

# SFA1601G - SFA1608G

## 16.0 AMPS. Glass Passivated Super Fast Rectifiers

### TO-220AC

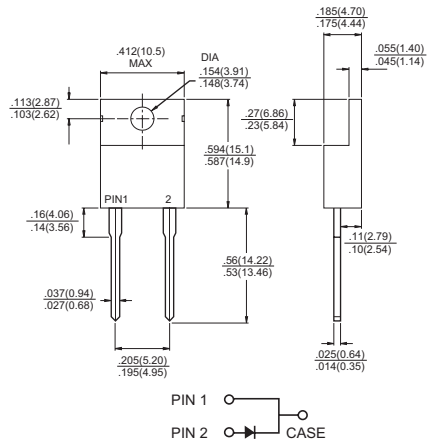


## Features

- ✧ 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

## Mechanical Data

- ✧ Cases: 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 guaranteed:  
260°C/10 seconds .16" (4.06mm) from case.
- ✧ Weight: 2.24 grams



Dimensions in inches and (millimeters)

## 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<br>1601G | SFA<br>1602G | SFA<br>1603G | SFA<br>1604G | SFA<br>1605G | SFA<br>1606G | SFA<br>1607G | SFA<br>1608G | 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 @T <sub>C</sub> = 100 °C                                      | I <sub>(AV)</sub> | 16.0         |              |              |              |              |              |              |              | A        |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )     | I <sub>FSM</sub>  | 200          |              |              |              |              |              |              |              | A        |
| Maximum Instantaneous Forward Voltage @ 16.0A                                                           | V <sub>F</sub>    | 0.975        |              |              |              | 1.3          |              | 1.7          |              | V        |
| Maximum DC Reverse Current @T <sub>A</sub> =25 °C at Rated DC Blocking Voltage @ T <sub>A</sub> =100 °C | I <sub>R</sub>    | 10<br>400    |              |              |              |              |              |              |              | uA<br>uA |
| Maximum Reverse Recovery Time (Note 1)                                                                  | T <sub>rr</sub>   | 35           |              |              |              |              |              |              |              | nS       |
| Typical Junction Capacitance (Note 2)                                                                   | C <sub>j</sub>    | 130          |              |              |              | 100          |              |              |              | pF       |
| Typical Thermal Resistance (Note 3)                                                                     | R <sub>θJC</sub>  | 1.0          |              |              |              |              |              |              |              | °C/W     |
| Operating Temperature Range                                                                             | T <sub>J</sub>    | -65 to +150  |              |              |              |              |              |              |              | °C       |
| Storage Temperature Range                                                                               | T <sub>STG</sub>  | -65 to +150  |              |              |              |              |              |              |              | °C       |

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$
  2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
  3. Mounted on Heatsink. Size of 3" x 5" x 0.25" Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (SFA1601G THRU SFA1608G)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

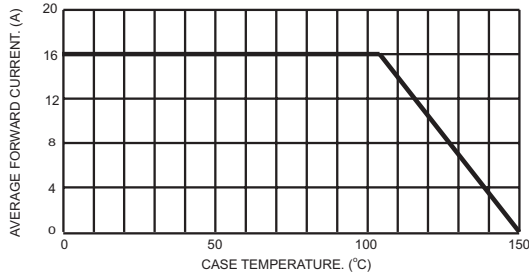


FIG.2- TYPICAL REVERSE CHARACTERISTICS

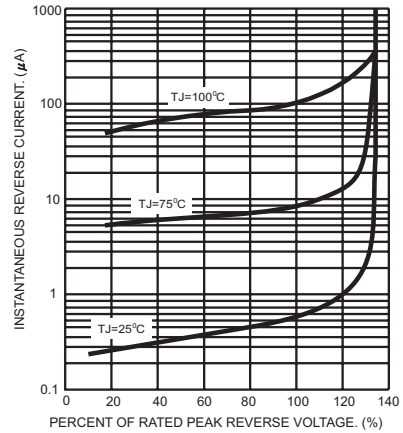


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

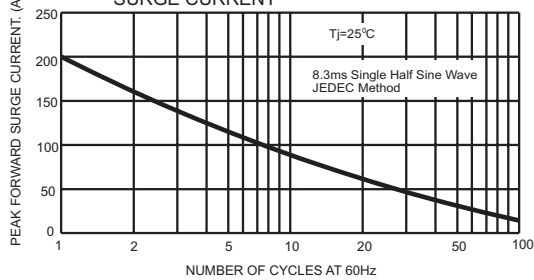


FIG.5- TYPICAL FORWARD CHARACTERISTICS

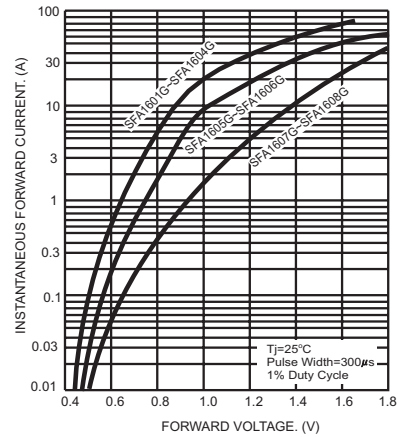


FIG.4- TYPICAL JUNCTION CAPACITANCE

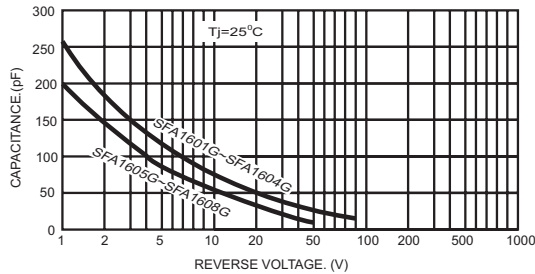
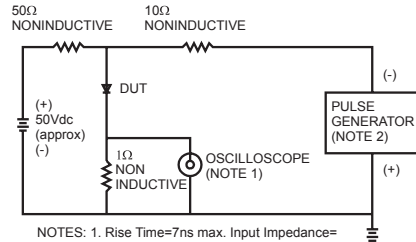


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm Z2pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms

