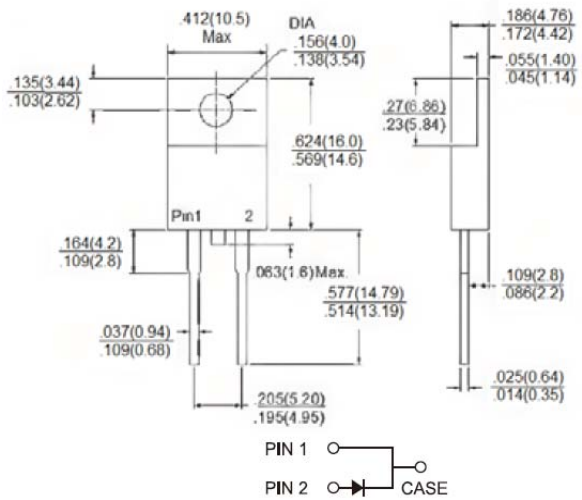




## SFA1001G - SFA1008G 10.0AMPS Glass Passivated Super Fast Rectifier TO-220AC

### Features

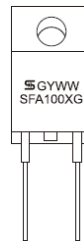
- ◇ High efficiency, low VF
- ◇ High current capability
- ◇ High reliability
- ◇ High surge current capability
- ◇ Low power loss
- ◇ For use in low voltage, high frequency inverter, Free wheeling, and polarity protection application
- ◇ Green compound with suffix "G" on packing code & prefix "G" on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



### Mechanical Data

- ◇ Case: TO-220AC 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: 260°C/10 seconds/.16", (4.06mm) from case
- ◇ Weight: 1.9 grams

### Dimensions in inches and (millimeters)



### Marking Diagram

- SFA100XG = 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          | SFA 1001G | SFA 1002G | SFA 1003G | SFA 1004G | SFA 1005G     | SFA 1006G | SFA 1007G | SFA 1008G | Unit |
|--|-----------------|-----------|-----------|-----------|-----------|---------------|-----------|-----------|-----------|------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RRM}$       | 50        | 100       | 150       | 200       | 300           | 400       | 500       | 600       | V    |
| Maximum RMS Voltage  | $V_{RMS}$       | 35        | 70        | 105       | 140       | 210           | 280       | 350       | 420       | V    |
| Maximum DC Blocking Voltage  | $V_{DC}$        | 50        | 100       | 150       | 200       | 300           | 400       | 500       | 600       | V    |
| Maximum Average Forward Rectified Current  | $I_{F(AV)}$     | 10        |           |           |           |               |           |           |           | A    |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | $I_{FSM}$       | 125       |           |           |           |               |           |           |           | A    |
| Maximum Instantaneous Forward Voltage (Note 1) @ 10 A  | $V_F$           | 0.975     |           |           | 1.3       |               | 1.7       |           |           | V    |
| Maximum Reverse Current @ Rated VR $T_A=25^\circ\text{C}$<br>$T_A=125^\circ\text{C}$               | $I_R$           |           |           |           |           | 10            |           | 400       |           | uA   |
| Maximum Reverse Recovery Time (Note 2)   | $T_{rr}$        |           |           |           |           | 35            |           |           |           | nS   |
| Typical Junction Capacitance (Note 3)  | $C_j$           | 70        |           |           |           | 50            |           |           |           | pF   |
| Typical Thermal Resistance   | $R_{\theta JC}$ |           |           |           |           | 3.5           |           |           |           | °C/W |
| Operating Temperature Range  | $T_J$           |           |           |           |           | - 65 to + 150 |           |           |           | °C   |
| Storage Temperature Range  | $T_{STG}$       |           |           |           |           | - 65 to + 150 |           |           |           | °C   |

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

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

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

## RATINGS AND CHARACTERISTIC CURVES (SFA1001G THRU SFA1008G)

FIG.1 FORWARD CURRENT DERATING CURVE

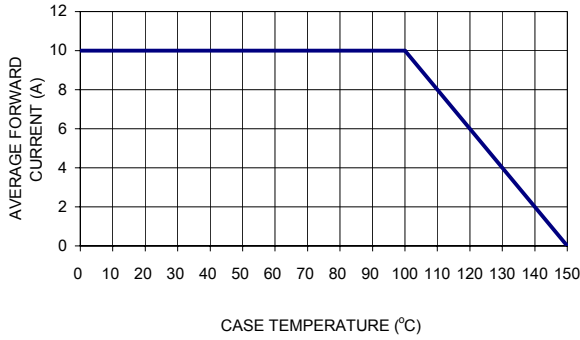


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

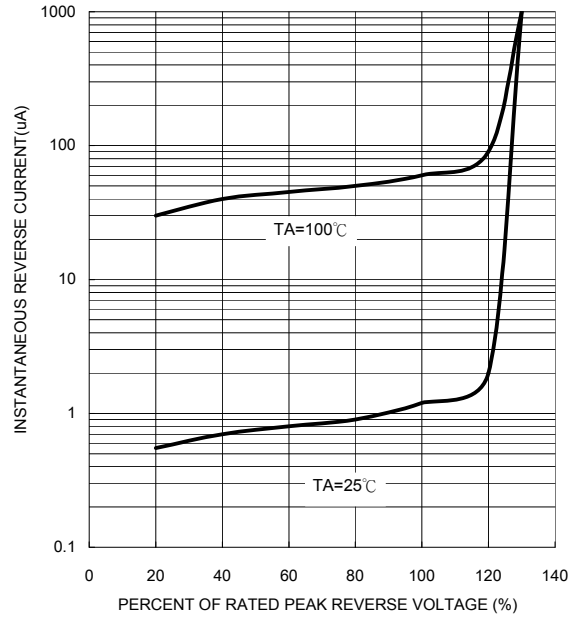


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

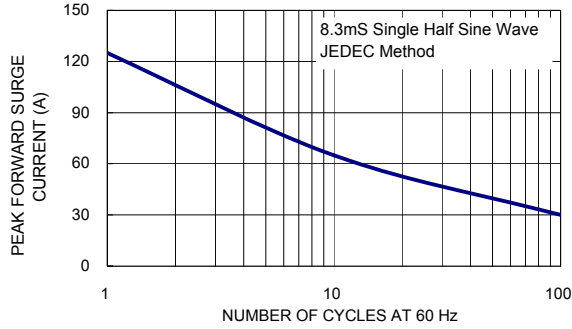


FIG. 5 TYPICAL FORWARD CHARACTERISTICS

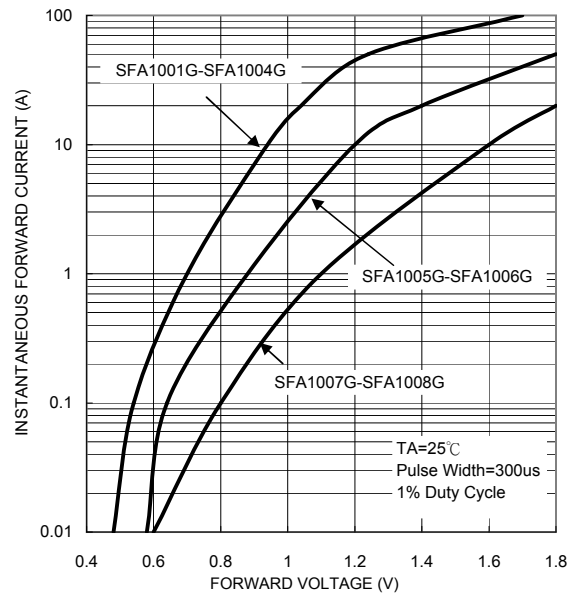


FIG. 4 TYPICAL JUNCTION CAPACITANCE

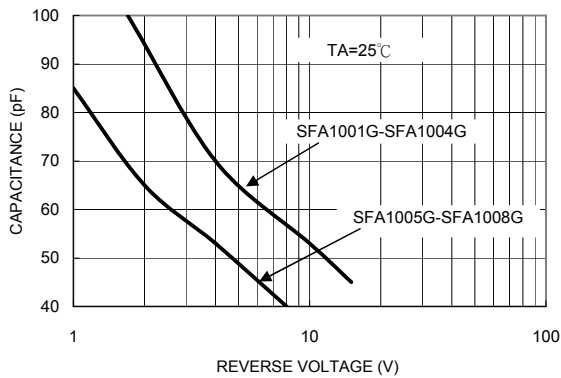


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

