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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Micro Commercial Components



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# SF31 THRU SF38

## 3.0 Amp Super Fast Rectifier 50 to 600 Volts

### Features

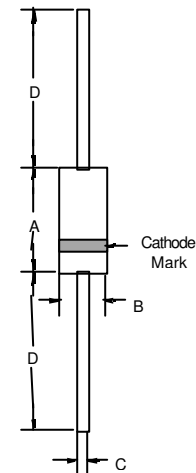
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- High Surge Capability
- Marking: Type Number
- Halogen free available upon request by adding suffix "-HF"

### 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

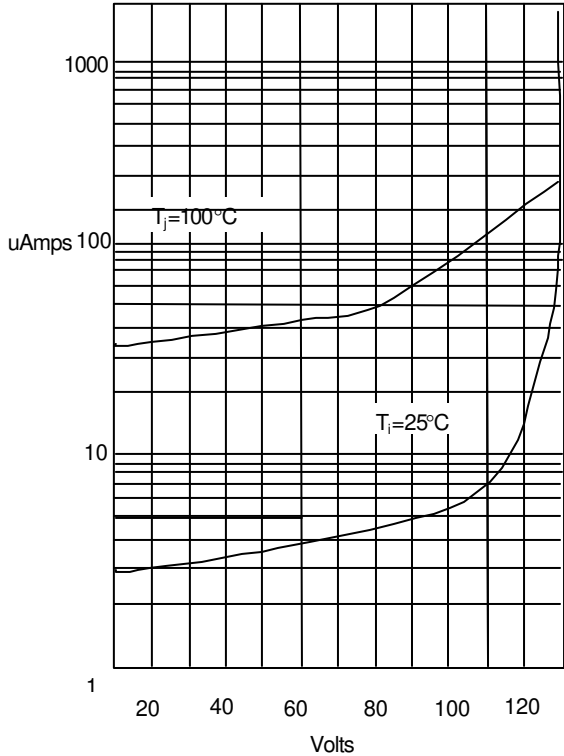
|   |             |                                |   |
|---|-------------|--------------------------------|---|
| Average Forward Current                                 | $I_{F(AV)}$ | 3.0 A                          | $T_C = 55^\circ\text{C}$                                  |
| Peak Forward Surge 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                           |   |
|   |             | 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>$I_T=0.25\text{A}$ |

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

| DIM | DIMENSIONS |      |       |      | NOTE |
|-----|------------|------|-------|------|------|
|     | INCHES     |      | MM    |      |      |
|     | MIN        | MAX  | MIN   | MAX  |      |
| A   | .287       | .374 | 7.30  | 9.50 |      |
| B   | .189       | .208 | 4.80  | 5.30 |      |
| C   | .048       | .052 | 1.20  | 1.30 |      |
| D   | 1.000      | ---  | 25.40 | ---  |      |

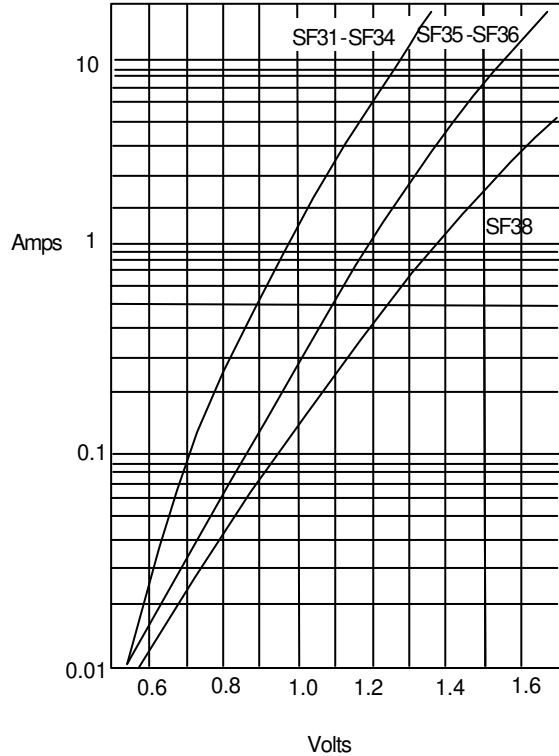
# SF31 thru SF38

Figure 1  
Typical Reverse Characteristics



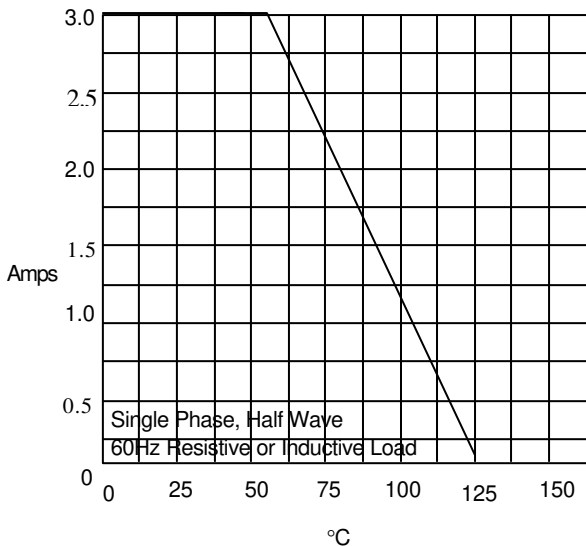
Instantaneous Reverse Current - uAmperes versus  
Percent of Rated Peak Reverse Voltage - %

Figure 2  
Typical Forward Characteristics



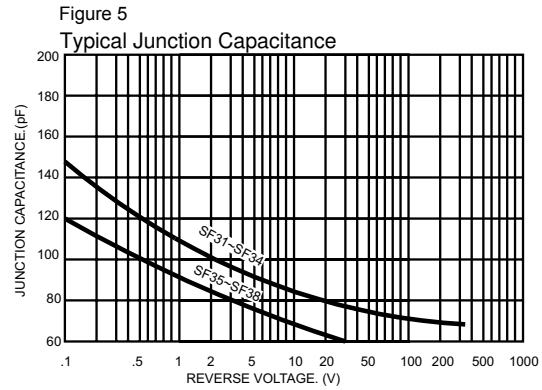
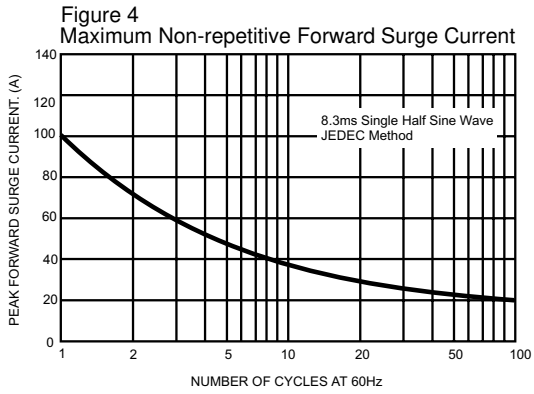
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 3  
Forward Derating Curve

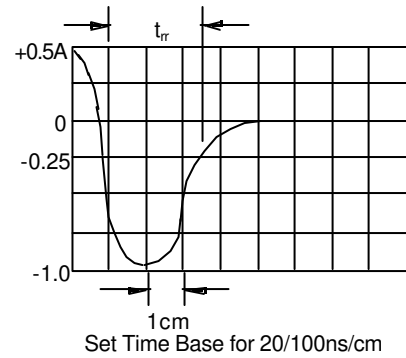
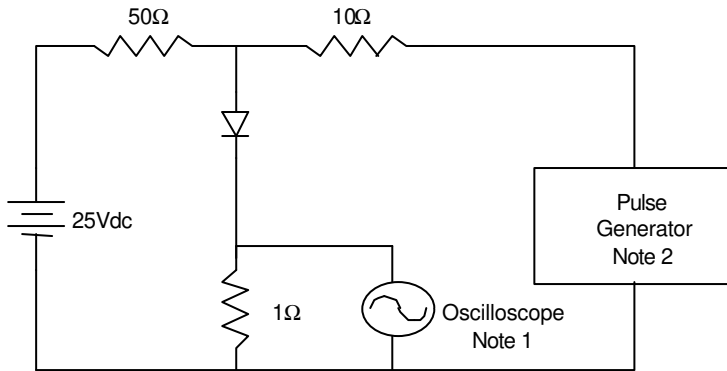


Average Forward Rectified Current Per Leg - Amperes versus  
Case Temperature -  $^\circ\text{C}$

# 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



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## Ordering Information :

| Device         | Packing                        |
|----------------|--------------------------------|
| Part Number-TP | Tape&Reel: 1.2Kpcs/Reel        |
| Part Number-AP | Ammo Packing: 1.2Kpcs/Ammo Box |
| Part Number-BP | Bulk: 12Kpcs/Carton            |

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

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