

# SF31G~SF38G

## SUPERFAST RECOVERY RECTIFIER

**VOLTAGE** 50 to 600 Volt **CURRENT** 3.0 Ampere

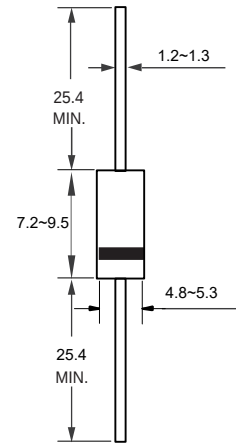
**DO-201AD** Unit:mm

### FEATURES

- Glass Passivated Junction
- Low Forward Voltage Drop
- High Current Capability
- High reliability
- High Surge Current Capability
- Lead free in compliance with EU RoHS

### MECHANICAL DATA

- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| PARAMETER                                                                           | SYMBOL             | SF31G       | SF32G | SF33G | SF34G | SF35G | SF36G | SF38G | UNITS  |
|-------------------------------------------------------------------------------------|--------------------|-------------|-------|-------|-------|-------|-------|-------|--------|
| Maximum Recurrent Peak Reverse Voltage                                              | V <sub>RRM</sub>   | 50          | 100   | 150   | 200   | 300   | 400   | 600   | V      |
| Maximum RMS Voltage                                                                 | V <sub>RMS</sub>   | 35          | 70    | 105   | 140   | 210   | 280   | 420   | V      |
| Maximum DC Blocking Voltage                                                         | V <sub>DC</sub>    | 50          | 100   | 150   | 200   | 300   | 400   | 600   | V      |
| Maximum Average Forward Current (see FIG.1)                                         | I <sub>F(AV)</sub> | 3.0         |       |       |       |       |       |       | A      |
| Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>   | 125         |       |       |       |       |       |       | A      |
| Maximum Forward Voltage at 3.0 A                                                    | V <sub>F</sub>     | 0.95        |       |       |       | 1.30  |       | 1.70  | V      |
| Maximum DC Reverse Current at<br>Rated DC Blocking Voltage                          | I <sub>R</sub>     | 5.0<br>100  |       |       |       |       |       |       | μA     |
| Maximum Reverse Recovery Time(Note 1)                                               | t <sub>rr</sub>    | 35          |       |       |       |       |       |       | ns     |
| Thermal Resistance                                                                  | R <sub>θJA</sub>   | 35          |       |       |       |       |       |       | °C / W |
| Typical Junction Capacitance (Note2)                                                | C <sub>J</sub>     | 80          |       |       |       | 60    |       |       | pF     |
| Operating Junction Temperature Range                                                | T <sub>J</sub>     | -55 to +150 |       |       |       |       |       |       | °C     |
| Storage Temperature Range                                                           | T <sub>STG</sub>   | -55 to +150 |       |       |       |       |       |       | °C     |

### NOTES:

1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{rr}=0.25A$
2. Measured at 1.0MHz and applied reverse voltage of 4.0 volt

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## RATING AND CHARACTERISTIC CURVES

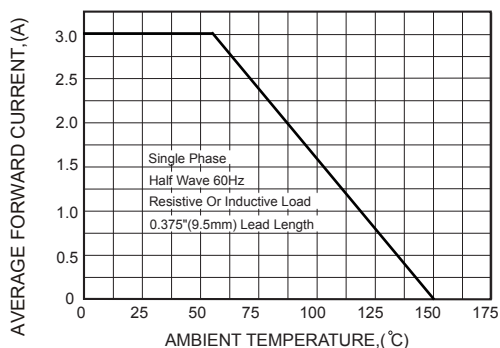


Fig. 1 Forward Current Derating Curve

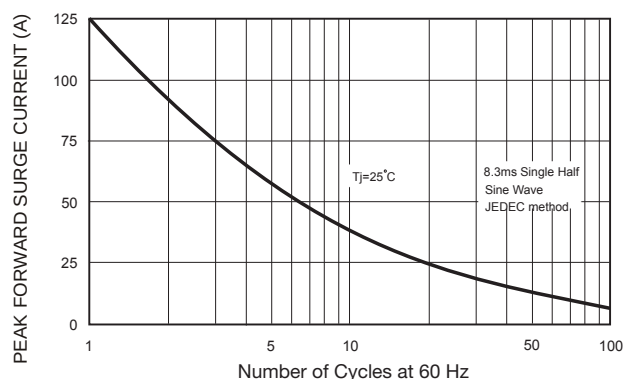


Fig. 2 Surge Current Derating Curve

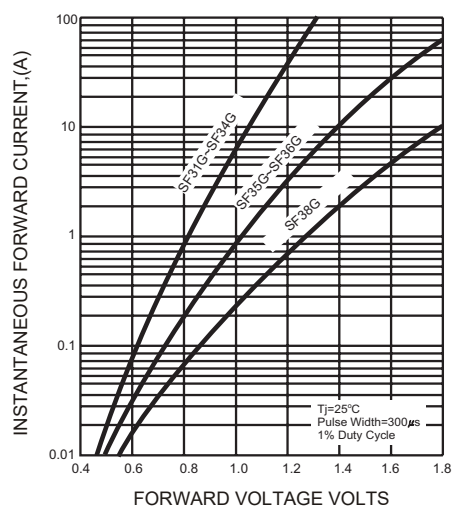


Fig. 3 Typical Forward Characteristics

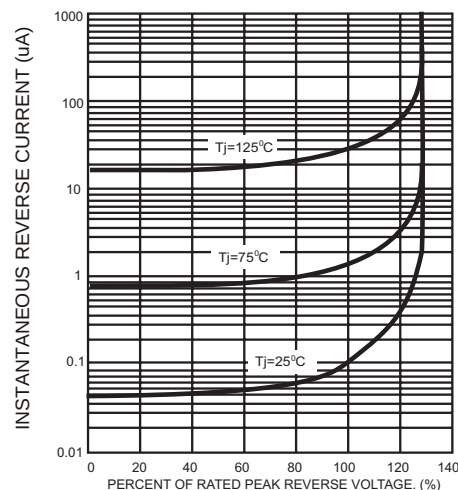


Fig. 4 Typical Reverse Characteristics

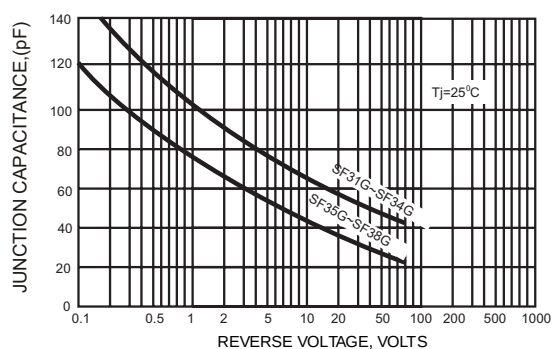
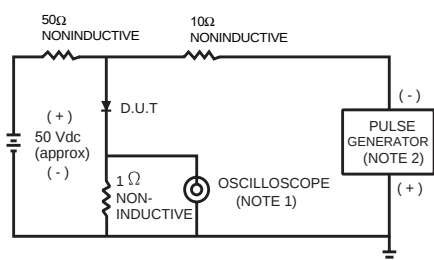


Fig. 5 Typical Junction Capacitance



NOTES:  
3. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.  
4. Rise time = 10 ns max; Source impedance = 50 ohms.

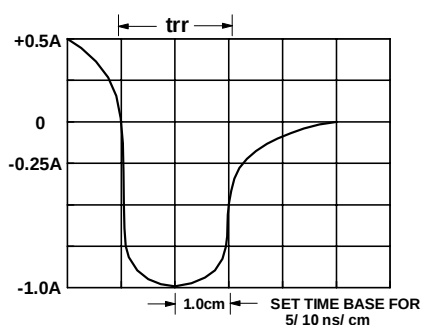


Fig. 6 Reverse Recovery Time Characteristic and Test Circuit

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### ORDER INFORMATION

- Packing information

| Part Number | Case     | Reel Size | QUANTITY |
|-------------|----------|-----------|----------|
| SF31G~SF38G | DO-201AD | 13 Inch   | 1200     |