



Micro Commercial Components  
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# SF31 THRU SF38

## Features

- High Surge Capability
- Low Forward Voltage Drop
- High Current Capability
- High Reliability

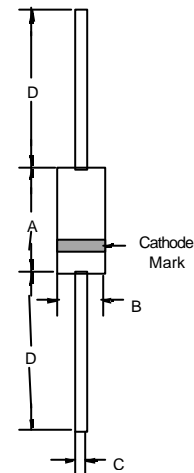
## 3.0 Amp Super Fast Rectifier 50 to 600 Volts

## Maximum Ratings

- Operating Temperature: -55°C to +125°C
- Storage Temperature: -55°C to +150°C
- For capacitive load, derate current by 20%

| MCC Part Number | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|--|---------------------|-----------------------------|
| SF31            | 50V                                    | 35V                 | 50V                         |
| SF32            | 100V                                   | 70V                 | 100V                        |
| SF33            | 150V                                   | 105V                | 150V                        |
| SF34            | 200V                                   | 140V                | 200V                        |
| SF35            | 300V                                   | 210V                | 300V                        |
| SF36            | 400V                                   | 280V                | 400V                        |
| SF38            | 600V                                   | 420V                | 600V                        |

## DO-201AD



## Electrical Characteristics @ 25°C Unless Otherwise Specified

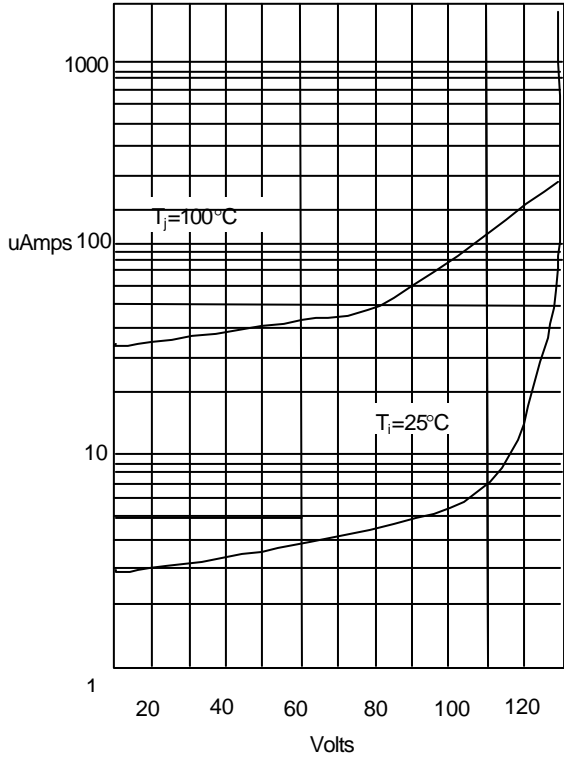
|   |             |                                |   |
|---|-------------|--------------------------------|---|
| Average Forward Current                                 | $I_{F(AV)}$ | 3.0 A                          | $T_C = 55^\circ\text{C}$                                  |
| Peak Forward Surge Current                              | $I_{FSM}$   | 100A                           | 8.3ms, half sine  |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | SF31-SF34<br>SF35-SF36<br>SF38 | $I_{FM} = 3.0\text{A};$<br>$T_C = 25^\circ\text{C}$       |
|   |             | .95V                           |   |
|   |             | 1.3V<br>1.7V                   |   |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 5.0µA<br>100µA                 | $T_C = 25^\circ\text{C}$<br>$T_C = 100^\circ\text{C}$     |
| Typical Junction Capacitance                            | $C_J$       | 100pF<br>80pF                  | Measured at<br>1.0MHz, $V_R=4.0\text{V}$                  |
|   |             |                                |   |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 35ns                           | $I_F=0.5\text{A}, I_R=1.0\text{A},$<br>$I_T=0.25\text{A}$ |

\*Pulse Test: Pulse Width 300µsec, Duty Cycle 1%

| DIM | DIMENSIONS |      |       |      | NOTE |
|-----|------------|------|-------|------|------|
|     | INCHES     |      | MM    |      |      |
|     | MIN        | MAX  | MIN   | MAX  |      |
| A   | ---        | .370 | ---   | 9.50 |      |
| B   | ---        | .250 | ---   | 6.40 |      |
| C   | .048       | .052 | 1.20  | 1.30 |      |
| D   | 1.000      | ---  | 25.40 | ---  |      |

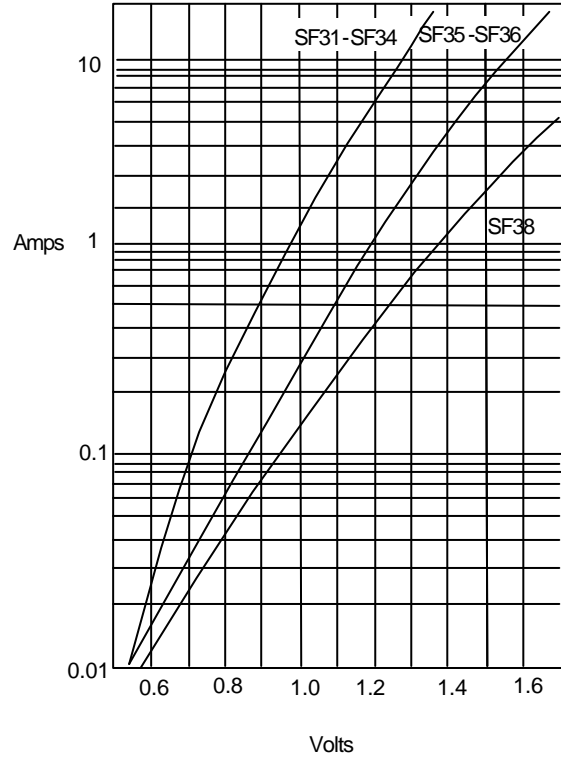
# SF31 thru SF38

Figure 1  
Typical Reverse Characteristics



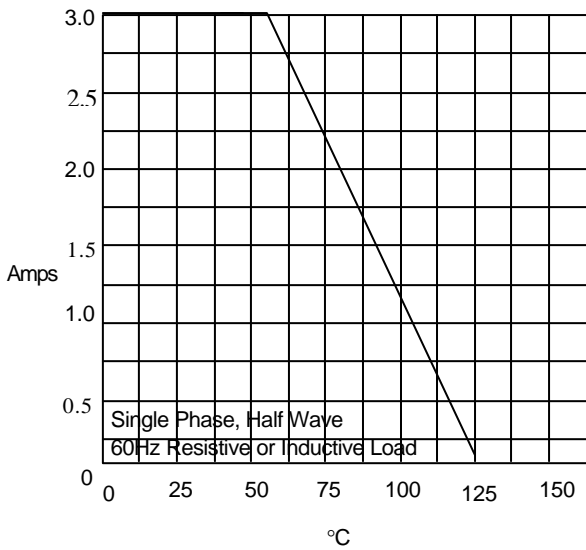
Instantaneous Reverse Current - uAmperes versus  
Percent of Rated Peak Reverse Voltage - %

Figure 2  
Typical Forward Characteristics



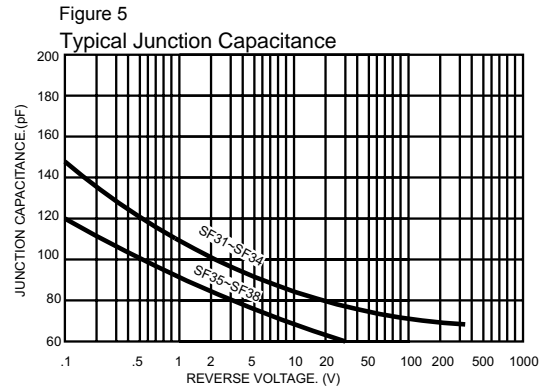
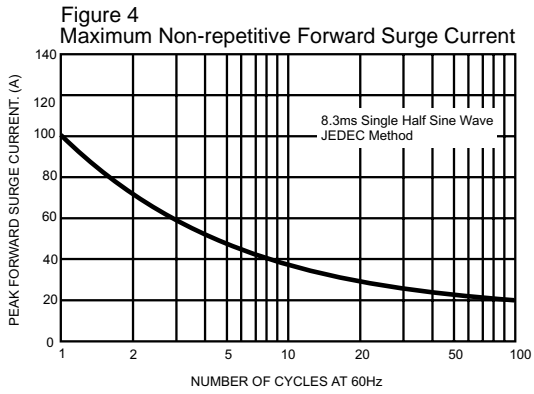
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 3  
Forward Derating Curve

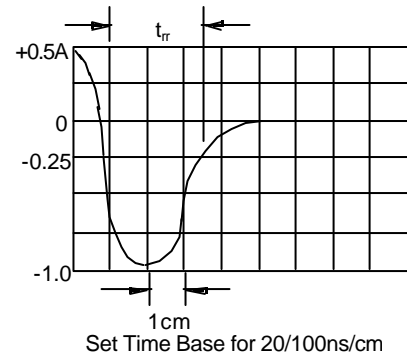
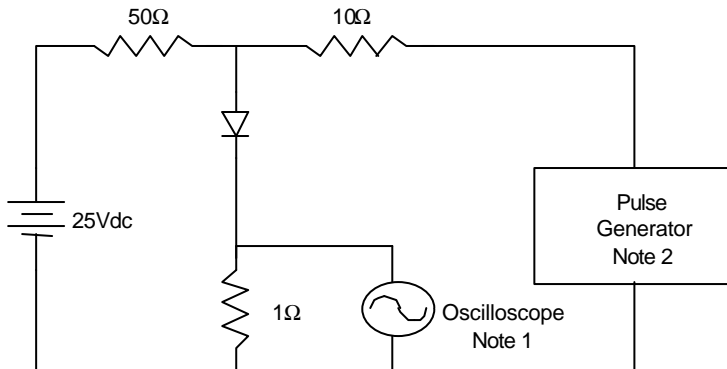


Average Forward Rectified Current Per Leg - Amperes versus  
Case Temperature - °C

# SF31 thru SF38



**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