

### Switchmode Power Rectifiers

... Designed for use in switching power supplies, inverters and as free wheeling diodes. These state-of-the-art devices have the following features:

- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* Ultrafast 35 & 50 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**ULTRA FAST  
RECTIFIERS**

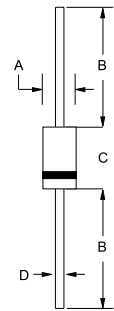
**2.0 AMPERES  
50 -- 400 VOLTS**



**DO-41**

### MAXIMUM RATINGS

| Characteristic   | Symbol                          | SF            |     |     |     |     |     | Unit |
|--|---------------------------------|---------------|-----|-----|-----|-----|-----|------|
|  |                                 | 21            | 22  | 23  | 24  | 25  | 26  |      |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                         | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50            | 100 | 150 | 200 | 300 | 400 | V    |
| RMS Reverse Voltage  | $V_{R(RMS)}$                    | 35            | 70  | 105 | 140 | 210 | 280 | V    |
| Average Rectifier Forward Current  | $I_O$                           | 2.0           |     |     |     |     |     | A    |
| Non-Repetitive Peak Surge Current<br>( Surge applied at rate load conditions<br>halfwave, single phase, 60Hz ) | $I_{FSM}$                       | 50            |     |     |     | 35  |     | A    |
| Operating and Storage Junction<br>Temperature Range  | $T_J, T_{stg}$                  | - 65 to + 150 |     |     |     |     |     | °C   |



| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 2.00        | 2.70 |
| B   | 25.40       | ---  |
| C   | 4.10        | 5.20 |
| D   | 0.70        | 0.90 |

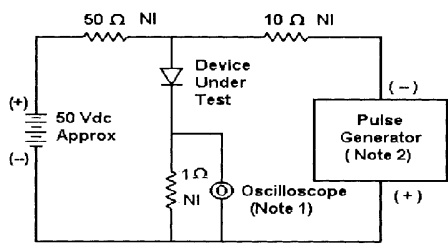
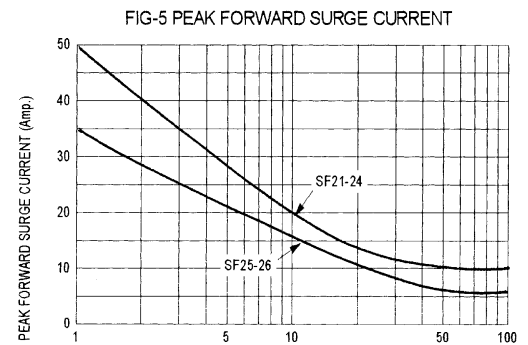
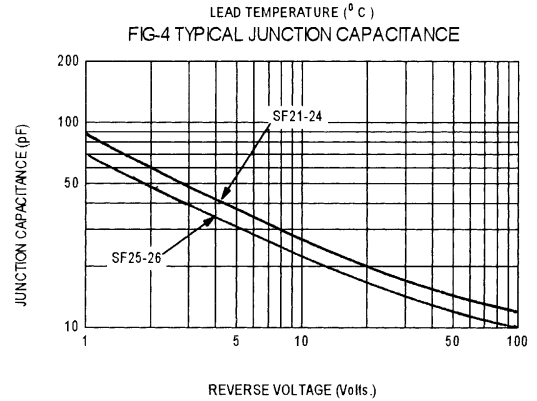
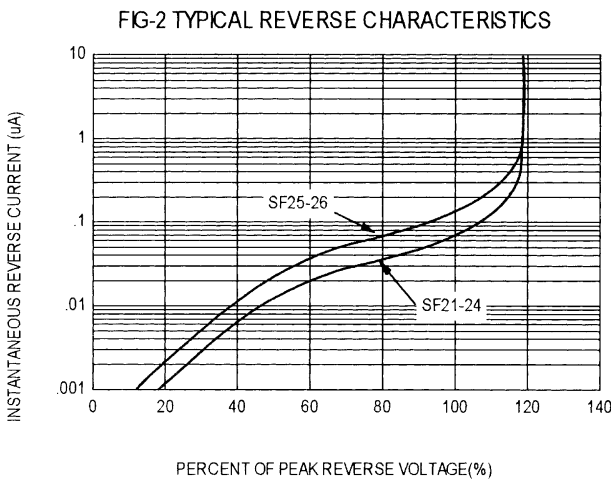
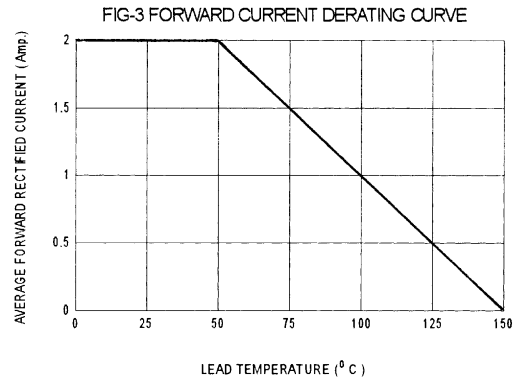
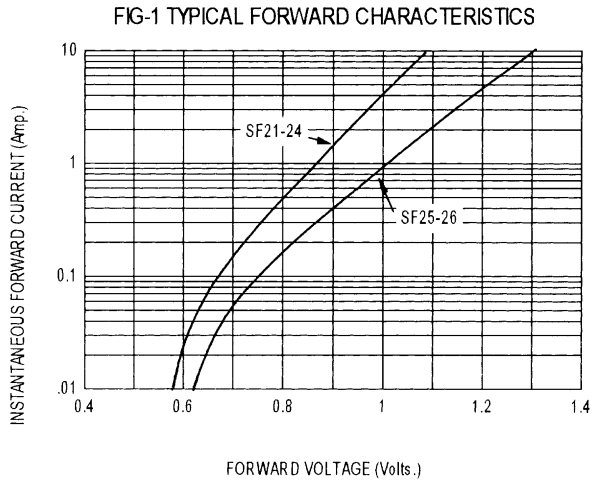
### ELECTRICAL CHARACTERISTICS

| Characteristic  | Symbol   | SF   |    |    |    |      |    | Unit |
|---|----------|------|----|----|----|------|----|------|
|   |          | 21   | 22 | 23 | 24 | 25   | 26 |      |
| Maximum Instantaneous Forward<br>Voltage<br>( $I_F=2.0$ Amp, $T_C = 25$ °C)   | $V_F$    | 0.95 |    |    |    | 1.30 |    | V    |
| Maximum Instantaneous Reverse<br>Current<br>( Rated DC Voltage, $T_C = 25$ °C)<br>( Rated DC Voltage, $T_C = 125$ °C) | $I_R$    | 5.0  |    |    |    | 50   |    | uA   |
| Reverse Recovery Time<br>( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A )   | $T_{rr}$ | 35   |    |    |    | 50   |    | ns   |
| Typical Junction Capacitance<br>( Reverse Voltage of 4 volts & $f=1$ MHz)   | $C_P$    | 40   |    |    |    | 35   |    | pF   |

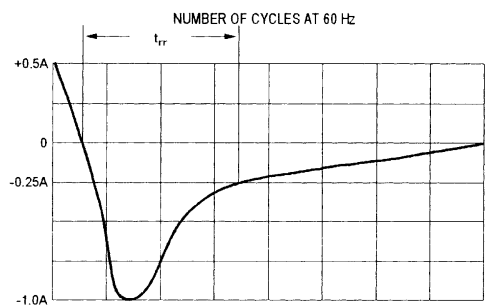
CASE---  
Transfer molded  
plastic

POLARITY---  
Cathode indicated  
polarity band

# SF21 Thru SF26



Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M Ω, 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50 Ω



Set time base for 10/20 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram