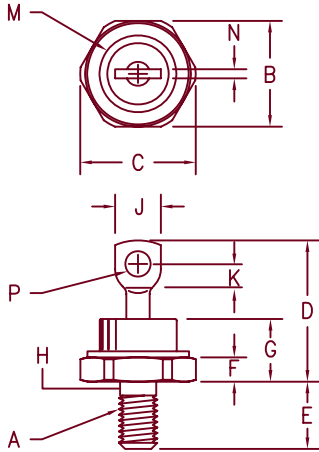


# Fast Recovery Rectifier

## 1N3899 — 1N3903



- Notes:
1. 1/4-28 UNF3A threads
  2. Full threads within 2 1/2 threads
  3. Standard Polarity: Stud is Cathode

| Dim. | Inches  |         | Millimeter |         | Notes |
|------|---------|---------|------------|---------|-------|
|      | Minimum | Maximum | Minimum    | Maximum |       |
| A    | ---     | ---     | ---        | ---     | 1     |
| B    | .669    | .688    | 16.99      | 17.48   |       |
| C    | ---     | .794    | ---        | 20.16   |       |
| D    | .750    | 1.000   | 19.05      | 25.40   |       |
| E    | .422    | .453    | 10.72      | 11.51   |       |
| F    | .115    | .200    | 2.92       | 5.08    |       |
| G    | ---     | .450    | ---        | 11.43   |       |
| H    | .220    | .249    | 5.58       | 6.32    | 2     |
| J    | .250    | .375    | 6.35       | 9.53    |       |
| K    | .156    | ---     | 3.96       | ---     |       |
| M    | ---     | .667    | ---        | 16.94   | Dia.  |
| N    | .030    | .080    | .760       | 2.03    |       |
| P    | .140    | .175    | 3.56       | 4.45    | Dia.  |

D0203AB (D05)

| Microsemi Catalog Number | Working Peak Reverse Voltage | Repetitive Peak Reverse Voltage |
|--------------------------|------------------------------|---------------------------------|
| 1N3899*                  | 50V                          | 50V                             |
| 1N3900*                  | 100V                         | 100V                            |
| 1N3901*                  | 200V                         | 200V                            |
| 1N3902*                  | 300V                         | 300V                            |
| 1N3903*                  | 400V                         | 400V                            |

\*Add the Suffix R for reverse polarity

- Fast Recovery Rectifier
- 150°C Junction Temperature
- 20 Amp current rating
- VRRM 50 to 400 Volts

### Electrical Characteristics

|                           |                     |   |
|---------------------------|---------------------|---|
| Average forward current   | $I_F(AV)$ 20 Amps   | $T_C = 100^\circ C$ , Square wave, $R_{\theta JC} = 1.8^\circ C/W$<br>8.3 ms, half_sine $T_C = 100^\circ C$ |
| Maximum surge current     | $I_{FSM}$ 225 Amps  |   |
| Max peak forward voltage  | $V_{FM}$ 1.40 Volts | $I_{FM} = 63A$ $T_J = 25^\circ C^*$   |
| Max peak reverse current  | $I_{RM}$ 6 mA       | $V_{RRM}$ , $T_J = 150^\circ C$   |
| Max peak reverse voltage  | $I_{RM}$ 50 $\mu A$ | $V_{RRM}$ , $T_J = 25^\circ C$  |
| Max reverse recovery time | $t_{RR}$ 200 ns     | $I_F = 1A$ dc, $V_R = 30V$ , $di/dt = 25A/\mu s$  |
| Max junction capacitance  | $C_J$ 150 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            | TSTG            | -65°C to 175°C                  |
| Operating junction temp range | $T_J$           | -65°C to 150°C                  |
| Max thermal resistance        | $R_{\theta JC}$ | 1.8°C/W Junction to case        |
| Mounting torque               |                 | 25-30 inch pounds               |
| Weight                        |                 | .54 ounces (15.3 grams) typical |

# 1N3899 — 1N3903

Figure 1  
Typical Forward Characteristics

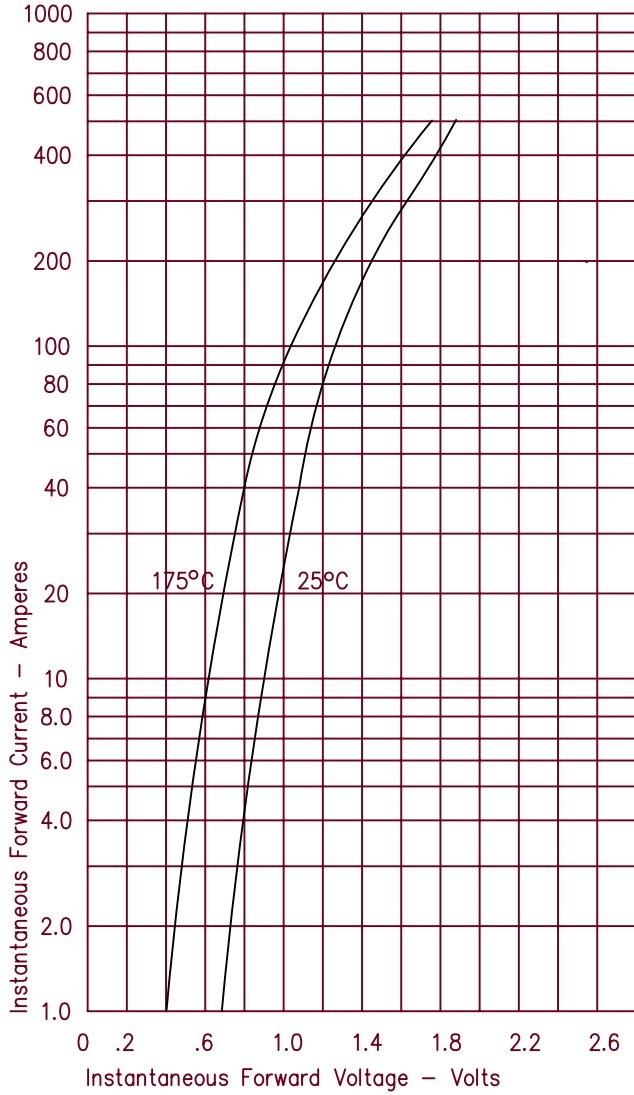


Figure 3  
Typical Junction Capacitance

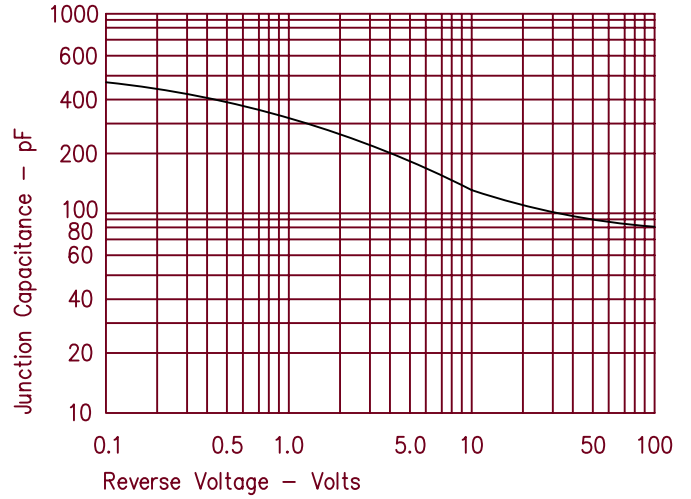


Figure 4  
Forward Current Derating

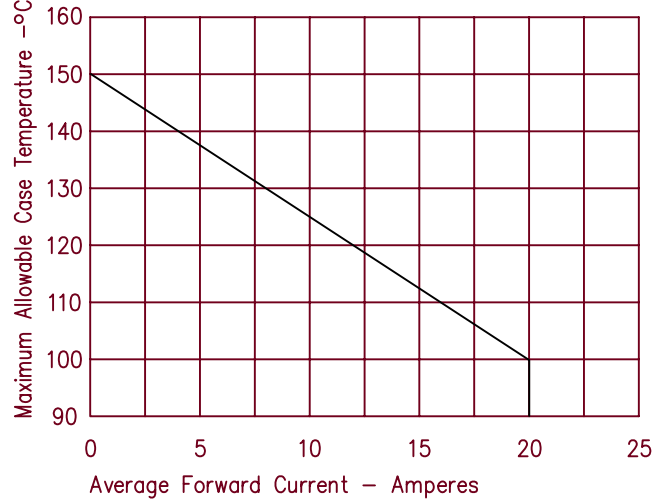


Figure 2  
Typical Reverse Characteristics

