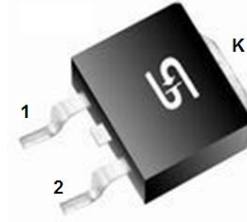


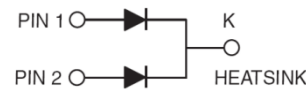
## Surface Mount Super Fast Rectifiers

### FEATURES

- Low forward voltage drop
- Ideal for automated placement
- High current capability
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



TO-263AB (D<sup>2</sup>PAK)



### MECHANICAL DATA

**Case:** TO-263AB (D<sup>2</sup>PAK)

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

**Polarity:** As marked

**Weight:** 1.37 g (approximately)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                                                                             | SYMBOL             | SFS<br>1001<br>G | SFS<br>1002<br>G | SFS<br>1003<br>G | SFS<br>1004<br>G | SFS<br>1005<br>G | SFS<br>1006<br>G | SFS<br>1007<br>G | SFS<br>1008<br>G | 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> | 10               |                  |                  |                  |                  |                  |                  |                  | 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>I <sub>F</sub> = 5 A                | V <sub>F</sub>     | 0.975            |                  |                  |                  | 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>     | 1<br>200         |                  |                  |                  |                  |                  |                  |                  | μA   |
| Maximum reverse recovery time (Note 2)                                                | T <sub>rr</sub>    | 35               |                  |                  |                  |                  |                  |                  |                  | ns   |
| Typical junction capacitance (Note 3)                                                 | C <sub>j</sub>     | 70               |                  |                  |                  | 50               |                  |                  |                  | pF   |
| Typical thermal resistance                                                            | R <sub>θJC</sub>   | 2                |                  |                  |                  |                  |                  |                  |                  | °C/W |
| 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              |
| SFS100xG<br>(Note 1) | Prefix "H"         | RN           | Suffix "G"          | D <sup>2</sup> PAK | 800 / 13" Paper reel |
|                      |                    | C0           |                     | D <sup>2</sup> PAK | 50 / Tube            |

Note 1: "x" defines voltage from 50V (SFS1001G) to 600V (SFS1008G)

| EXAMPLE       |          |                    |              |                     |                    |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| SFS1008G RN   | SFS1008G |                    | RN           |                     |                    |
| SFS1008G RNG  | SFS1008G |                    | RN           | G                   | Green compound     |
| SFS1008GHRN   | SFS1008G | H                  | RN           |                     | AEC-Q101 qualified |

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

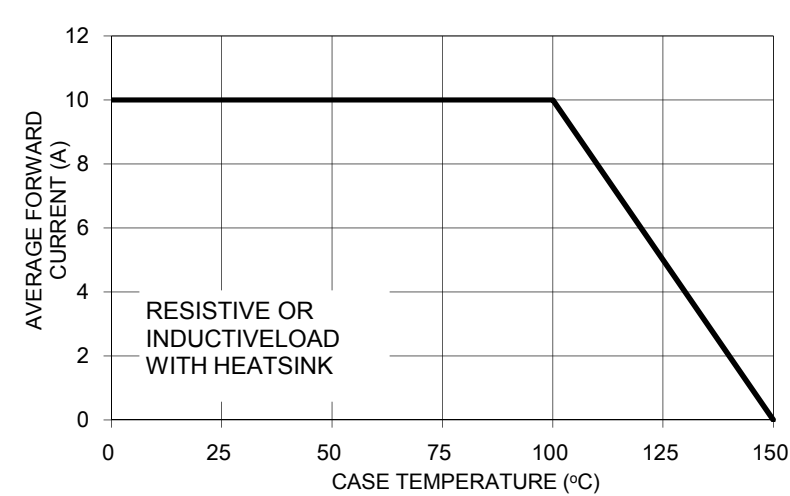


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

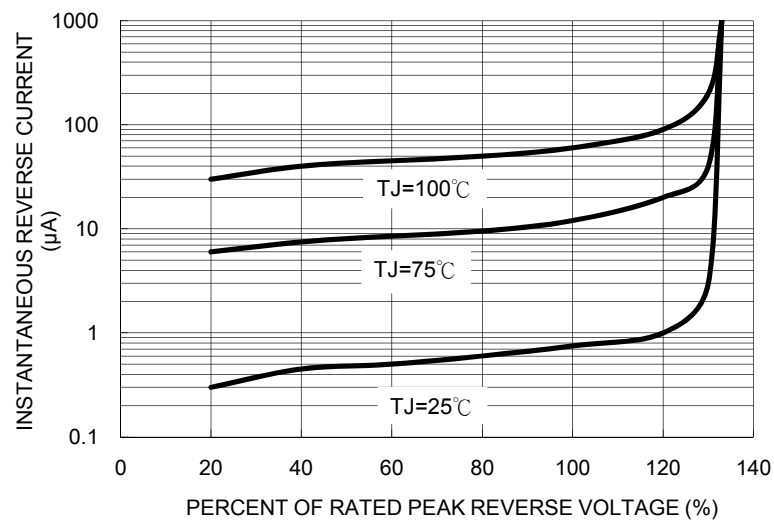
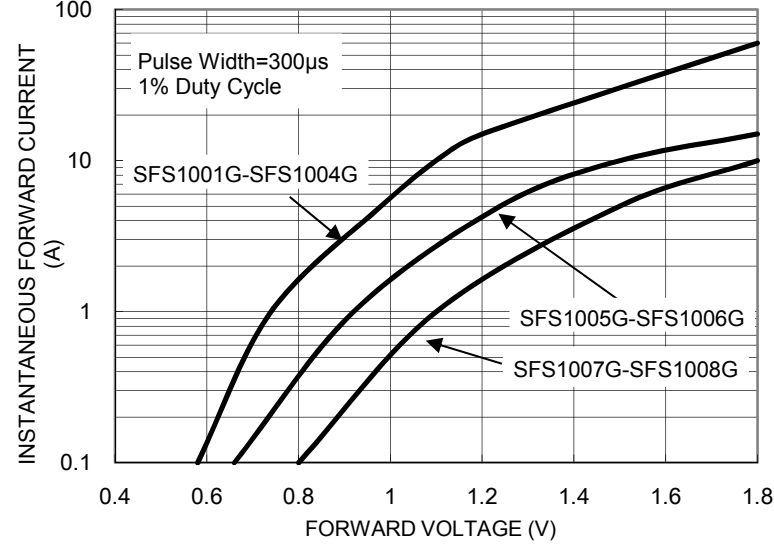


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



FIG. 4 TYPICAL FORWARD CHARACTERISRICS



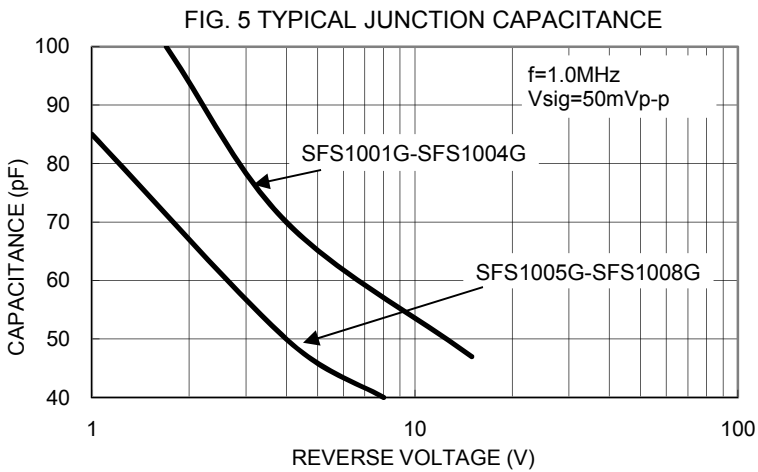
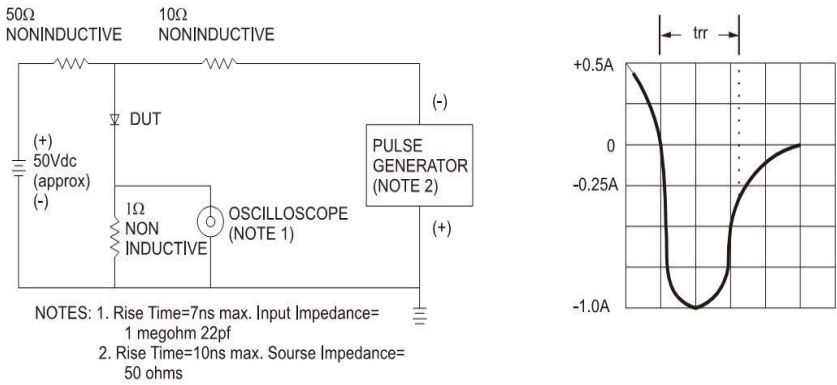
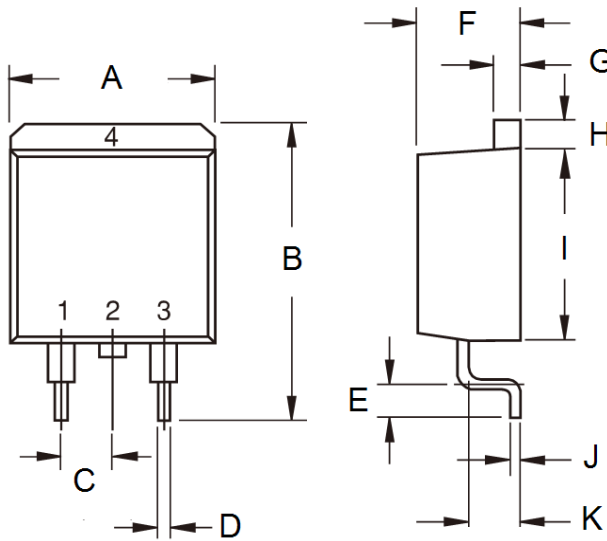


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

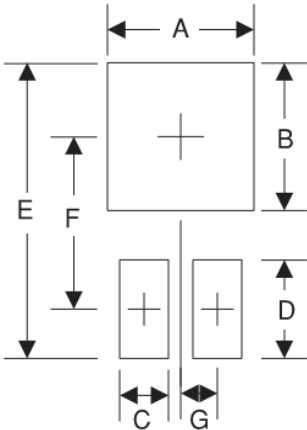


PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | -         | 10.5  | -           | 0.413 |
| B    | 14.60     | 15.88 | 0.575       | 0.625 |
| C    | 2.41      | 2.67  | 0.095       | 0.105 |
| D    | 0.68      | 0.94  | 0.027       | 0.037 |
| E    | 2.29      | 2.79  | 0.090       | 0.110 |
| F    | 4.44      | 4.70  | 0.175       | 0.185 |
| G    | 1.14      | 1.40  | 0.045       | 0.055 |
| H    | 1.14      | 1.40  | 0.045       | 0.055 |
| I    | 8.25      | 9.25  | 0.325       | 0.364 |
| J    | 0.36      | 0.53  | 0.014       | 0.021 |
| K    | 2.03      | 2.79  | 0.080       | 0.110 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 10.8      | 0.425       |
| B      | 8.3       | 0.327       |
| C      | 1.1       | 0.043       |
| D      | 3.5       | 0.138       |
| E      | 16.9      | 0.665       |
| F      | 9.5       | 0.374       |
| G      | 2.5       | 0.098       |

MARKING DIAGRAM



P/N = Specific Device Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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