

## 6A, 50V - 600V Glass Passivated Super Fast Rectifiers

### FEATURES

- High efficiency
- High current capability, Low VF
- High reliability
- High surge current capability
- Low power loss
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



### MECHANICAL DATA

**Case:** DO-201AD

**DO-201AD**

Molding compound: UL flammability classification rating 94V-0

Part No. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Pure tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Weight:** 1.2 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted) |                 |              |           |           |           |           |           |           |                           |      |  |  |
|---|-----------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|------|--|--|
| PARAMETER   | SYMBOL          | SF<br>61G    | SF<br>62G | SF<br>63G | SF<br>64G | SF<br>65G | SF<br>66G | SF<br>67G | SF<br>68G                 | 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   | $I_{F(AV)}$     | 6            |           |           |           |           |           |           | A                         |      |  |  |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load             | $I_{FSM}$       | 150          |           |           |           |           |           |           | A                         |      |  |  |
| Maximum instantaneous forward voltage (Note 1)<br>@ 6 A   | $V_F$           | 0.975        |           |           | 1.3       |           |           | 1.7       |                           | V    |  |  |
| Maximum reverse current @ rated $V_R$<br>$T_J=125^\circ\text{C}$                                | $I_R$           | 5<br>100     |           |           |           |           |           |           |                           |      |  |  |
| Maximum reverse recovery time (Note 2)  | $t_{rr}$        | 35           |           |           |           |           |           |           | ns                        |      |  |  |
| Typical junction capacitance (Note 3)   | $C_J$           | 100          |           | 50        |           |           |           |           |                           |      |  |  |
| Typical thermal resistance  | $R_{\theta JL}$ | 5            |           |           |           |           |           |           | $^\circ\text{C}/\text{W}$ |      |  |  |
|   | $R_{\theta JA}$ | 40           |           |           |           |           |           |           |                           |      |  |  |
| Operating junction temperature range  | $T_J$           | - 55 to +150 |           |           |           |           |           |           | $^\circ\text{C}$          |      |  |  |
| Storage temperature range   | $T_{STG}$       | - 55 to +150 |           |           |           |           |           |           | $^\circ\text{C}$          |      |  |  |

Note 1: Pulse test with  $PW=300\mu\text{s}$ , 1% duty cycle

Note 2: 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 DC.

**ORDERING INFORMATION**

| PART NO.          | PART NO.<br>SUFFIX | PACKING<br>CODE | PACKING CODE<br>SUFFIX (*) | PACKAGE  | PACKING                |
|-------------------|--------------------|-----------------|----------------------------|----------|------------------------|
| SF6xG<br>(Note 1) | H                  | A0              | G                          | DO-201AD | 500 / Ammo box         |
|                   |                    | R0              |                            | DO-201AD | 1,250 / 13" Paper reel |
|                   |                    | B0              |                            | DO-201AD | 500 / Bulk packing     |
|                   |                    | X0              |                            | DO-201AD | Forming                |

Note 1: "x" defines voltage from 50V (SF61G) to 600V (SF68G)

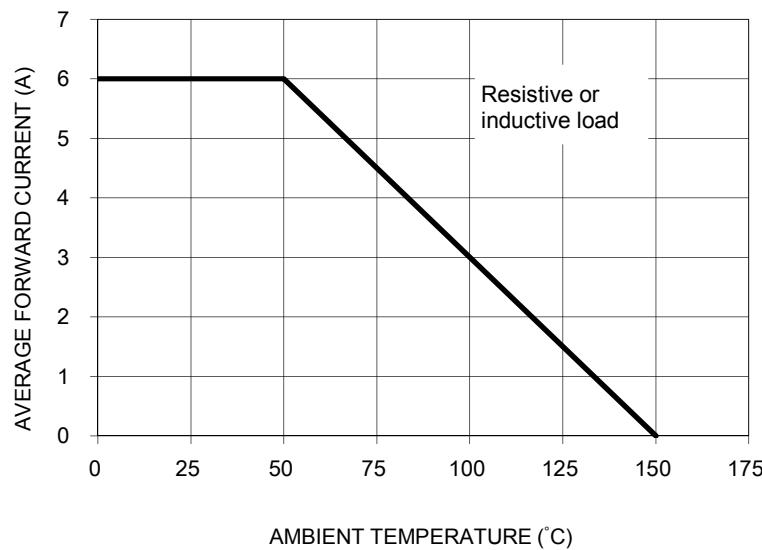
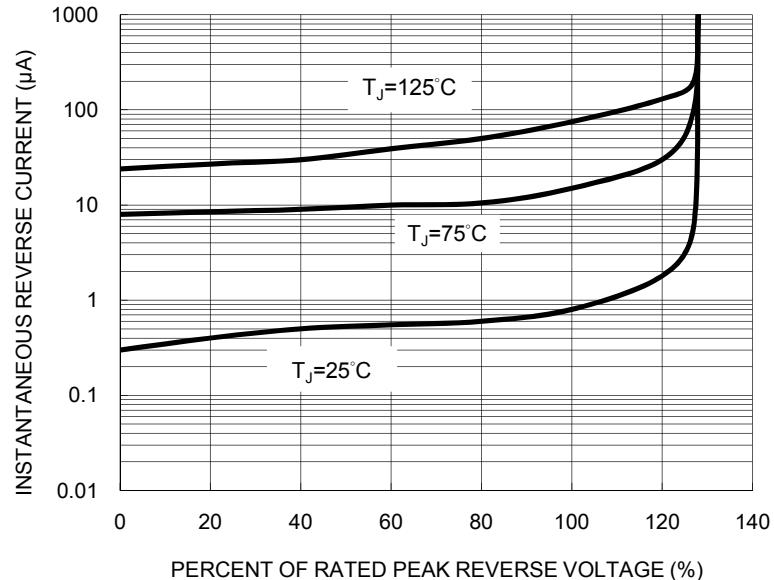
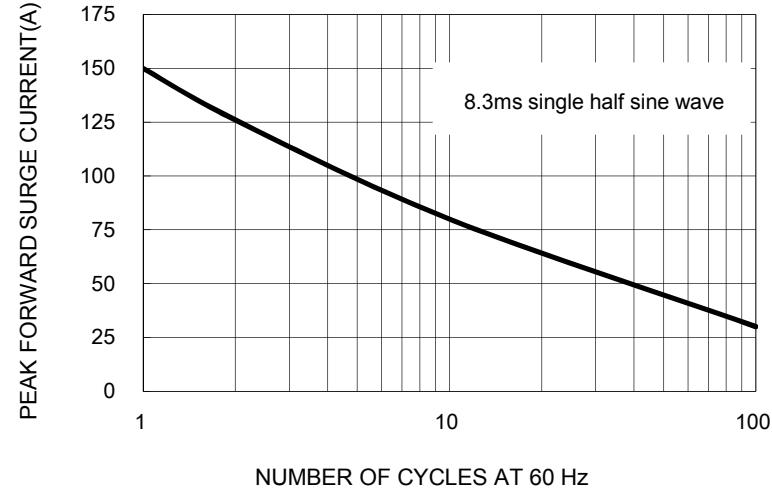
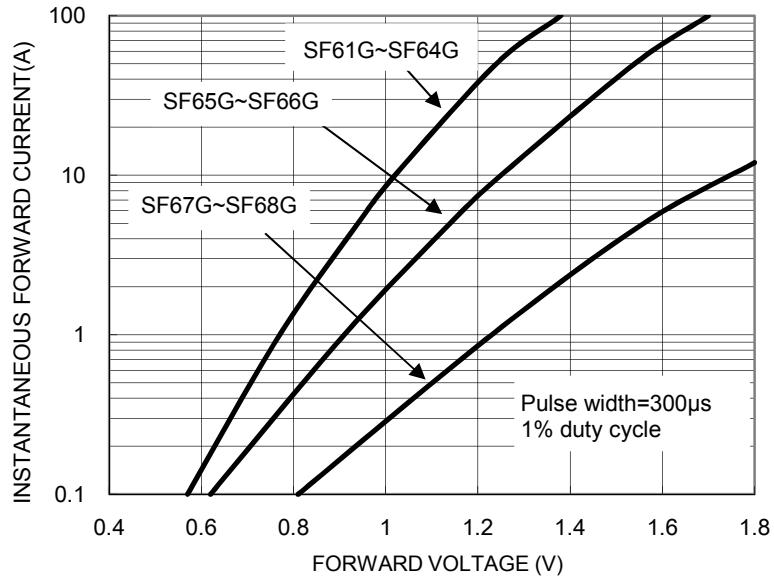
\*: Optional available

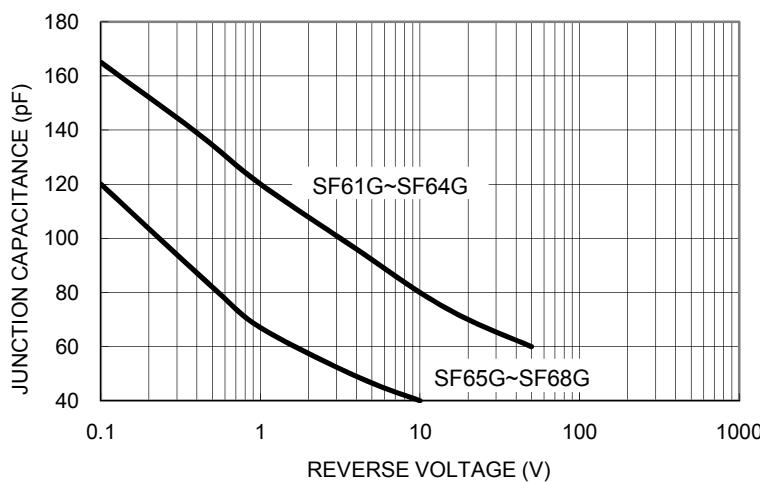
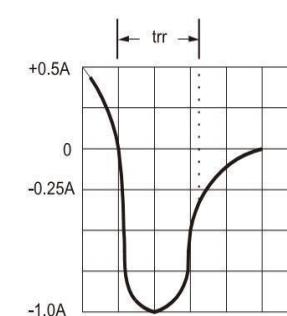
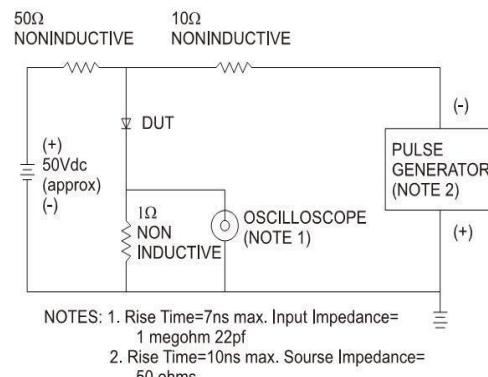
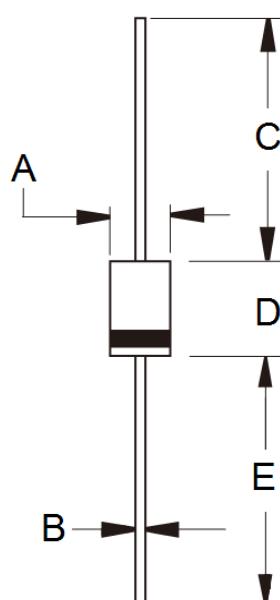
**EXAMPLE**

| EXAMPLE P/N | PART NO. | PART NO.<br>SUFFIX | PACKING CODE | PACKING CODE<br>SUFFIX | DESCRIPTION                          |
|-------------|----------|--------------------|--------------|------------------------|--------------------------------------|
| SF68GHA0G   | SF68G    | H                  | A0           | G                      | AEC-Q101 qualified<br>Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

 (T<sub>A</sub>=25°C unless otherwise noted)

**FIG.1 MAXIMUM AVERAGE FORWARD CURRENT DERATING**

**FIG. 2 TYPICAL REVERSE CHARACTERISTICS**

**FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

**FIG.4 TYPICAL FORWARD CHARACTERISTICS**


**FIG. 5 TYPICAL JUNCTION CAPACITANCE**

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

**PACKAGE OUTLINE DIMENSIONS**
**DO-201AD**


| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 5.00      | 5.60 | 0.197       | 0.220 |
| B    | 1.20      | 1.30 | 0.048       | 0.052 |
| C    | 25.40     | -    | 1.000       | -     |
| D    | 8.50      | 9.50 | 0.335       | 0.375 |
| E    | 25.40     | -    | 1.000       | -     |

**MARKING DIAGRAM**


P/N = Specific Device Code

G = Green Compound

YWW = Date Code

F = Factory Code

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