



# SF31 thru SF39

Glass Passivated Super Fast Rectifiers  
Reverse Voltage 50 to 1000 Volts Forward Current 3.0 Amperes

## Features

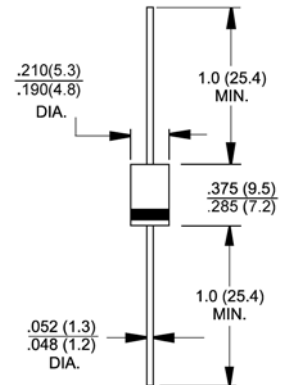
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High reliability
- ◆ High surge current capability



DO-201AD

## Mechanical Data

- ◆ Case: Molded plastic DO-201AD
- ◆ Epoxy: UL 94V-O rate flame retardant
- ◆ Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- ◆ Polarity: Color band denotes cathode end
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds .375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ◆ Mounting position: Any
- ◆ Weight: 0.042 ounce, 1.195 grams



## Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%

| Parameter                                                                                                 | Symbols                              | SF31        | SF32 | SF33 | SF34 | SF35 | SF36 | SF37 | SF38 | SF39 | Units    |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------|-------------|------|------|------|------|------|------|------|------|----------|
| Maximum repetitive peak reverse voltage                                                                   | V <sub>RRM</sub>                     | 50          | 100  | 150  | 200  | 300  | 400  | 600  | 800  | 1000 | Volts    |
| Maximum RMS voltage                                                                                       | V <sub>RMS</sub>                     | 35          | 70   | 105  | 140  | 210  | 280  | 420  | 560  | 700  | Volts    |
| Maximum DC blocking voltage                                                                               | V <sub>DC</sub>                      | 50          | 100  | 150  | 200  | 300  | 400  | 600  | 800  | 1000 | Volts    |
| Maximum average forward rectified current<br>.375" (9.5mm) lead length @T <sub>A</sub> =55°C              | I <sub>AV</sub>                      | 3.0         |      |      |      |      |      |      |      |      | Amps     |
| Peak forward surge current, 8.3ms single<br>half sine-wave superimposed on rated load<br>(JEDEC Method)   | I <sub>FSM</sub>                     | 125.0       |      |      |      |      |      |      |      |      | Amps     |
| Maximum instantaneous forward voltage @ 3.0A DC                                                           | V <sub>F</sub>                       | 0.95        |      |      |      | 1.3  |      | 1.7  |      |      | Volts    |
| Maximum DC reverse current @ T <sub>A</sub> =25°C<br>at rated DC blocking voltage @ T <sub>A</sub> =125°C | I <sub>R</sub>                       | 5.0         |      |      |      | 100  |      |      |      |      | µA<br>µA |
| Maximum reverse recovery time (Note 1)                                                                    | t <sub>rr</sub>                      | 35          |      |      |      |      |      |      |      |      | nS       |
| Typical junction capacitance (Note 2)                                                                     | C <sub>j</sub>                       | 100         |      |      |      | 80   |      |      |      |      | pF       |
| Typical thermal resistance                                                                                | R <sub>θJA</sub><br>R <sub>θJL</sub> | 25          |      |      |      | 8.0  |      |      |      |      | °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       |

- Notes:**
1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

# RATINGS AND CHARACTERISTIC CURVES

FIG.1- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

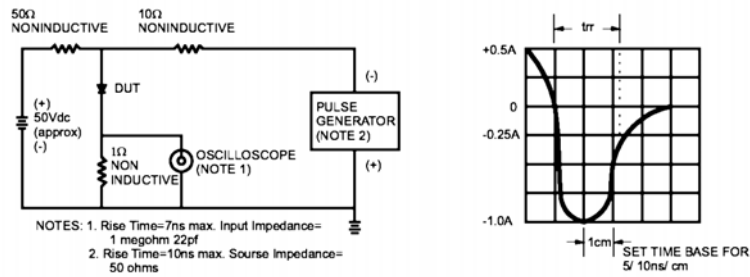


FIG.2- MAXIMUM AVERAGE FORWARD CURRENT DERATING

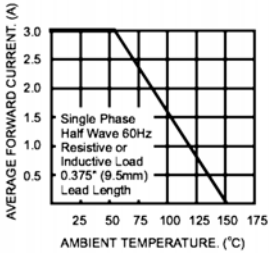


FIG.3- TYPICAL REVERSE CHARACTERISTICS

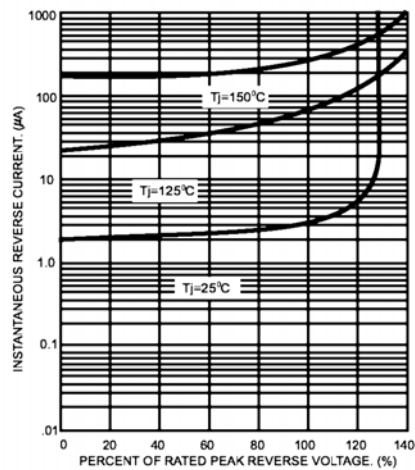


FIG.4- TYPICAL FORWARD CHARACTERISTICS

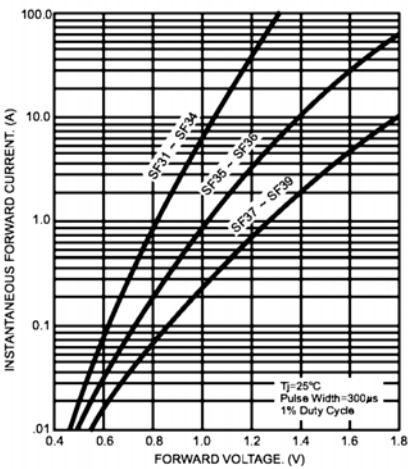


FIG.5- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

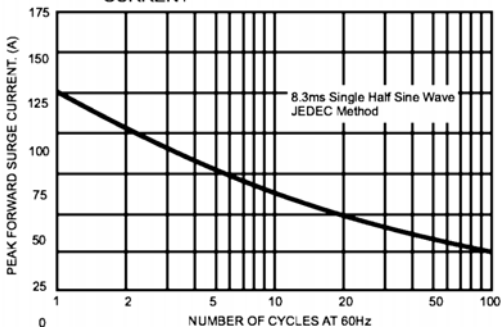


FIG.6- TYPICAL JUNCTION CAPACITANCE

