



Micro Commercial Components



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20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

## SF21 THRU SF28

## 2.0 Amp Super Fast Rectifier 50 to 600 Volts

### Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Low forward voltage drop
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- 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 |
|-----------------|----------------------------------------|---------------------|-----------------------------|
| SF21            | 50V                                    | 35V                 | 50V                         |
| SF22            | 100V                                   | 70V                 | 100V                        |
| SF23            | 150V                                   | 105V                | 150V                        |
| SF24            | 200V                                   | 140V                | 200V                        |
| SF25            | 300V                                   | 210V                | 300V                        |
| SF26            | 400V                                   | 280V                | 400V                        |
| SF28            | 600V                                   | 420V                | 600V                        |

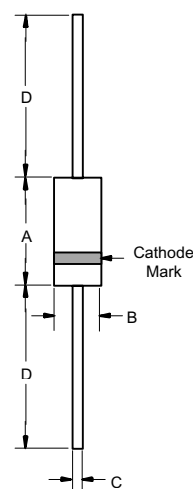
### Electrical Characteristics @ 25°C Unless Otherwise Specified

|                                                                         |             |                            |                                                       |
|-------------------------------------------------------------------------|-------------|----------------------------|-------------------------------------------------------|
| Average Forward Current                                                 | $I_{F(AV)}$ | 2.0A                       | $T_C = 55^\circ\text{C}$                              |
| Peak Forward Surge Current                                              | $I_{FSM}$   | 50A                        | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage<br>SF21-SF24<br>SF25-SF26<br>SF28 | $V_F$       | 0.95V<br>1.30V<br>1.70V    | $I_{FM} = 2.0A$ ;<br>$T_a = 25^\circ\text{C}^*$       |
| Maximum DC Reverse Current At Rated DC Blocking Voltage                 | $I_R$       | 5.0 $\mu$ A<br>100 $\mu$ A | $T_C = 25^\circ\text{C}$<br>$T_C = 100^\circ\text{C}$ |
| Typical Junction Capacitance<br>SF21-SF24<br>SF25-SF28                  | $C_J$       | 60pF<br>30pF               | Measured at<br>1.0MHz, $V_R=4.0V$                     |
| Maximum Reverse Recovery Time                                           | $T_{RR}$    | 35nS                       | $I_F=0.5A$ , $I_R=1.0A$ ,<br>$I_{RR}=0.25A$           |

\*Pulse Test: Pulse width 300 usec, Duty cycle 1%.

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

### DO-15



| DIMENSIONS |        |      |       |      |      |
|------------|--------|------|-------|------|------|
| DIM        | INCHES |      | MM    |      | NOTE |
|            | MIN    | MAX  | MIN   | MAX  |      |
| A          | .230   | .300 | 5.80  | 7.60 |      |
| B          | .104   | .140 | 2.60  | 3.60 |      |
| C          | .026   | .034 | .70   | .90  |      |
| D          | 1.000  | ---  | 25.40 | ---  |      |

# SF21 thru SF28



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FIG.1- TYPICAL REVERSE CHARACTERISTICS

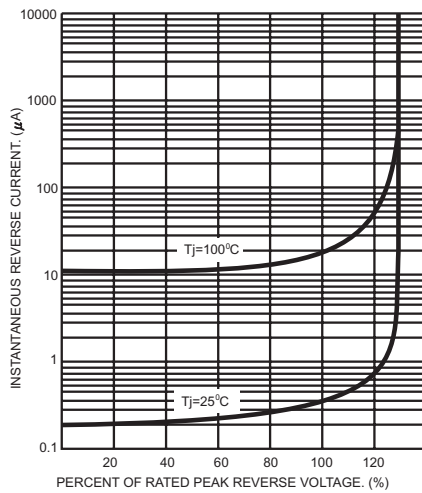


FIG.2- TYPICAL FORWARD CHARACTERISTICS

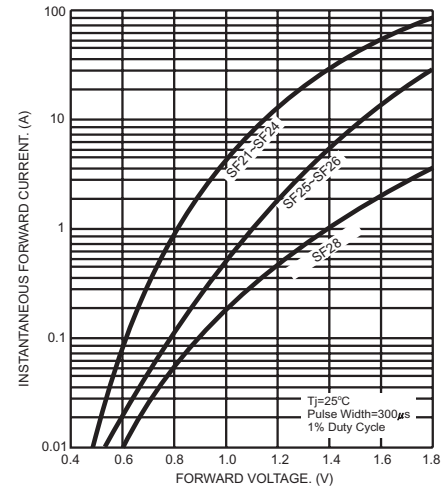
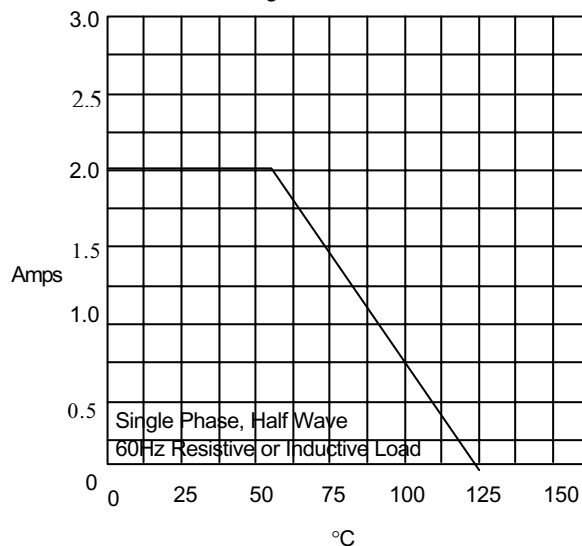


Figure 3  
Forward Derating Curve



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

# SF21 thru SF28



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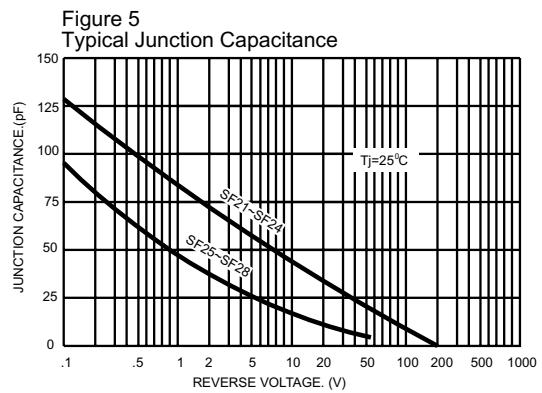
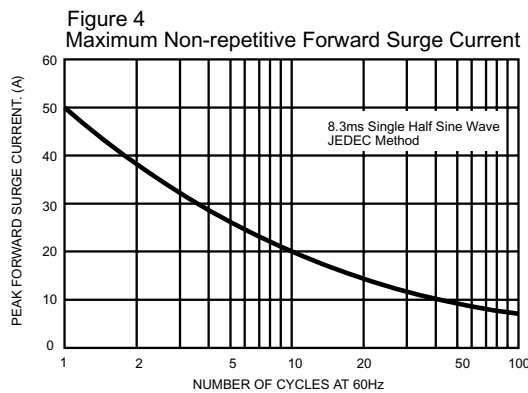
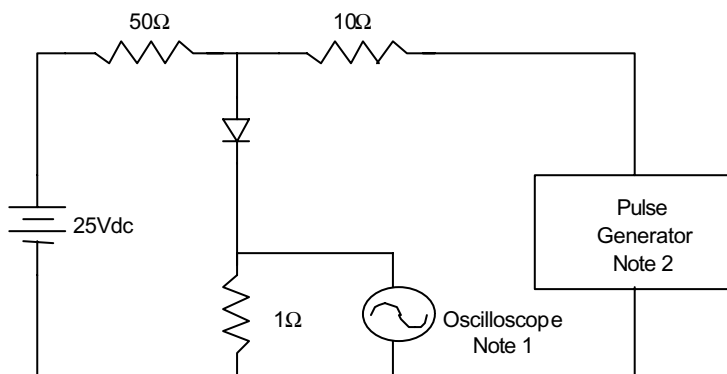
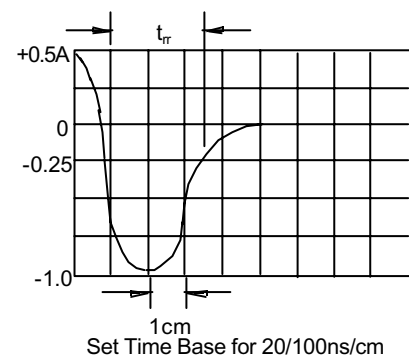


Figure 6  
Reverse Recovery Time Characteristic And Test Circuit Diagram



- 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



## Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 4Kpcs/Reel |
| Part Number-BP | Bulk: 25Kpcs/Carton   |

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

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