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## UF5400 thru UF5408 Soft Recovery Ultrafast Plastic Rectifier DO201AD Type Package

**Description:**

The UF5400 thru UF5408 are soft recovery, ultrafast plastic rectifiers for use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication applications.

**Features:**

- Ultrafast reverse Recovery Time
- Low Forward Voltage Drop
- Low Switching Losses, High Efficiency
- High Forward Surge Capability

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$ , unless otherwise specified)

|   |       |
|---|-------|
| Max. Repetitive Reverse Voltage, $V_{RRM}$  |       |
| UF5400  | 50V   |
| UF5401  | 100V  |
| UF5402  | 200V  |
| UF5404  | 400V  |
| UF5406  | 600V  |
| UF5407  | 800V  |
| UF5408  | 1000V |
| Max. RMS Voltage, $V_{RMS}$   |       |
| UF5400  | 35V   |
| UF5401  | 70V   |
| UF5402  | 140V  |
| UF5404  | 280V  |
| UF5406  | 420V  |
| UF5407  | 560V  |
| UF5408  | 700V  |
| Max. DC Blocking Voltage, $V_{DC}$  |       |
| UF5400  | 50V   |
| UF5401  | 100V  |
| UF5402  | 200V  |
| UF5404  | 400V  |
| UF5406  | 600V  |
| UF5407  | 800V  |
| UF5408  | 1000V |
| Average Rectified Forward Current ( $T_A = +55^\circ\text{C}$ , .375" (9.5mm) Lead Length), $I_{F(AV)}$ |       |
| 3A  |       |
| Peak Forward Surge Current, $I_{FSM}$   |       |
| 8.3ms single half sine wave superimposed on rated load  |       |
| 150A  |       |
| Storage Temperature Range, $T_{stg}$  |       |
| -55° to +150°C  |       |
| Typical Thermal Resistance, Junction-to-Ambient (Note 1), $R_{thJA}$                                    |       |
| 20°C/W  |       |
| Typical Thermal Resistance, Junction-to-Lead (Note 1), $R_{thJL}$                                       |       |
| 8.5°C/W   |       |

Note 1. Thermal resistance from junction to lead and junction to ambient with .375" (9.5mm) lead length, both leads attached to heatsink.

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ , unless otherwise specified)

| Parameter                                       | Symbol   | Test Conditions   | Min                       | Typ | Max | Unit          |               |
|---|----------|---|---------------------------|-----|-----|---------------|---------------|
| Instantaneous Forward Voltage<br>UF5400, UF5401 | $V_F$    | $I_F = 3\text{A}$ , Note 2  | -                         | -   | 1.0 | V             |               |
| UF5402, UF5404                                  |          |   | -                         | -   | 1.0 | V             |               |
| UF5406, UF5407, UF5408                          |          |   | -                         | -   | 1.7 | V             |               |
| DC Reverse Leakage Current<br>All Devices       | $I_R$    | At Rated DC Blocking Voltage  | $T_A = +25^\circ\text{C}$ | -   | -   | 10            | $\mu\text{A}$ |
| UF5400, UF5401                                  |          |   |                           | -   | -   | 75            | $\mu\text{A}$ |
| UF5402, UF5404                                  |          |   | -                         | -   | 75  | $\mu\text{A}$ |               |
| UF5406, UF5407, UF5408                          |          |   | -                         | -   | 200 | $\mu\text{A}$ |               |
| Reverse Recovery Time<br>UF5400, UF5401         | $t_{rr}$ | $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{rr} = 250\text{mA}$ ,<br>$T_J = +25^\circ\text{C}$ | -                         | -   | 50  | ns            |               |
| UF5402, UF5404                                  |          |   | -                         | -   | 50  | ns            |               |
| UF5406, UF5407, UF5408                          |          |   | -                         | -   | 75  | ns            |               |
| Junction Capacitance<br>UF5400, UF5401          | $C_J$    | $V_R = 4\text{V}$ , $f = 1\text{MHz}$   | -                         | 45  | -   | pF            |               |
| UF5402, UF5404                                  |          |   | -                         | 45  | -   | pF            |               |
| UF5406, UF5407, UF5408                          |          |   | -                         | 36  | -   | pF            |               |

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

