



## SF2001G- SF2008G

### 20.0AMPS. Glass Passivated Super Fast Rectifiers

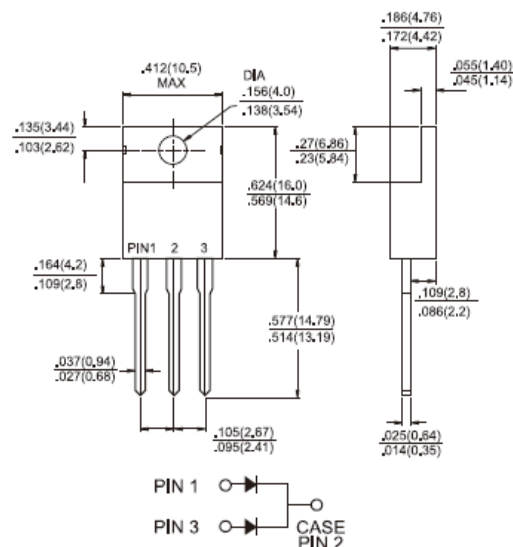
#### TO-220AB

### Features

- ✧ High efficiency, low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss.
- ✧ For use in low voltage, high frequency inverter, free wheeling, and polarity protection application
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

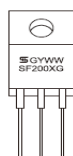
### Mechanical Data

- ✧ Cases: TO-220AB Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds 16" (4.06mm) from case.
- ✧ Weight: 1.90 grams



### Dimensions in inches and (millimeters)

#### Marking Diagram



SF200XG = Specific Device Code  
G = Green Compound  
Y = Year  
WW = Work Week

### Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number                                                                                                 | Symbol             | SF<br>2001G   | SF<br>2002G | SF<br>2003G | SF<br>2004G | SF<br>2005G | SF<br>2006G | SF<br>2007G | SF<br>2008G | Units |
|-------------------------------------------------------------------------------------------------------------|--------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                      | V <sub>RRM</sub>   | 50            | 100         | 150         | 200         | 300         | 400         | 500         | 600         | V     |
| Maximum RMS Voltage                                                                                         | V <sub>RMS</sub>   | 35            | 70          | 105         | 140         | 210         | 280         | 350         | 420         | V     |
| Maximum DC Blocking Voltage                                                                                 | V <sub>DC</sub>    | 50            | 100         | 150         | 200         | 300         | 400         | 500         | 600         | V     |
| Maximum Average Forward Rectified Current                                                                   | I <sub>F(AV)</sub> | 20            |             |             |             |             |             |             |             | A     |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)          | I <sub>FSM</sub>   | 150           |             |             |             |             |             |             |             | A     |
| Maximum Instantaneous Forward Voltage (Note 1)<br>@ 10 A                                                    | V <sub>F</sub>     | 0.975         |             |             |             | 1.3         |             | 1.7         |             | V     |
| Maximum DC Reverse Current @ T <sub>A</sub> =25 °C<br>at Rated DC Blocking Voltage @ T <sub>A</sub> =125 °C | I <sub>R</sub>     | 5<br>400      |             |             |             |             |             |             |             | uA    |
| Maximum Reverse Recovery Time (Note 2)                                                                      | T <sub>rr</sub>    | 35            |             |             |             |             |             |             |             | nS    |
| Typical Junction Capacitance (Note 3)                                                                       | C <sub>j</sub>     | 80            |             |             |             |             |             |             |             | pF    |
| Typical Thermal Resistance                                                                                  | R <sub>θJC</sub>   | 2.5           |             |             |             |             |             |             |             | °C/W  |
| Operating Temperature Range                                                                                 | T <sub>J</sub>     | - 55 to + 150 |             |             |             |             |             |             |             | °C    |
| Storage Temperature Range                                                                                   | T <sub>STG</sub>   | - 55 to + 150 |             |             |             |             |             |             |             | °C    |

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$ .

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

## RATINGS AND CHARACTERISTIC CURVES (SF2001G THRU SF2008G)

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

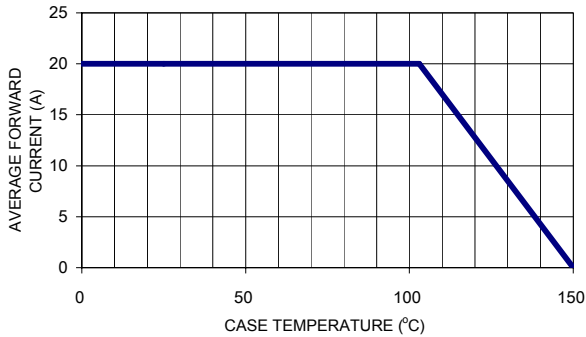


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

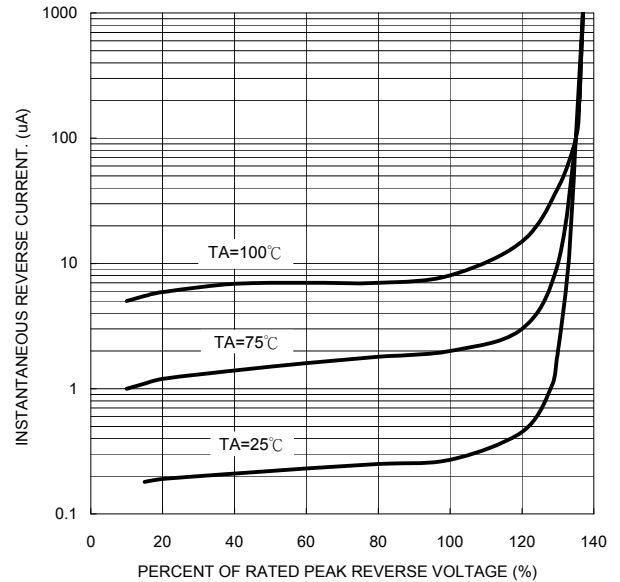


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

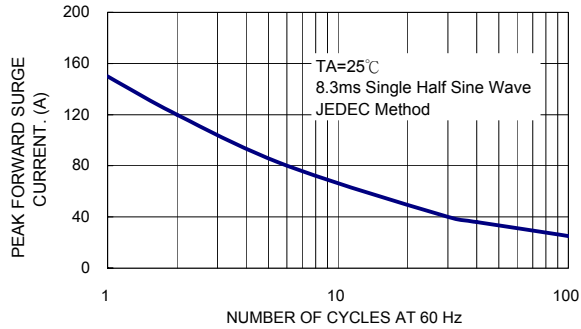


FIG. 5- TYPICAL FORWARD CHARACTERISTICS PER LEG

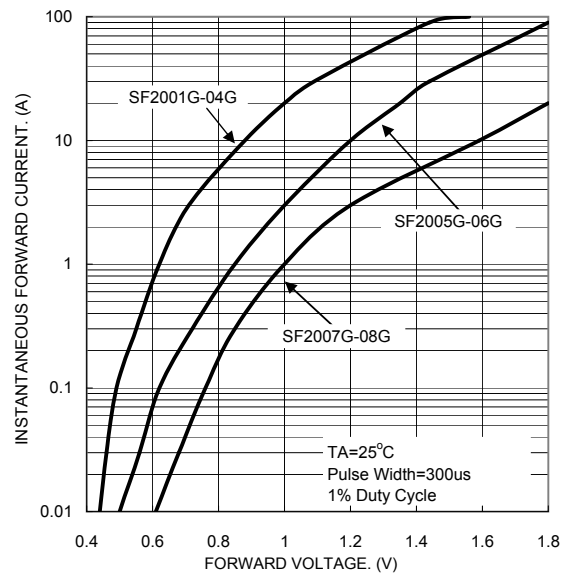


FIG. 4- TYPICAL JUNCTION CAPACITANCE PER LEG

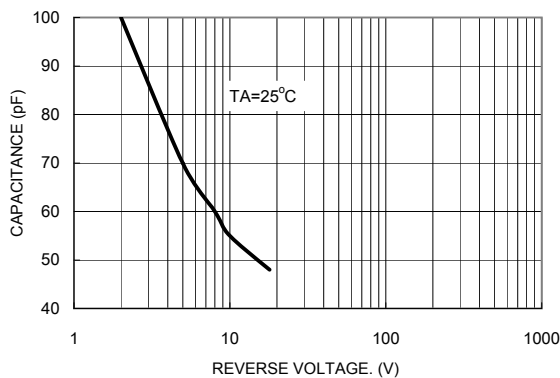


FIG. 6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

