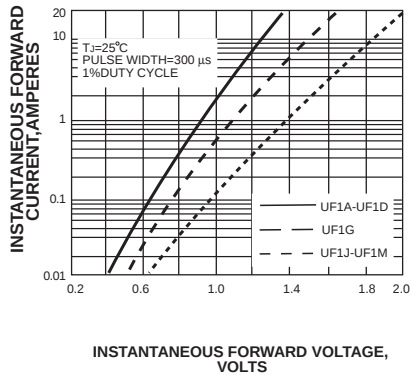


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

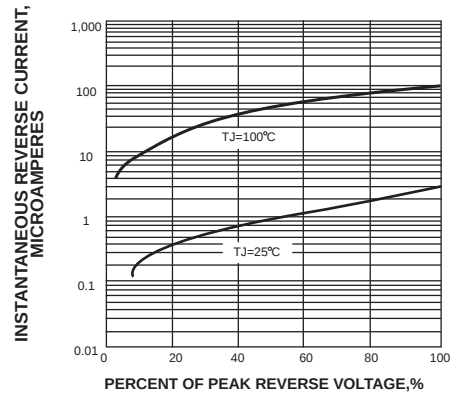
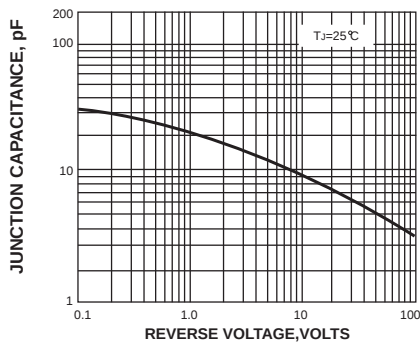


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

