

# SF31G - SF39G

## GLASS PASSIVATED JUNCTION SUPER FAST RECTIFIERS

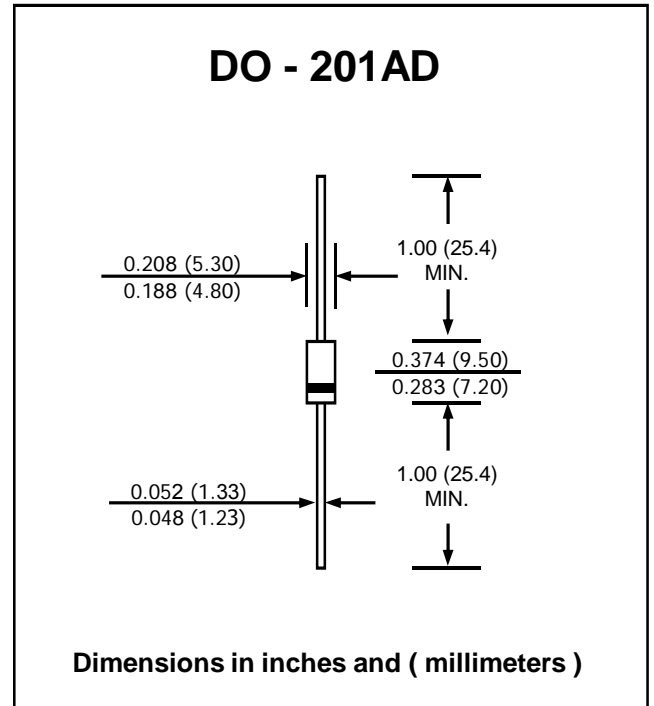
**PRV : 50 - 1000 Volts**  
**I<sub>o</sub> : 3.0 Amperes**

### FEATURES :

- \* Glass passivated junction chip
- \* High surge current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop
- \* Super fast recovery time
- \* Pb / RoHS Free

### MECHANICAL DATA :

- \* Case : DO-201AD Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 1.16 grams



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

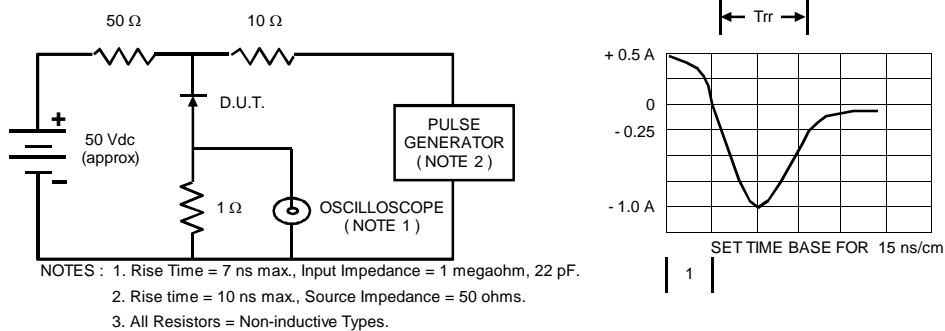
| RATING  | SYMBOL      | SF31G         | SF32G | SF33G | SF34G | SF35G | SF36G | SF37G | SF38G | SF39G | UNIT       |
|---|-------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$   | 50            | 100   | 150   | 200   | 300   | 400   | 600   | 800   | 1000  | V          |
| Maximum RMS Voltage   | $V_{RMS}$   | 35            | 70    | 105   | 140   | 210   | 280   | 420   | 560   | 700   | V          |
| Maximum DC Blocking Voltage   | $V_{DC}$    | 50            | 100   | 150   | 200   | 300   | 400   | 600   | 800   | 1000  | V          |
| Maximum Average Forward Current<br>0.375"(9.5mm) Lead Length $T_a = 55^\circ C$                                 | $I_{F(AV)}$ | 3.0           |       |       |       |       |       |       |       |       | A          |
| Maximum Peak Forward Surge Current,<br>8.3ms Single half sine wave Superimposed<br>on rated load (JEDEC Method) | $I_{FSM}$   | 65            |       |       |       |       |       |       |       |       | A          |
| Maximum Peak Forward Voltage at $I_F = 3.0 A$ .   | $V_F$       | 0.95          |       |       | 1.7   |       |       | 4.0   |       |       | V          |
| Maximum DC Reverse Current $T_j = 25^\circ C$<br>at Rated DC Blocking Voltage $T_j = 100^\circ C$               | $I_R$       | 10            |       |       |       |       |       |       |       |       | $\mu A$    |
|   | $I_{R(H)}$  | 500           |       |       |       |       |       |       |       |       |            |
| Maximum Reverse Recovery Time ( Note 1 )  | $T_{rr}$    | 35            |       |       |       |       |       |       |       |       | ns         |
| Typical Junction Capacitance ( Note 2 )   | $C_J$       | 50            |       |       |       |       |       |       |       |       | pf         |
| Junction Temperature Range  | $T_J$       | - 65 to + 150 |       |       |       |       |       |       |       |       | $^\circ C$ |
| Storage Temperature Range   | $T_{STG}$   | - 65 to + 150 |       |       |       |       |       |       |       |       | $^\circ C$ |

#### Notes :

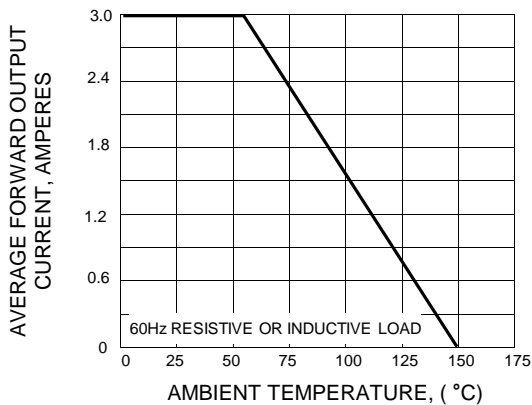
- ( 1 ) Reverse Recovery Test Conditions :  $I_F = 0.5 A$ ,  $I_R = 1.0 A$ ,  $I_{rr} = 0.25 A$ .
- ( 2 ) Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC

## RATING AND CHARACTERISTIC CURVES ( SF31G - SF39G )

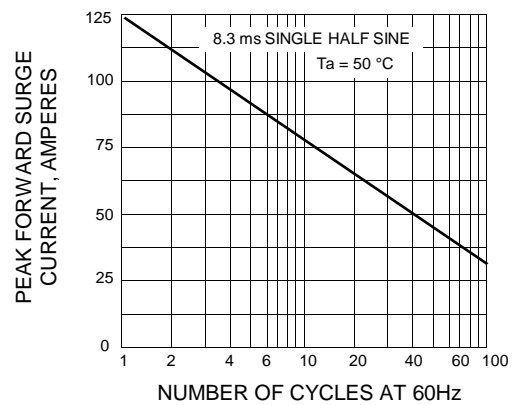
**FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



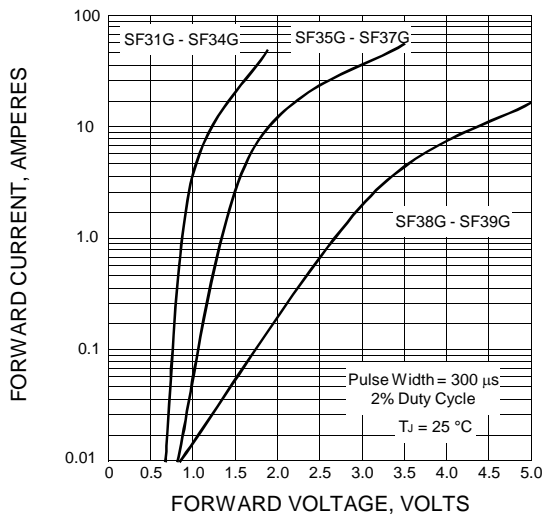
**FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**



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



**FIG.4 - TYPICAL FORWARD CHARACTERISTICS**



**FIG.5 - TYPICAL REVERSE CHARACTERISTICS**

