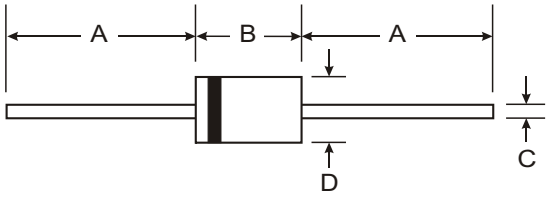
# SF30AG - SF30JG

## 3.0A SUPER-FAST GLASS PASSIVATED RECTIFIER

## Features

- Glass Passivated Die Construction
- Diffused Junction
- Super-Fast Switching for High Efficiency
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 125A Peak Low Reverse Leakage Current
- Plastic Material: UL Flammability Classification Rating 94V-0




## Mechanical Data

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking: Type Number
- Weight: 1.12 grams (approx.)
- Mounting Position: Any

| DO-201AD | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 25.40 | — |
| **B** | 7.20 | 9.50 |
| **C** | 1.20 | 1.30 |
| **D** | 4.80 | 5.30 |
| **All Dimensions in mm** | | |

## Maximum Ratings and Electrical Characteristics

@ $T_A$ = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | SF30 AG | SF30 BG | SF30 CG | SF30 DG | SF30 FG | SF30 GG | SF30 HG | SF30 JG | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 100 | 140 | 210 | 280 | 350 | 420 | V |
| Average Rectified Output Current (Note 1) @ $T_A$ = 55°C | $I_O$ | 3.0 | | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method) | $I_{FSM}$ | 125 | | | | | | | | A |
| Forward Voltage @ $I_F$ = 3.0A | $V_{FM}$ | 0.95 | | | | 1.3 | | 1.5 | | V |
| Peak Reverse Current @ $T_A$ = 25°C<br>at Rated DC Blocking Voltage @ $T_A$ = 100°C | $I_{RM}$ | 5.0<br>100 | | | | | | | | μA |
| Reverse Recovery Time (Note 3) | $t_{rr}$ | 35 | | | | 40 | | 50 | | ns |
| Typical Junction Capacitance (Note 2) | $C_j$ | 75 | | | | | | 50 | | pF |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 32 | | | | | | | | K/W |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -65 to +150 | | | | | | | | °C |

Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Measured with $I_F$ = 0.5A, $I_R$ = 1.0A, $I_{rr}$ = 0.25A. See Figure 5.

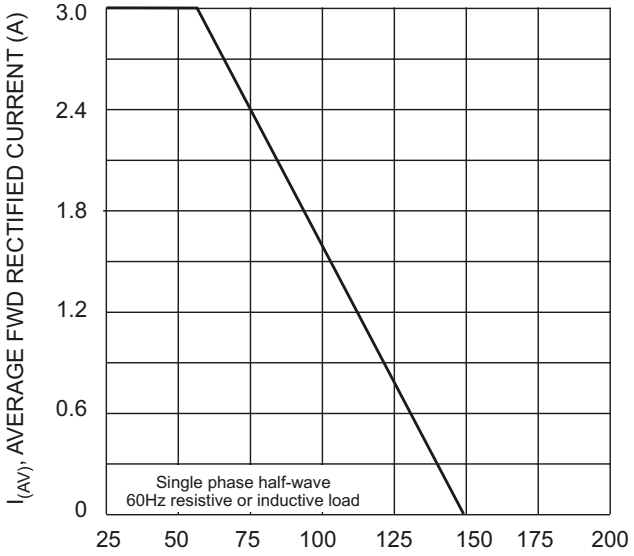



Fig. 1 Forward Current Derating Curve

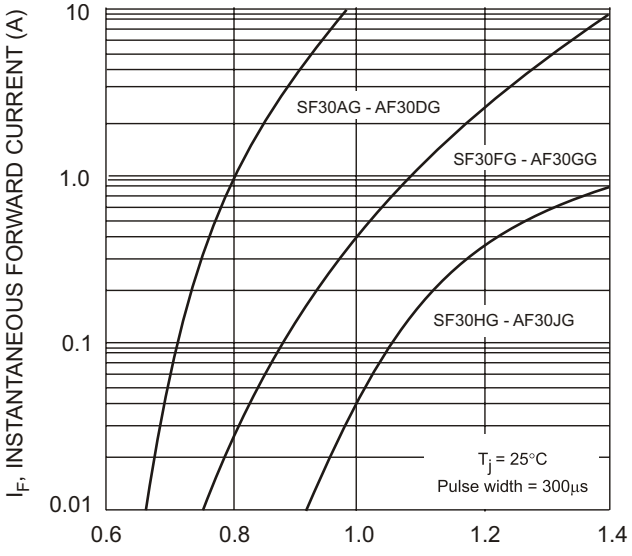



Fig. 2 Typical Forward Characteristics

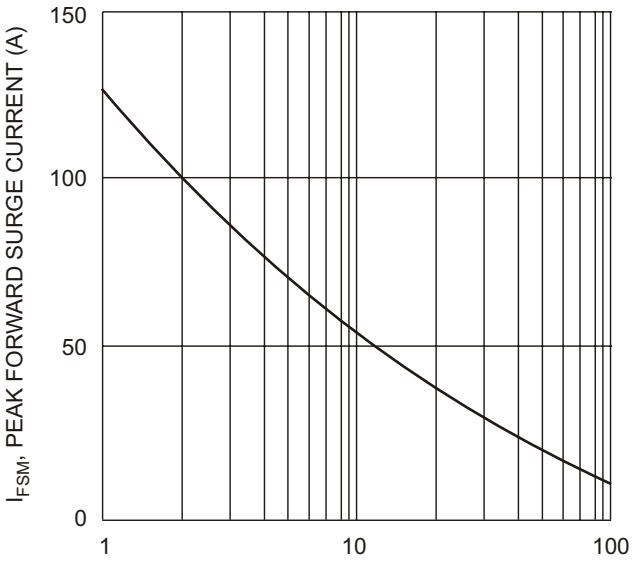



Fig. 3 Peak Forward Surge Current

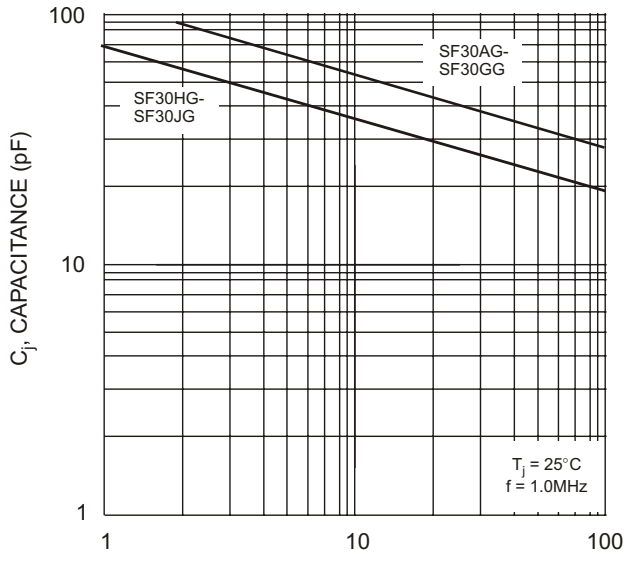
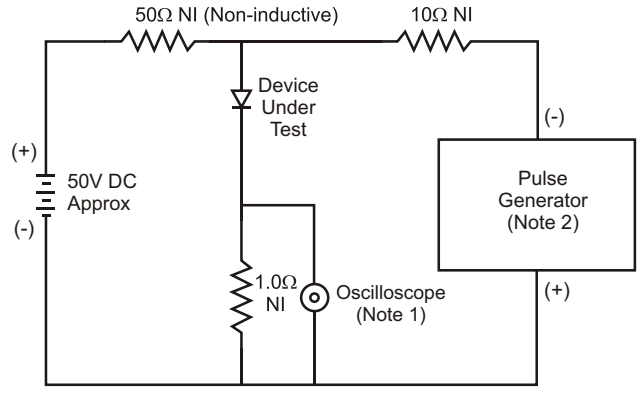



Fig. 4 Typical Junction Capacitance




Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.

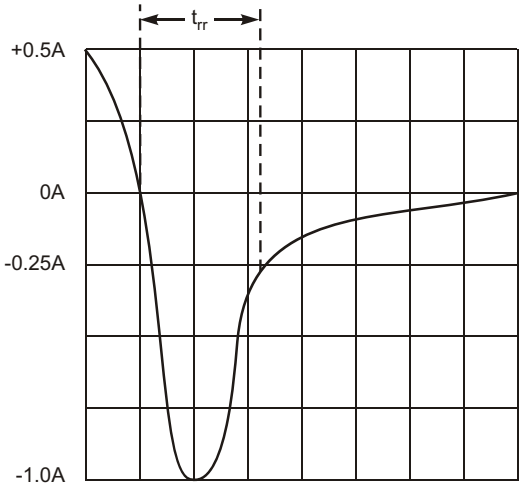



Fig. 5 Reverse Recovery Time Characteristic and Test Circuit