



Changshu Talent  
Semiconductors Co.,Ltd  
Tel:0086-512-52851998  
Fax:0086-512-52153129

# FR101 THRU FR107

## Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Low Forward Voltage Drop
- High Current Capability
- Fast Switching Speed For High Efficiency
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## Maximum Ratings

- Typical Thermal Resistance 50°C/W(Rthja)
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C

| Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|----------------|----------------|--|---------------------|-----------------------------|
| FR101          | FR101          | 50V                                    | 35V                 | 50V                         |
| FR102          | FR102          | 100V                                   | 70V                 | 100V                        |
| FR103          | FR103          | 200V                                   | 140V                | 200V                        |
| FR104          | FR104          | 400V                                   | 280V                | 400V                        |
| FR105          | FR105          | 600V                                   | 420V                | 600V                        |
| FR106          | FR106          | 800V                                   | 560V                | 800V                        |
| FR107          | FR107          | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

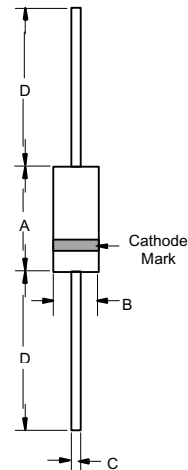
|   |             |  |  |
|---|-------------|--|--|
| Average Forward Current                                 | $I_{F(AV)}$ | 1 A                                    | $T_A = 55^\circ\text{C}$                                     |
| Peak Forward Surge Current                              | $I_{FSM}$   | 30A                                    | 8.3ms, half sine   |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | 1.3V                                   | $I_{FM} = 1.0\text{A};$<br>$T_A = 25^\circ\text{C}$          |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 5.0 $\mu\text{A}$<br>100 $\mu\text{A}$ | $T_A = 25^\circ\text{C}$<br>$T_A = 100^\circ\text{C}$        |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 150ns<br>250ns<br>500ns                | $I_F=0.5\text{A}, I_R=1.0\text{A},$<br>$I_{rr}=0.25\text{A}$ |
| FR101-104<br>FR105<br>FR106-107                         |             |  |  |
| Typical Junction Capacitance                            | $C_J$       | 15pF                                   | Measured at<br>1.0MHz, $V_R=4.0\text{V}$                     |

\*Pulse Test: Pulse Width 300 $\mu\text{sec}$ , Duty Cycle 1%

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

## 1 Amp Silicon Rectifier 50 to 1000 Volts

### DO-41

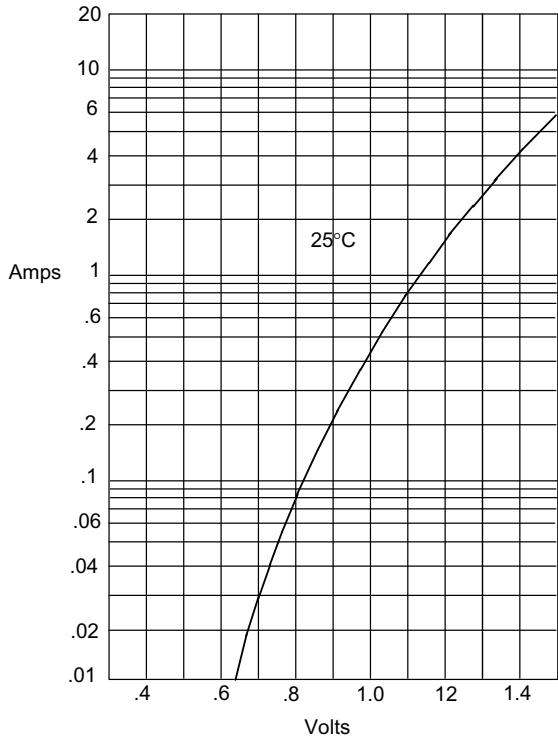


| DIM | DIMENSIONS |      |       |      | NOTE |
|-----|------------|------|-------|------|------|
|     | INCHES     |      | MM    |      |      |
|     | MIN        | MAX  | MIN   | MAX  |      |
| A   | .166       | .205 | 4.10  | 5.20 |      |
| B   | .080       | .107 | 2.00  | 2.70 |      |
|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



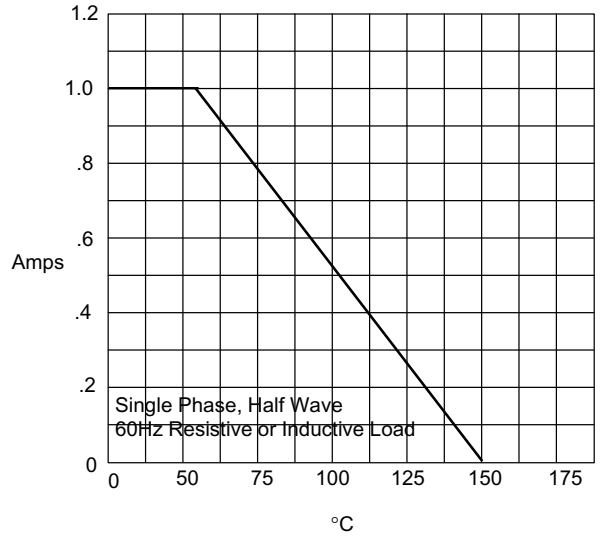
# FR101 thru FR107

Figure 1  
Typical Forward Characteristics



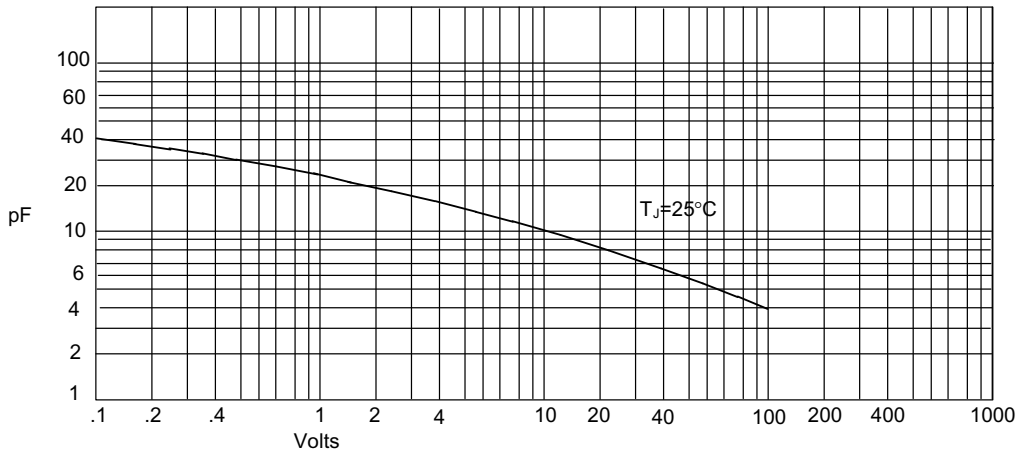
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



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

Figure 3  
Junction Capacitance

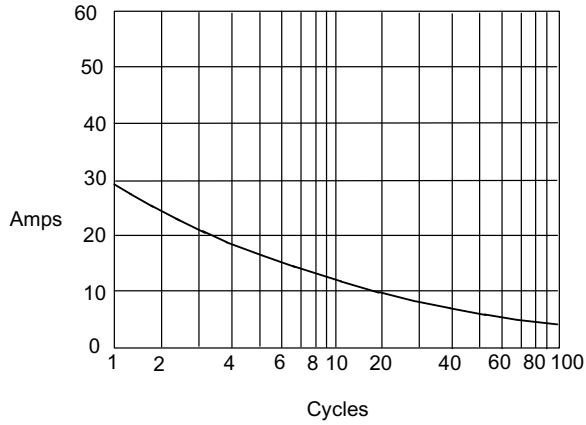


Junction Capacitance - pF *versus*  
Reverse Voltage - Volts



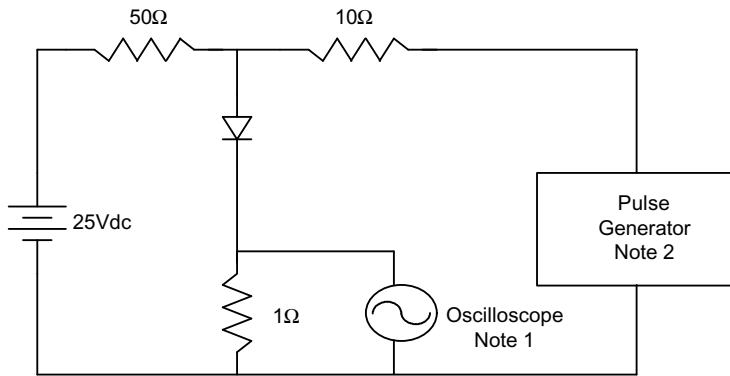
# FR101 thru FR107

Figure 4  
Peak Forward Surge Current



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

Figure 5  
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

