

# Power Diodes



## Ultra-Fast Recovery

### Axial

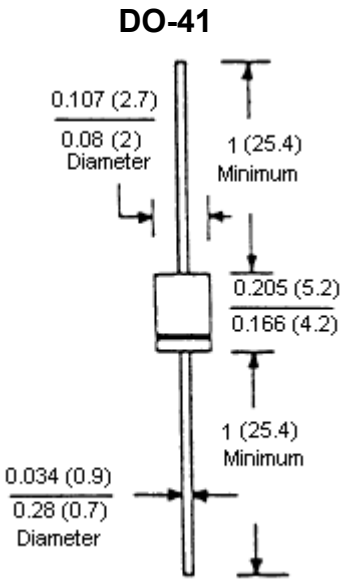


### Features:

- 1 ampere operation at  $T_A = 55^\circ\text{C}$  with no thermal runaway
- Glass passivated chip junction
- Low cost, fast efficient plastic rectifiers
- Ultrafast recovery time for high efficiency
- Low forward voltage
- Low leakage current
- High surge current capability

### Mechanical Data:

|                   |                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| Case              | : JEDEC DO-41 moulded plastic body over passivated chip                                                                 |
| Terminals         | : Plated axial leads, solderable per MIL-STD-750, Method 2026                                                           |
| Mounting position | : Any                                                                                                                   |
| Polarity          | : Colour band denotes cathode end                                                                                       |
| High temperature  | : $250^\circ\text{C}$ / 10 seconds / 0.375 inches, (9.5 mm) lead lengths at soldering guaranteed 5lbs, (2.3 kg) tension |



Dimensions : Millimetres

### Maximum Ratings and Electrical Characteristics

Rating at  $25^\circ\text{C}$  ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load  
For capacitive load, derate current by 20%

| Type Number                                                                                                | UF4001      | UF4002 | UF4003 | UF4004 | UF4005 | UF4006 | UF4007 | Unit   |
|------------------------------------------------------------------------------------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Recurrent Peak Reverse Voltage                                                                     | 50          | 100    | 200    | 400    | 600    | 800    | 1,000  | V      |
| Maximum RMS Voltage                                                                                        | 35          | 70     | 140    | 280    | 420    | 560    | 700    |        |
| Maximum DC Blocking Voltage                                                                                | 50          | 100    | 200    | 400    | 600    | 800    | 1,000  |        |
| Maximum Average Forward Rectified Current 0.375 inches (9.5 mm) Lead Length at T <sub>A</sub> = 55°C       | 1           |        |        |        |        |        |        | A      |
| Peak Forward Surge Current, 8.3 ms Single Half Sinewave Superimposed on Rated Load (JEDEC method)          | 30          |        |        |        |        |        |        |        |
| Maximum Instantaneous Forward Voltage at 1 A                                                               | 1           |        |        |        | 1.7    |        |        | V      |
| Maximum DC Reverse Current at T <sub>A</sub> = 25°C at Rated DC Blocking Voltage at T <sub>A</sub> = 125°C | 10<br>50    |        |        |        |        |        |        | μA     |
| Maximum Reverse Recovery Time (Note 1)                                                                     | 50          |        |        |        | 75     |        |        | -      |
| Typical Junction Capacitance (Note 2)                                                                      | 17          |        |        |        |        |        |        | -      |
| Typical Thermal Resistance (Note 3) RθJA<br>RθJL                                                           | 60<br>15    |        |        |        |        |        |        | °C / W |
| Operating/Storage Temperature Range T <sub>J</sub> , T <sub>STG</sub>                                      | -65 to +150 |        |        |        |        |        |        | °C     |



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### Notes:

1. Reverse recovery test conditions :  $I_F = 0.5 \text{ A}$ ,  $I_R = 1 \text{ A}$ ,  $I_{RR} = 0.25 \text{ A}$
2. Measured at 1 MHz and applied reverse voltage of 4 V dc
3. Thermal resistance from junction to ambient and from junction to lead length 0.375 inches (9.5 mm), PCB mounted

### Ratings and Characteristic Curves

Figure - 1 Maximum Forward Current Derating Curve

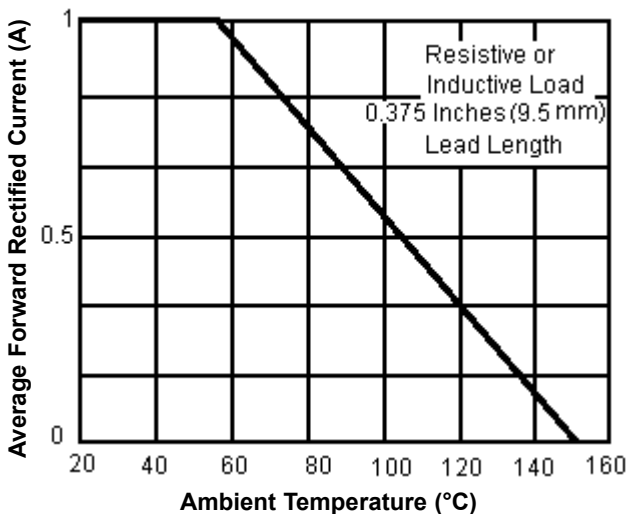


Figure - 2 Maximum Non-Repetitive Peak Forward Surge Current

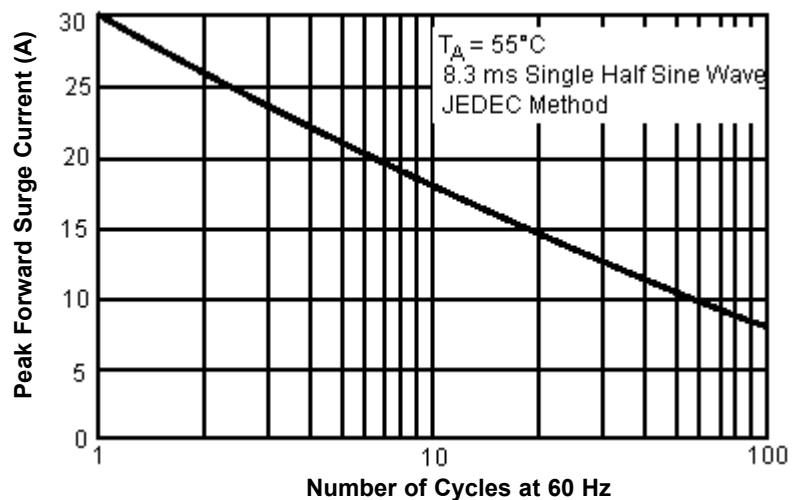


Figure - 3 Typical Reverse Characteristics

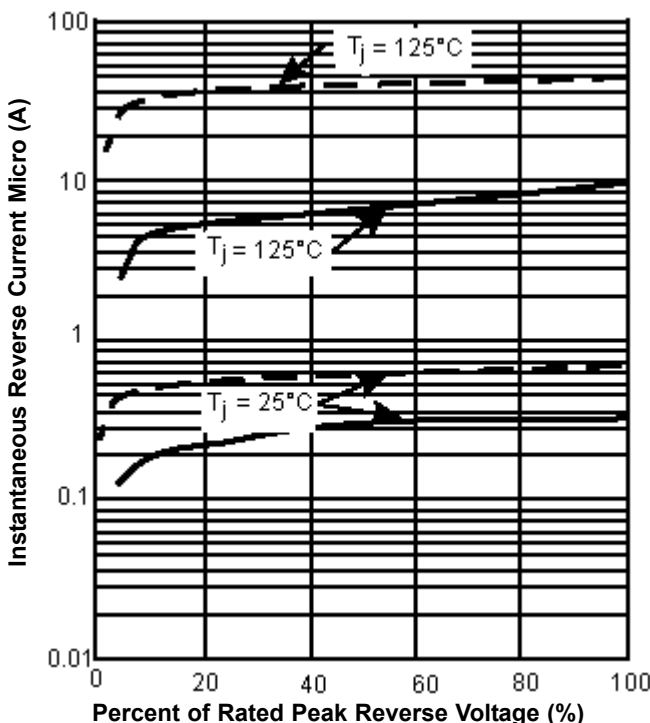
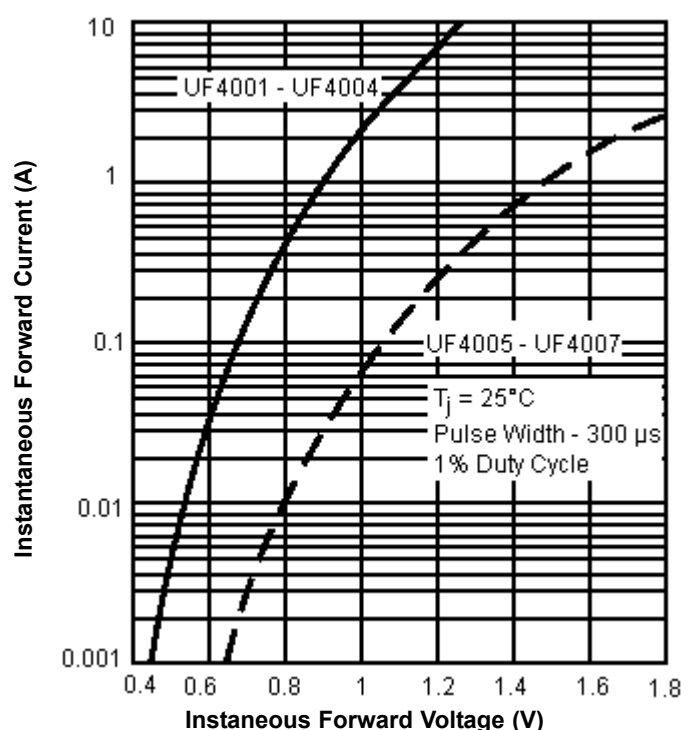


Figure - 4 Typical Instantaneous Forward Characteristics



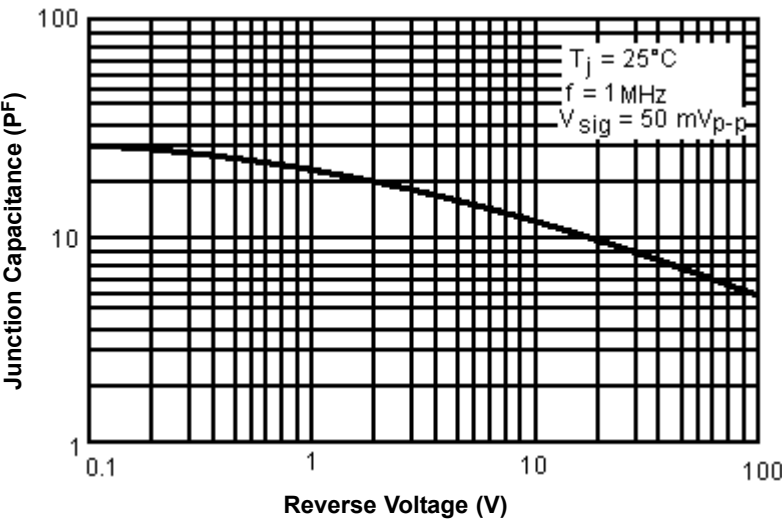
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### Ratings and Characteristic Curves

Figure - 5 Typical Junction Capacitance



### Specification Table

| $I_f$ (av)<br>(A) | $t_{rr}$<br>(ns) | $I_{fsm}$<br>(A) | $V_f$<br>maximum<br>(V) | Length | Diameter | Package | Part Number |
|-------------------|------------------|------------------|-------------------------|--------|----------|---------|-------------|
| 1                 | 50               | 30               | 1                       | 5.2    | 2.7      | DO -41  | UF4001      |
|                   |                  |                  |                         |        |          |         | UF4002      |
|                   |                  |                  |                         |        |          |         | UF4003      |
|                   |                  |                  |                         |        |          |         | UF4004      |
| 1                 | 75               | 30               | 1.7                     | 5.2    | 2.7      | DO -41  | UF4005      |
|                   |                  |                  |                         |        |          |         | UF4006      |
|                   |                  |                  |                         |        |          |         | UF4007      |

Dimensions : Millimetres

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