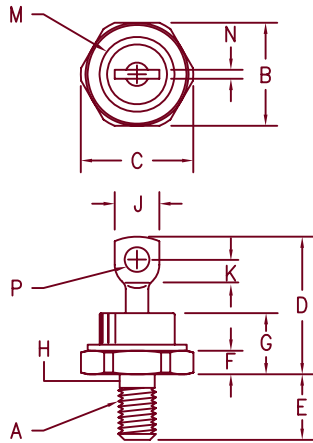


# Ultra Fast Recovery Rectifiers UFR8630 — UFR8650



**Notes:**

1. Full threads within 2 1/2 threads
2. Standard Polarity: Stud is Cathode  
Reverse Polarity: Stud is Anode

| Dim. | Inches  |               | Millimeter |         | Notes |
|------|---------|---------------|------------|---------|-------|
|      | Minimum | Maximum       | Minimum    | Maximum |       |
| A    |         | 1/4-28 UNF 3A |            |         | 1     |
| B    | .667    | .687          | 16.94      | 17.45   |       |
| C    | ---     | .793          | ---        | 20.14   |       |
| D    | ---     | 1.00          | ---        | 25.40   |       |
| E    | .422    | .453          | 10.72      | 11.51   |       |
| F    | .115    | .200          | 2.92       | 5.08    |       |
| G    | ---     | .450          | ---        | 11.43   |       |
| H    | .220    | .249          | 5.59       | 6.32    | 2     |
| J    | .250    | .375          | 6.35       | 9.52    |       |
| K    | .140    | ---           | 3.56       | ---     |       |
| M    | ---     | .667          | ---        | 16.94   | Dia   |
| N    | ---     | .080          | ---        | 2.03    |       |
| P    | .140    | .175          | 3.56       | 4.44    | Dia   |

## D0203AB (D05)

| Microsemi Catalog Number | Working Peak Reverse Voltage | Peak Reverse Voltage |
|--------------------------|------------------------------|----------------------|
| UFR8630*                 | 300V                         | 300V                 |
| UFR8640*                 | 400V                         | 400V                 |
| UFR8650*                 | 500V                         | 500V                 |

\*Add Suffix R For Reverse Polarity

- Ultra Fast Recovery Rectifier
- 175°C Junction Temperature
- 85 Amps current rating
- $V_{RRM}$  300 to 500 Volts
- $t_{RR}$  100 nsec maximum

### Electrical Characteristics

|                              |                     |   |
|------------------------------|---------------------|---|
| Average forward current      | $I_{F(AV)}$ 85 Amps | Square wave, $R_{\theta JC} = 0.6^{\circ}C/W$ , $T_C = 130^{\circ}C$<br>8.3 ms, half sine, $T_J = 175^{\circ}C$ |
| Maximum surge current        | $I_{FSM}$ 1500 Amps |   |
| Max peak forward voltage     | $V_{FM}$ 1.25 Volts | $I_{FM} = 85A$ ; $T_J = 25^{\circ}C$ *  |
| Max reverse recovery time    | $t_{RR}$ 100 ns     | $I_F = 1A$ , $V_R = 30V$ , $di/dt = 25A/\mu S$  |
| Max peak reverse current     | $I_{RM}$ 5 mA       | $V_{RRM}$ , $T_J = 125^{\circ}C$  |
| Max peak reverse current     | $I_{RM}$ 30 $\mu A$ | $V_{RRM}$ , $T_J = 25^{\circ}C$   |
| Typical Junction Capacitance | $C_J$ 180 pF        | $V_R = 10V$ , $f = 1MHz$ , $T_J = 25^{\circ}C$  |

\*Pulse test: Pulse width 300  $\mu sec$ , Duty cycle 2%

### Thermal and Mechanical Characteristics

|                               |                 |                                 |
|-------------------------------|-----------------|---------------------------------|
| Storage temp range            | $T_{STG}$       | -65°C to 175°C                  |
| Operating junction temp range | $T_J$           | -65°C to 175°C                  |
| Max thermal resistance        | $R_{\theta JC}$ | 0.6°C/W Junction to case        |
| Mounting torque               |                 | 25-30 inch pounds               |
| Weight                        |                 | .52 ounces (14.7 grams) typical |



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# UFR8630 — UFR8650

Figure 1  
Typical Forward Characteristics

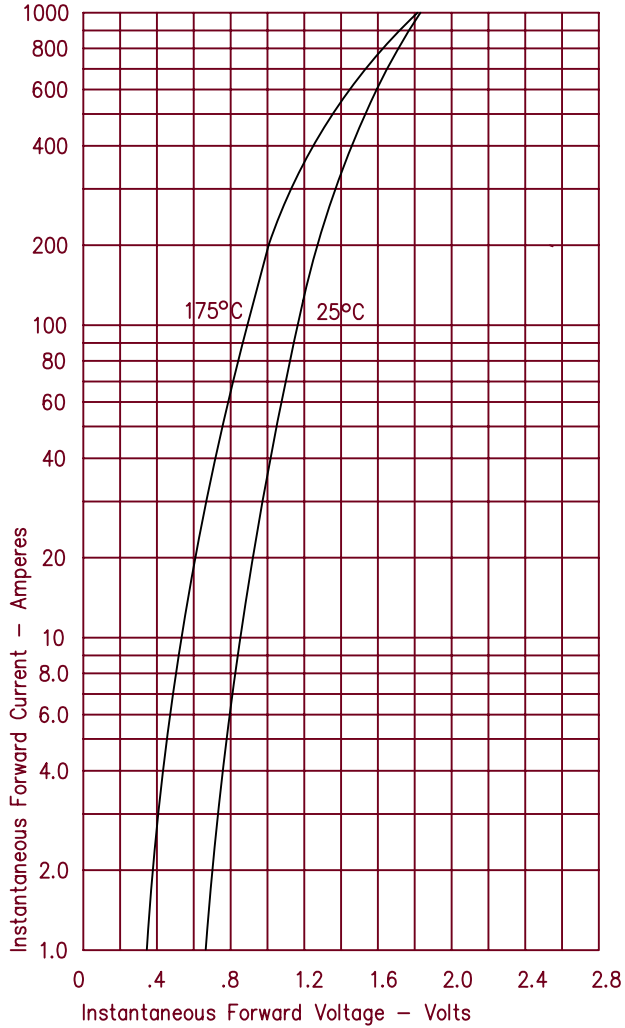


Figure 3  
Typical Junction Capacitance

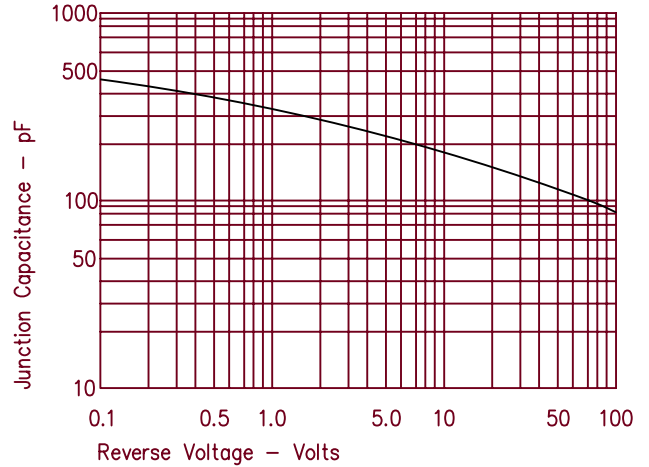


Figure 4  
Forward Current Derating

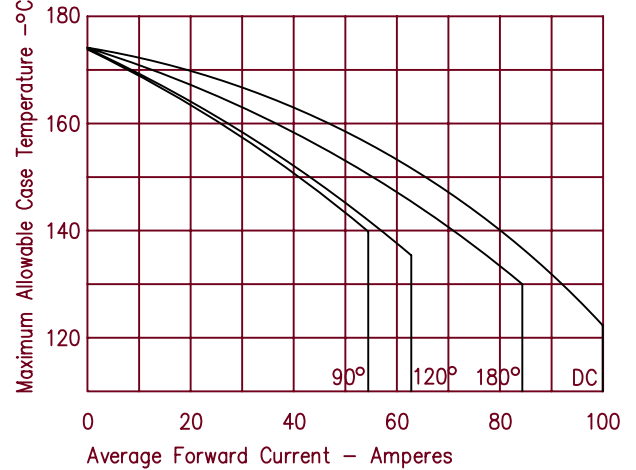


Figure 2  
Typical Reverse Characteristics

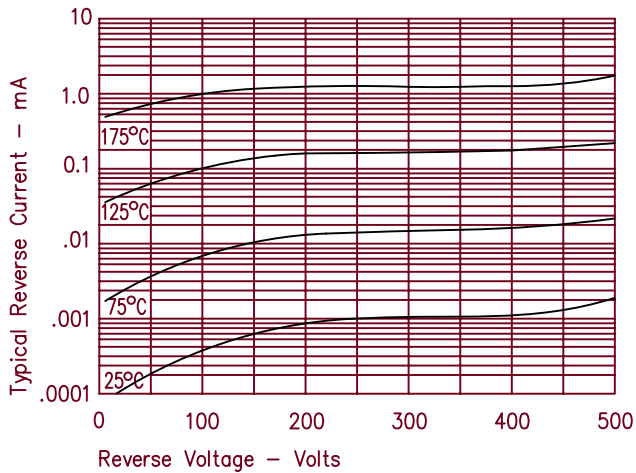


Figure 5  
Maximum Forward Power Dissipation

