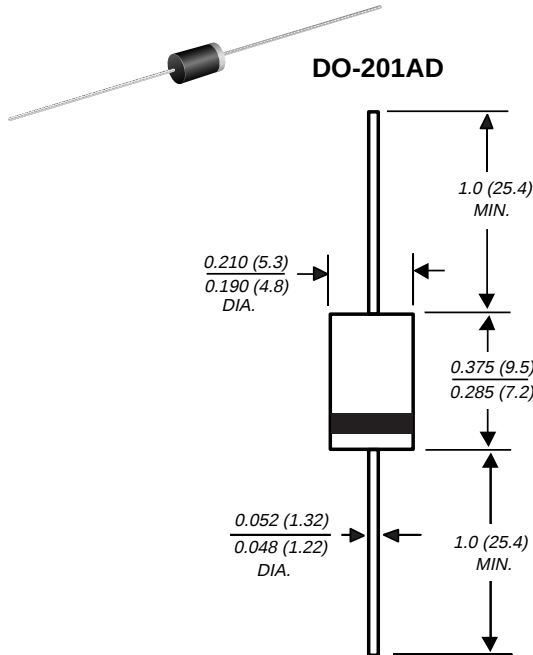


## Ultrafast Plastic Rectifier

Reverse Voltage 50 to 1000 V

Forward Current 3.0 A



Dimensions in inches and (millimeters)

### Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Glass passivated chip junction
- Low cost
- Ultrafast recovery time for high efficiency
- Low forward voltage, high current capability
- Low leakage
- High surge capability
- High temperature soldering guaranteed:  
250°C, 0.375" (9.5mm) lead length for 10 seconds,  
5 lbs. (2.3kg) tension

### Mechanical Data

**Case:** JEDEC DO-201AD molded plastic body over passivated chip

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.04 ounce, 1.1 grams

## Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                  | SYMBOLS                            | UF5400      | UF5401 | UF5402 | UF5403 | UF5404 | UF5405 | UF5406 | UF5407 | UF5408 | UNITS              |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------|
| Maximum repetitive peak reverse voltage                                                                                          | $V_{RRM}$                          | 50          | 100    | 200    | 300    | 400    | 500    | 600    | 800    | 1000   | V                  |
| Maximum RMS voltage                                                                                                              | $V_{RMS}$                          | 35          | 70     | 140    | 210    | 280    | 350    | 420    | 560    | 700    | V                  |
| Maximum DC blocking voltage                                                                                                      | $V_{DC}$                           | 50          | 100    | 200    | 300    | 400    | 500    | 600    | 800    | 1000   | V                  |
| Maximum average forward rectified current,<br>0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$                               | $I_{F(AV)}$                        | 3.0         |        |        |        |        |        |        |        |        | A                  |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC Method) at $T_A=55^\circ\text{C}$ | $I_{FSM}$                          | 150         |        |        |        |        |        |        |        |        | A                  |
| Typical thermal resistance (NOTE 1)                                                                                              | $R_{\theta JA}$<br>$R_{\theta JL}$ | 20<br>8.5   |        |        |        |        |        |        |        |        | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range                                                                                 | $T_J, T_{STG}$                     | -55 to +150 |        |        |        |        |        |        |        |        | $^\circ\text{C}$   |

## Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                     | SYMBOLS  | UF5400 | UF5401 | UF5402 | UF5403 | UF5404 | UF5405 | UF5406 | UF5407 | UF5408 | UNITS         |
|-------------------------------------------------------------------------------------------------------------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------|
| Maximum instantaneous forward voltage at 3.0A (NOTE 2)                                                                              | $V_F$    | 1.0    |        |        |        |        | 1.7    |        |        |        | V             |
| Maximum DC reverse current<br>$T_A = 25^\circ\text{C}$<br>at rated DC blocking voltage<br>$T_A = 100^\circ\text{C}$                 | $I_R$    | 10     |        |        |        |        | 200    |        |        |        | $\mu\text{A}$ |
| Maximum reverse recovery time<br>at $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{rr} = 0.25\text{A}$<br>$T_J = 25^\circ\text{C}$ | $t_{rr}$ | 50     |        |        |        |        | 75     |        |        |        | ns            |
| Typical junction capacitance at 4.0V, 1MHz                                                                                          | $C_J$    | 45     |        |        |        |        | 36     |        |        |        | pF            |

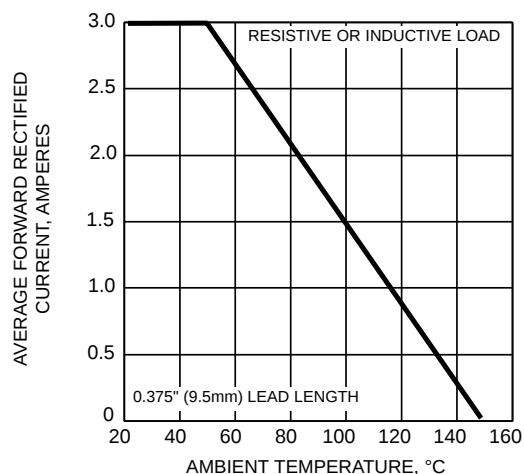
### NOTES:

(1) Thermal resistance from junction to lead and from junction to ambient with 0.375" (9.5mm) lead length, both leads attached to heatsink

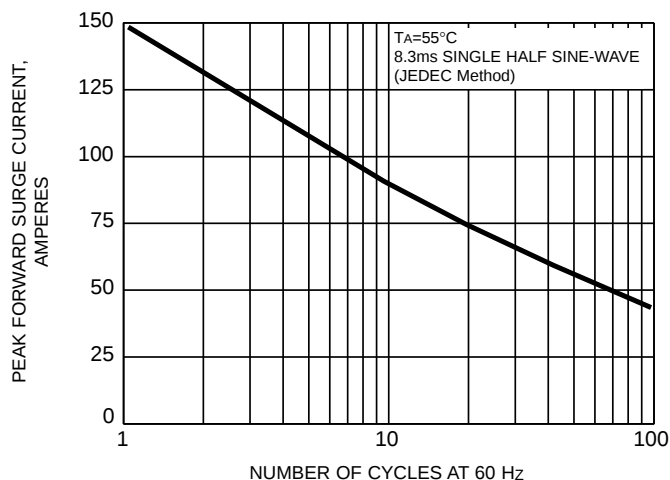
(2) Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

## Ratings and Characteristic Curves (T<sub>A</sub> = 25°C unless otherwise noted)

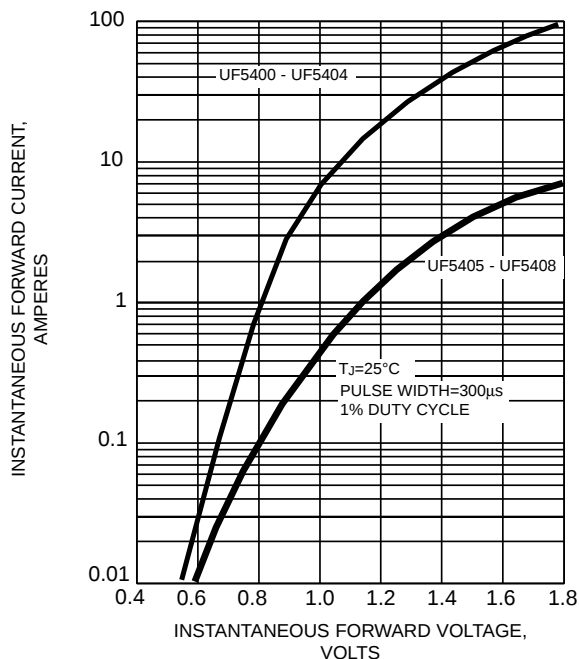
**FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVE**



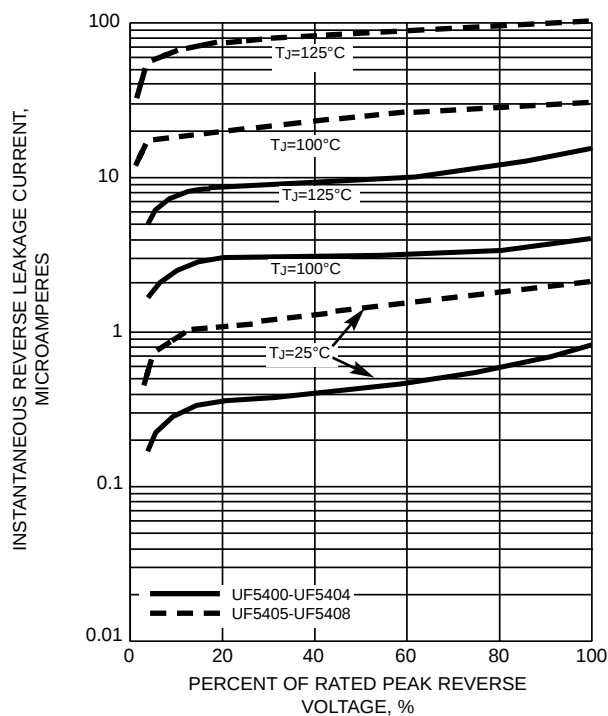
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG. 3 - TYPICAL FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

