



Micro Commercial Components  
 21201 Itasca Street Chatsworth  
 CA 91311  
 Phone: (818) 701-4933  
 Fax: (818) 701-4939

**1N4942  
 THRU  
 1N4948**

**1 Amp Fast Recovery  
 Rectifier  
 200 to 1000 Volts**

**Features**

- Low Leakage Current
- Metalurgically Bonded Construction
- Low Cost
- Fast Switching For High Efficiency

**Maximum Ratings**

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance; 50°C/W Junction To Ambient

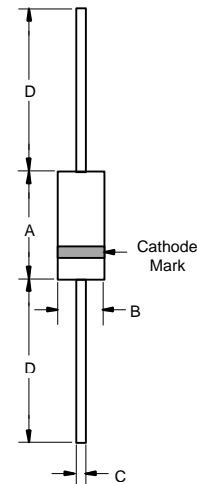
| Microsemi Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|--------------------------|----------------|--|---------------------|-----------------------------|
| 1N4942                   | ---            | 200V                                   | 140V                | 200V                        |
| 1N4944                   | ---            | 400V                                   | 280V                | 400V                        |
| 1N4946                   | ---            | 600V                                   | 420V                | 600V                        |
| 1N4947                   | ---            | 800V                                   | 560V                | 800V                        |
| 1N4948                   | ---            | 1000V                                  | 700V                | 1000V                       |

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

|   |             |                |   |
|---|-------------|----------------|---|
| Average Forward Current                                 | $I_{F(AV)}$ | 1.0A           | $T_A = 55^\circ\text{C}$                              |
| Peak Forward Surge Current                              | $I_{FSM}$   | 25A            | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | 1.3V           | $I_{FM} = 1.0A$ ;<br>$T_A = 25^\circ\text{C}^*$       |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 5.0µA<br>500µA | $T_J = 25^\circ\text{C}$<br>$T_J = 175^\circ\text{C}$ |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 150ns          | $I_F = 0.5A$ ,<br>$I_R = 1.0A$ ,<br>$I_{rr} = 0.25A$  |
| 1N4942-4944   |             | 250ns          |   |
| 1N4946-4947<br>1N4948                                   |             | 500ns          |   |
| Typical Junction Capacitance                            | $C_J$       | 15pF           | Measured at<br>1.0MHz,<br>$V_R = 4.0V$                |

\*Pulse test: Pulse width 300 µsec, Duty cycle 2%

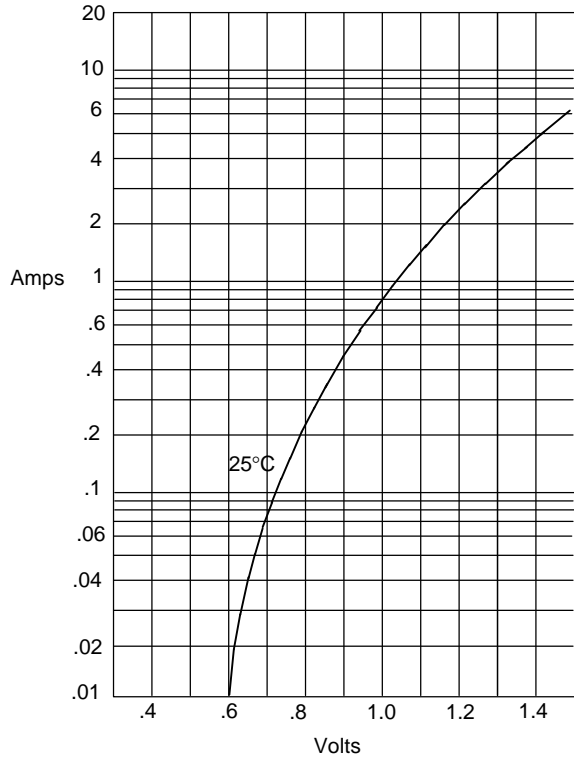
**DO-41**



| DIM | INCHES |      | MM    |      | NOTE |
|-----|--------|------|-------|------|------|
|     | MIN    | MAX  | MIN   | MAX  |      |
| A   | .166   | .205 | 4.10  | 5.20 |      |
| B   | .080   | .107 | 2.00  | 2.70 |      |
| C   | .028   | .034 | .70   | .90  |      |
| D   | 1.000  | ---  | 25.40 | ---  |      |

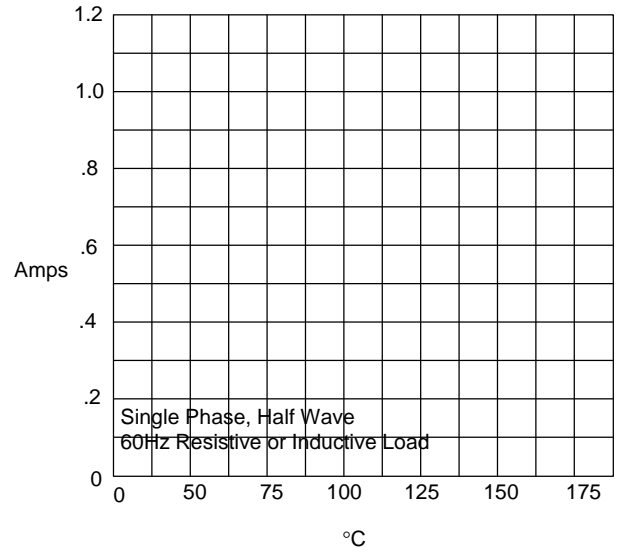
# 1N4942 thru 1N4948

Figure 1  
Typical Forward Characteristics



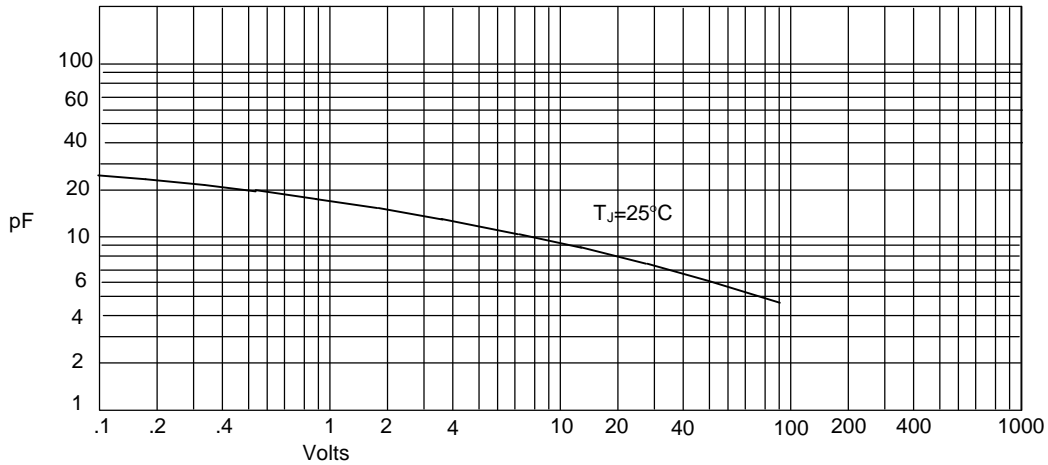
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



Average Forward Rectified Current - Amperes *versus*  
Ambient Temperature - °C

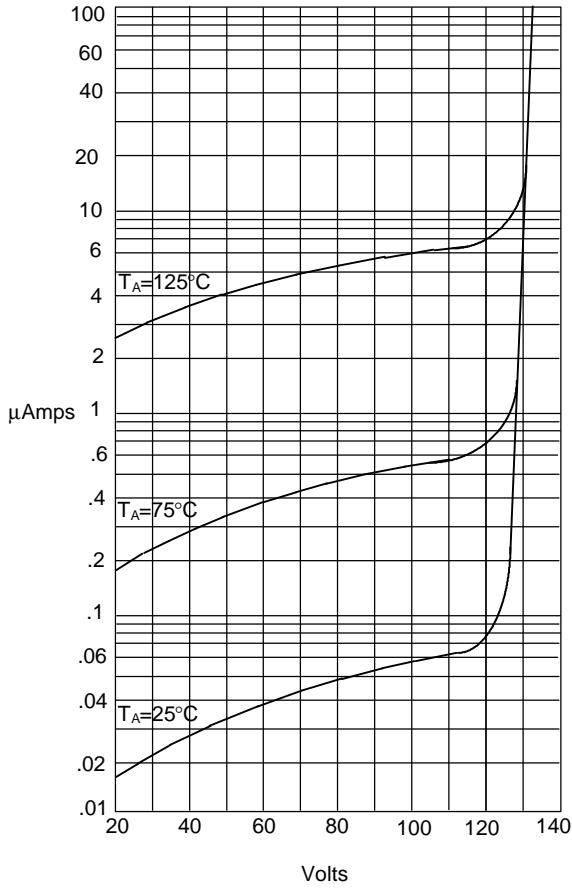
Figure 3  
Junction Capacitance



Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

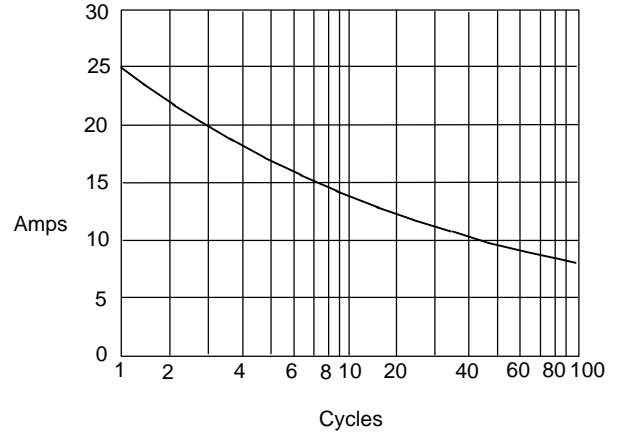
# 1N4942 thru 1N4948

Figure 4  
Typical Reverse Characteristics



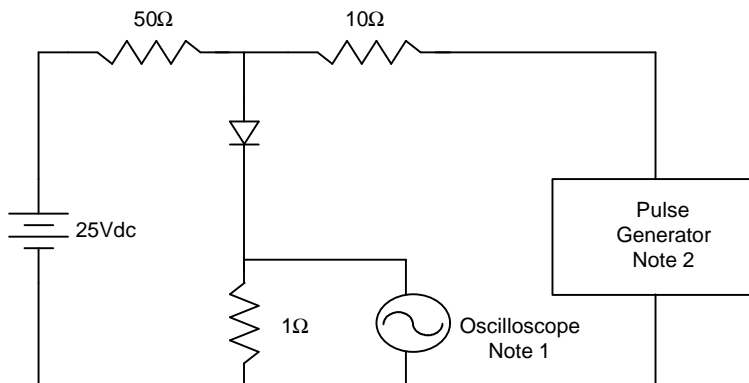
Instantaneous Reverse Leakage Current - MicroAmperes versus  
Percent Of Rated Peak Reverse Voltage - Volts

Figure 5  
Non-Repetitive Peak Forward Surge Current



Peak Forward Surge Current - Amperes versus  
Number Of Cycles At 60Hz - Cycles

Figure 6  
Reverse Recovery Time Characteristic And Test Circuit Diagram



- Notes:
1. Rise Time = 7ns max.  
Input impedance = 1 megohm, 22pF
  2. Rise Time = 10ns max.  
Source impedance = 50 ohms
  3. Resistors are non-inductive

