

SF51 - SF56

5.0 AMPS. Super Fast Rectifiers

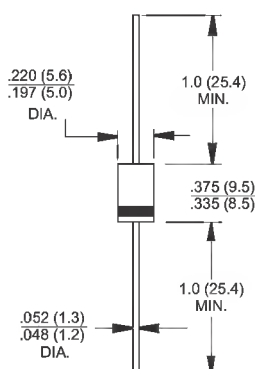
DO-201AD

Features

- ✦ High efficiency, low VF
- ✦ High current capability
- ✦ High reliability
- ✦ High surge current capability
- ✦ Low power loss.
- ✦ For use in low voltage, high frequency inverter, free wheeling, and polarity protection application
- ✦ Green compound with suffix "G" on packing code & prefix "G" on datecode.

Mechanical Data

- ✦ Case: Molded plastic
- ✦ Epoxy: UL 94V-0 rate flame retardant
- ✦ Lead: Pure tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✦ Polarity: Color band denotes cathode
- ✦ High temperature soldering guaranteed: 260°C/10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✦ Mounting position: Any
- ✦ Weight: 1.2 grams



Dimensions in inches and (millimeters)

Marking Diagram



- SF5X = Specific Device Code
- G = Green Compound
- Y = Year
- WW = Work Week

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%

| Type Number | Symbol | SF 51 | SF 52 | SF 53 | SF 54 | SF 55 | SF 56 | Units |
|--|--------------------------------------|-------------|-------|-------|-------|-------|-------|-------|
| Maximum Recurrent Peak Reverse Voltage | VRRM | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum RMS Voltage | VRMS | 35 | 70 | 105 | 140 | 210 | 280 | V |
| Maximum DC Blocking Voltage | VDC | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum Average Forward Rectified Current .375 (9.5mm) Lead Length @T _A = 55 °C | I(AV) | 5.0 | | | | | | A |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | IFSM | 150 | | | | | | A |
| Maximum Instantaneous Forward Voltage @ 5.0A | V _F | 0.975 | | 1.3 | | | V | |
| Maximum DC Reverse Current @ T _A =25 °C at Rated DC Blocking Voltage @ T _A =100 °C | I _R | | | 5.0 | | | uA | |
| | | | | 100 | | | uA | |
| Maximum Reverse Recovery Time (Note 1) | T _{rr} | 35 | | | | | | nS |
| Typical Junction Capacitance (Note 2) | C _j | 120 | | | 60 | | | pF |
| Typical Thermal Resistance (Note 3) | R _{θJA} R _{θJL} | | | | 20 | | | °C/W |
| | | | | | 5.0 | | | |
| Operating Temperature Range | T _J | -65 to +125 | | | | | | °C |
| Storage Temperature Range | T _{STG} | -65 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 MHz and Applied Reverse Voltage of 4.0 V D.C.
 3. Mount on Cu-Pad Size 16mm x 16mm on P.C.B

RATINGS AND CHARACTERISTIC CURVES (SF51 THRU SF56)

FIG.1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

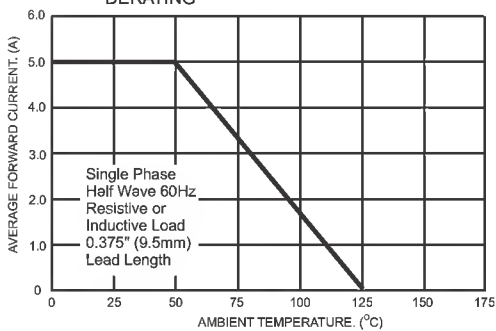


FIG.2- TYPICAL REVERSE CHARACTERISTICS

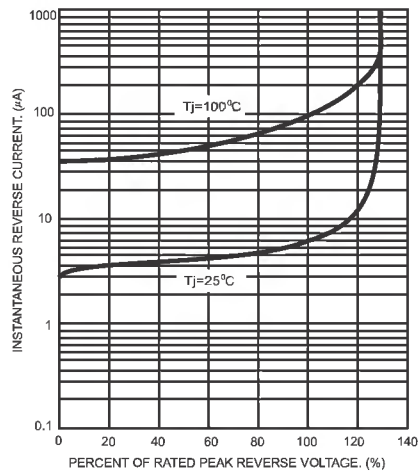


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

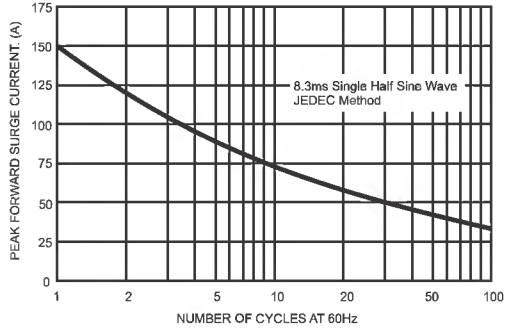


FIG.5- TYPICAL FORWARD CHARACTERISTICS

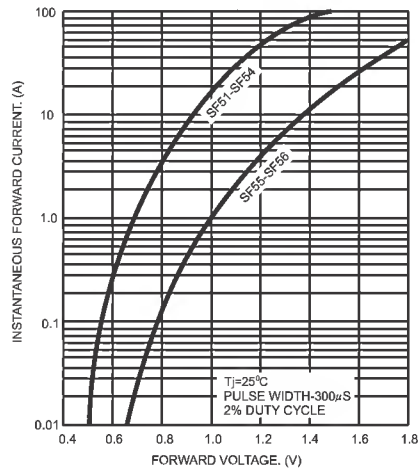


FIG.4- TYPICAL JUNCTION CAPACITANCE

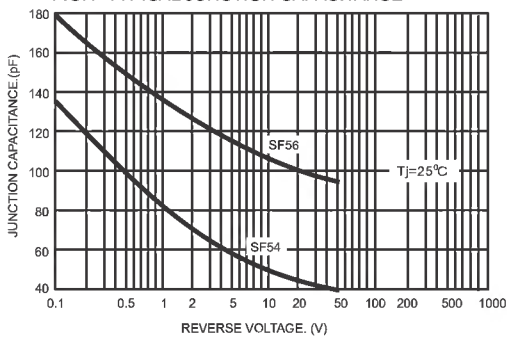
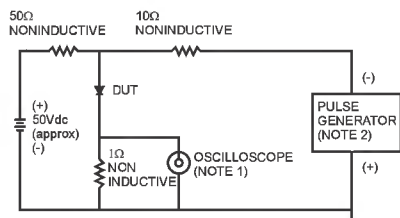


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance=1 megohm 22pf
2. Rise Time=10ns max. Source Impedance=50 ohms

