

# 1N4942GP THRU 1N4948GP

## 1 Amp Glass Passivated Fast Recovery Rectifier 200 - 1000 Volts

### Features

- Halogen free available upon request by adding suffix "-HF"
- Low Leakage Current and Fast Switching
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Glass Passivated Junction
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)

### 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 |
|--------------------------|----------------|----------------------------------------|---------------------|-----------------------------|
| 1N4942GP                 | 1N4942GP       | 200V                                   | 140V                | 200V                        |
| 1N4944GP                 | 1N4944GP       | 400V                                   | 280V                | 400V                        |
| 1N4946GP                 | 1N4946GP       | 600V                                   | 420V                | 600V                        |
| 1N4947GP                 | 1N4947GP       | 800V                                   | 560V                | 800V                        |
| 1N4948GP                 | 1N4948GP       | 1000V                                  | 700V                | 1000V                       |

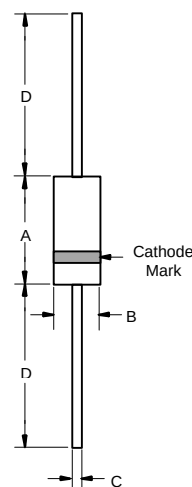
### Electrical Characteristics @ 25°C Unless Otherwise Specified

|                                                                       |             |                         |                                                       |
|-----------------------------------------------------------------------|-------------|-------------------------|-------------------------------------------------------|
| 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>200μA          | $T_J = 25^\circ\text{C}$<br>$T_J = 150^\circ\text{C}$ |
| Maximum Reverse Recovery Time<br>1N4942-4944<br>1N4946-4947<br>1N4948 | $T_{rr}$    | 150ns<br>250ns<br>500ns | $I_F = 0.5A$ ,<br>$I_R = 1.0A$ ,<br>$I_{rr} = 0.25A$  |
| 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%

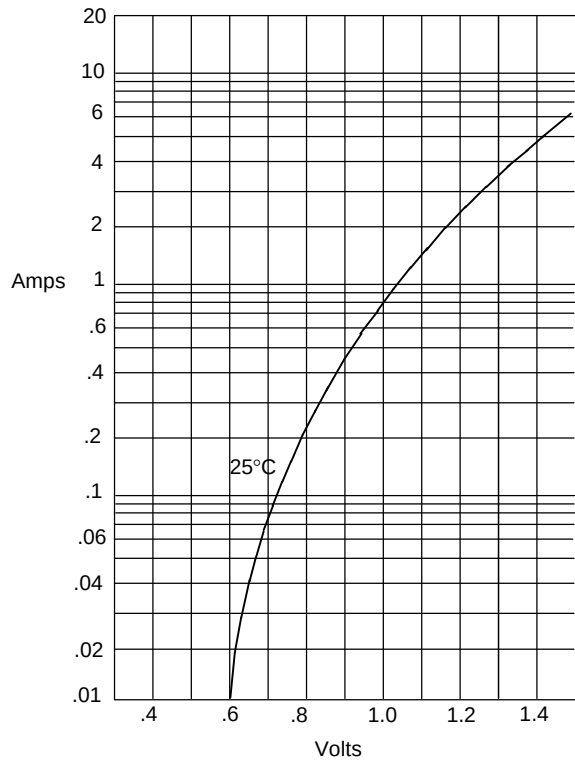
Note: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

### DO-41



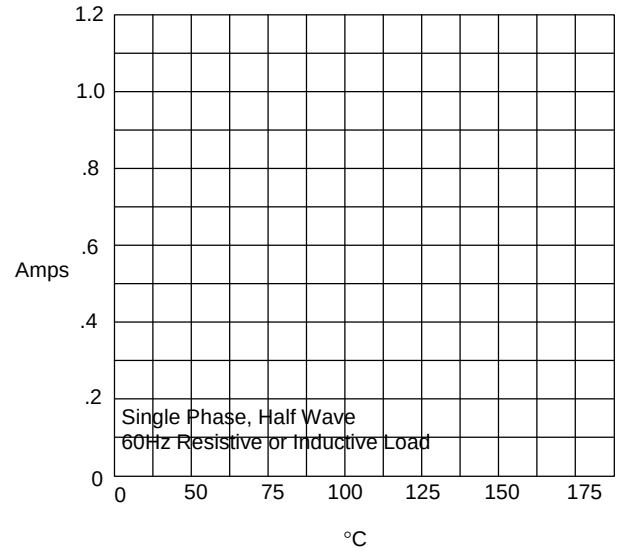
| DIM | INCHES |      | MM    |      | NOTE |
|-----|--------|------|-------|------|------|
|     | MIN    | MAX  | MIN   | MAX  |      |
| A   | .166   | .205 | 4.10  | 5.20 |      |
| B   | .080   | .107 | 2.00  | 2.70 |      |
| C   | .028   | .034 | .70   | .90  |      |
| D   | 1.000  | ---  | 25.40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

Figure 1  
Typical Forward Characteristics



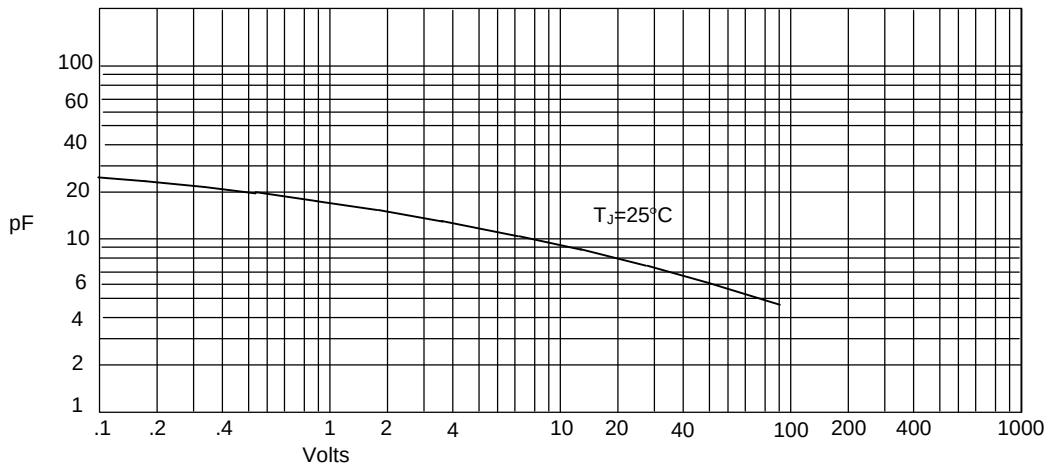
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



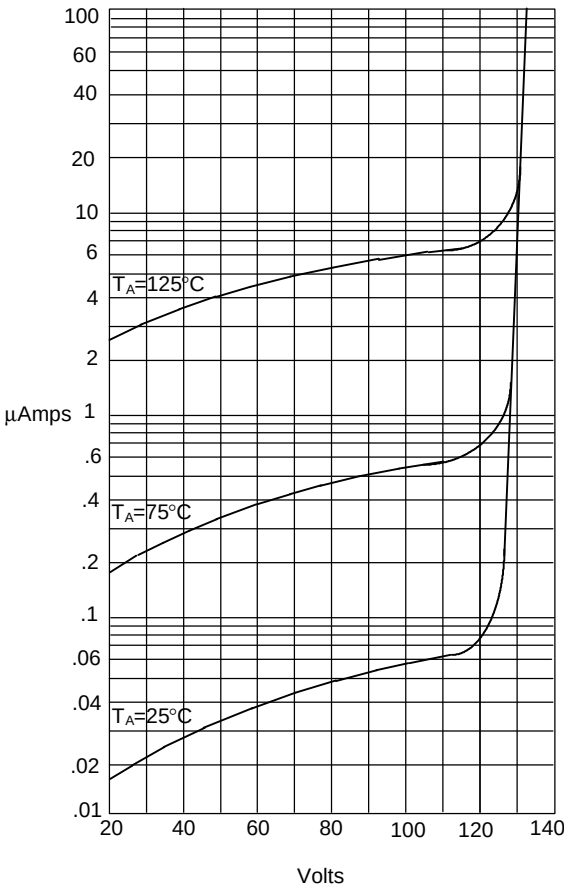
Average Forward Rectified Current - Amperes versus  
Ambient Temperature - °C

Figure 3  
Junction Capacitance



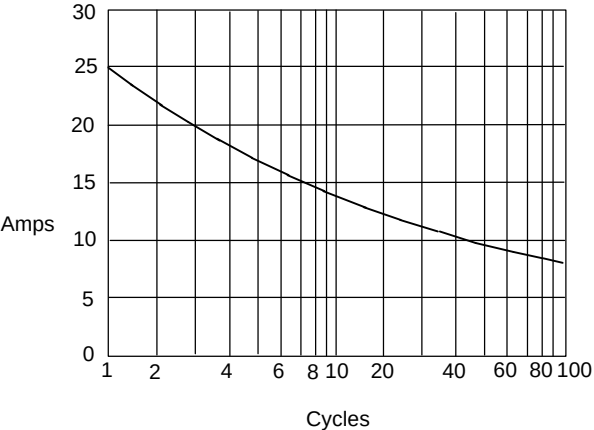
Junction Capacitance - pF versus  
Reverse Voltage - Volts

Figure 4  
Typical Reverse Characteristics



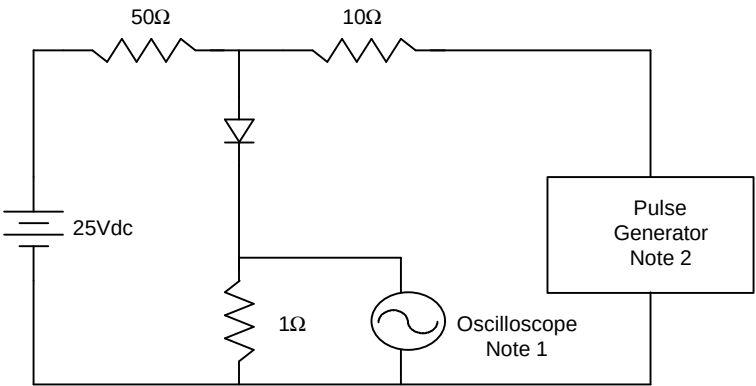
Instantaneous Reverse Leakage Current - MicroAmpere *versus*  
Percent Of Rated Peak Reverse Voltage - Volts

Figure 5  
Non-Repetitive Peak Forward Surge Current

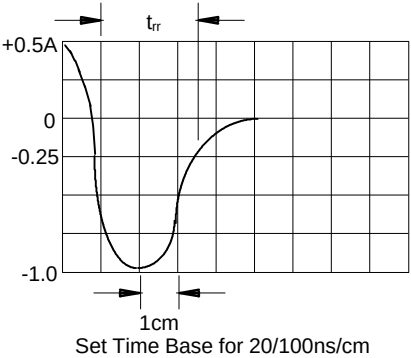


Peak Forward Surge Current - Amperes *versus*  
Number Of Cycles At 60Hz - Cycles

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





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## Ordering Information :

| Device         | Packing                      |
|----------------|------------------------------|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel        |
| Part Number-AP | Ammo Packing: 5Kpcs/Ammo Box |
| Part Number-BP | Bulk: 50Kpcs/Carton          |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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