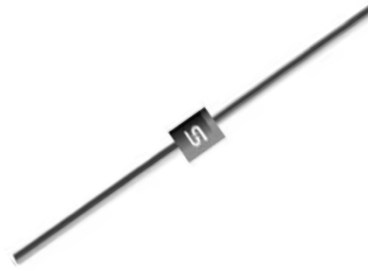


## Glass Passivated Super Fast Rectifiers

### FEATURES

- Glass passivated chip junction
- 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 definition



**DO-201AD**



### MECHANICAL DATA

**Case:** DO-201AD

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (halogen-free)

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

Meet JESD 201 class 1A whisker test

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Weight:** 1.1 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERSTICS (T <sub>A</sub> =25°C unless otherwise noted) |                    |              |           |           |           |           |           |           |           |      |
|---------------------------------------------------------------------------------------------|--------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| PARAMETER                                                                                   | SYMBOL             | SF<br>31G    | SF<br>32G | SF<br>33G | SF<br>34G | SF<br>35G | SF<br>36G | SF<br>37G | SF<br>38G | UNIT |
| Maximum repetitive 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> | 3            |           |           |           |           |           |           |           | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load         | I <sub>FSM</sub>   | 125          |           |           |           |           |           |           |           | A    |
| Maximum instantaneous forward voltage (Note 1)<br>@ 3 A                                     | V <sub>F</sub>     | 0.95         |           |           |           | 1.3       |           | 1.7       |           | V    |
| Maximum reverse current @ rated VR    T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C       | I <sub>R</sub>     | 5<br>100     |           |           |           |           |           |           |           | μA   |
| Maximum reverse recovery time (Note 2)                                                      | T <sub>rr</sub>    | 35           |           |           |           |           |           |           |           | ns   |
| Typical junction capacitance (Note 3)                                                       | C <sub>j</sub>     | 80           |           |           |           | 60        |           |           |           | pF   |
| Typical thermal resistance                                                                  | R <sub>θJC</sub>   | 9            |           |           |           |           |           |           |           | °C/W |
|                                                                                             | R <sub>θJL</sub>   | 10           |           |           |           |           |           |           |           |      |
|                                                                                             | R <sub>θJA</sub>   | 35           |           |           |           |           |           |           |           |      |
| Operating junction 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=300μs, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

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

| ORDERING INFORMATION |                    |              |                     |          |                        |
|----------------------|--------------------|--------------|---------------------|----------|------------------------|
| PART NO.             | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE  | PACKING                |
| SF3xG<br>(Note 1)    | Prefix "H"         | A0           | Suffix "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 (SF31G) to 600V (SF38G)

| EXAMPLE       |          |                    |              |                     |                    |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| SF38G A0      | SF38G    |                    | A0           |                     |                    |
| SF38G A0G     | SF38G    |                    | A0           | G                   | Green compound     |
| SF38GHA0      | SF38G    | H                  | A0           |                     | AEC-Q101 qualified |

## RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

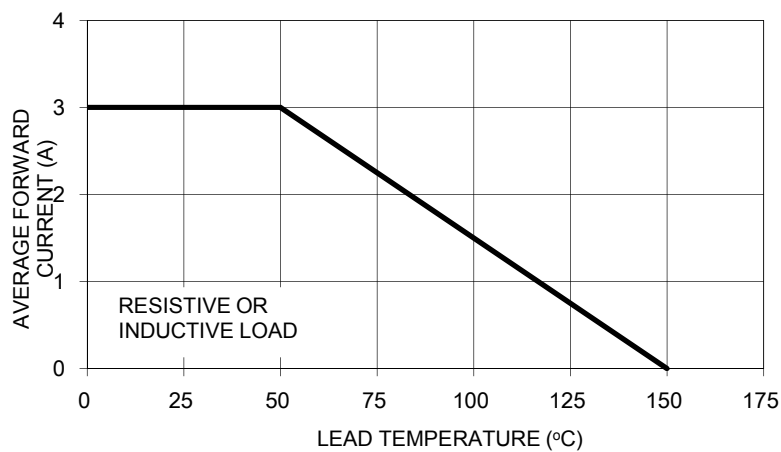


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

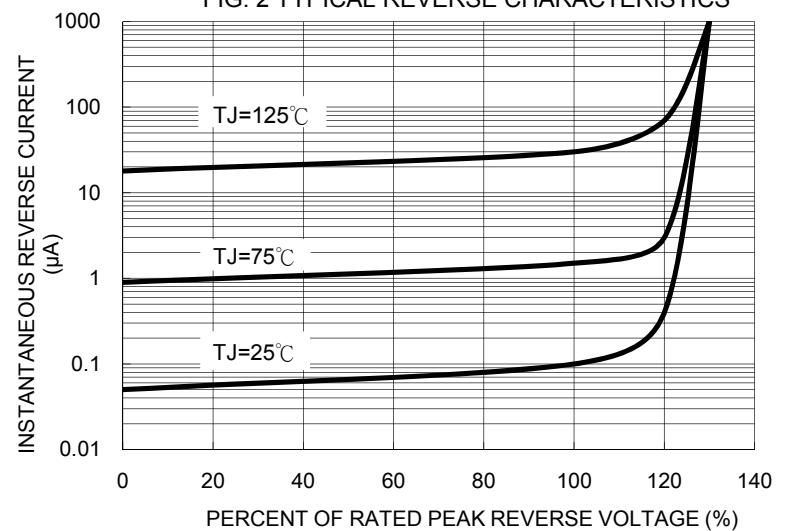


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

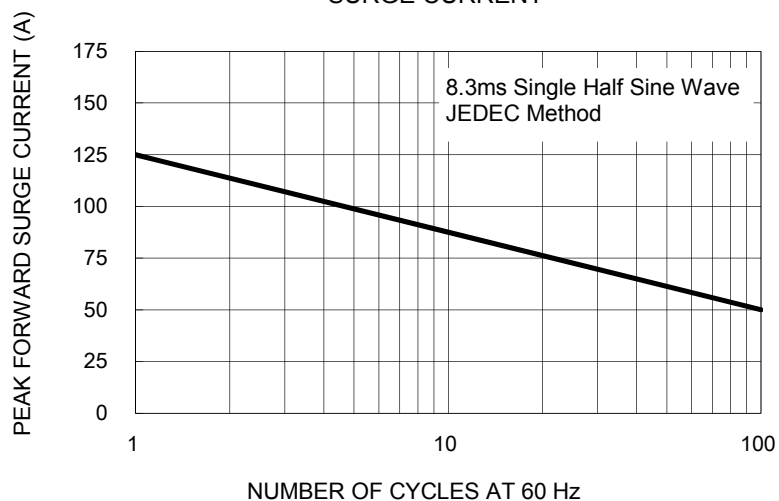


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

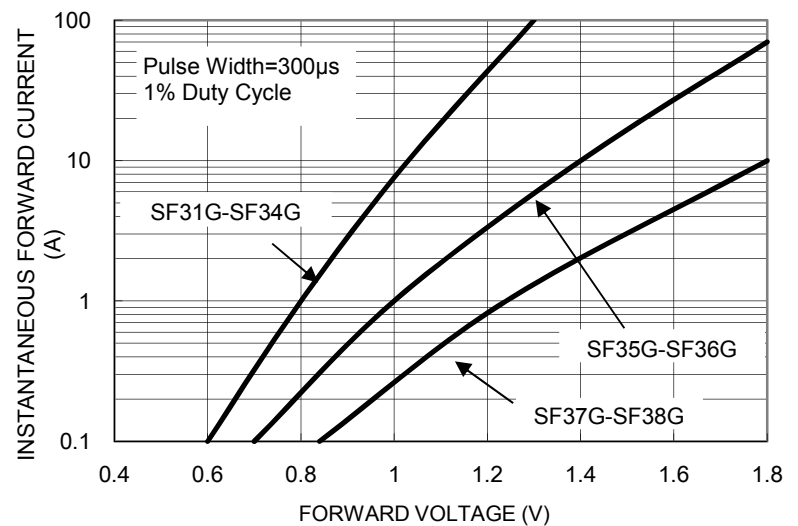


FIG. 5 TYPICAL JUNCTION CAPACITANCE

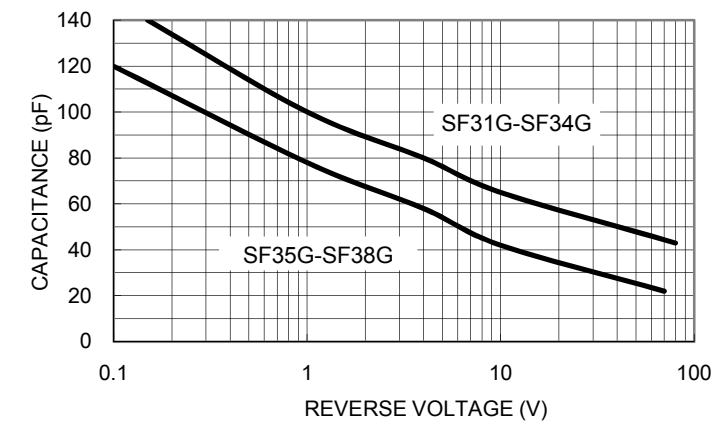
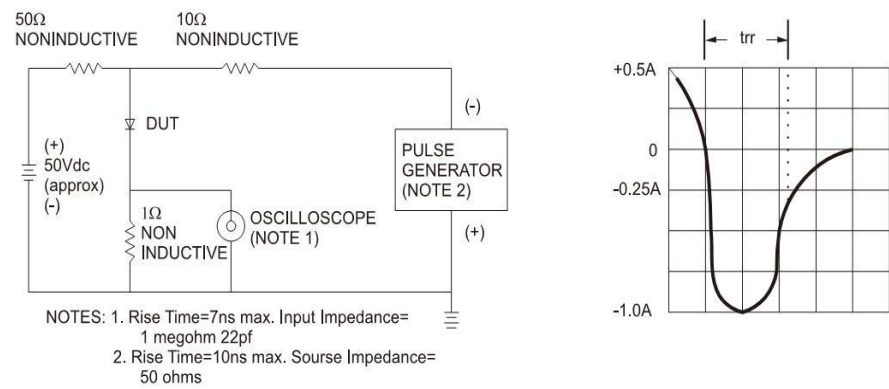
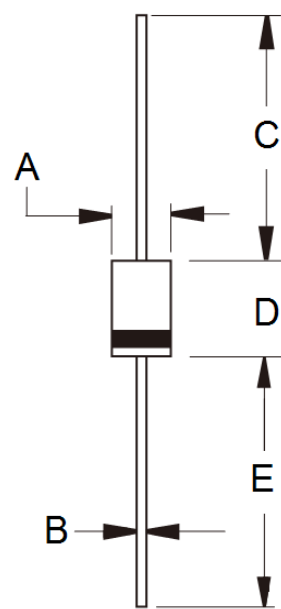


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



PACKAGE OUTLINE DIMENSIONS



| 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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