ELECTRONIC

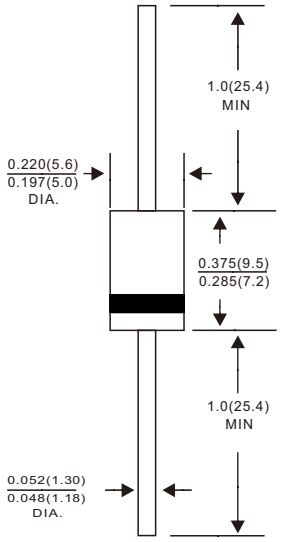
CHANGZHOU LANGJIE ELECTRONIC CO. , LTD

# SF51 THRU SF58

## SUPER FAST RECTIFIER

*Reverse Voltage - 50 to 600 Volts Forward Current - 5.0 Amperes*

DO-201AD




*Dimensions in inches and (millimeters)*

## FEATURES

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Super fast switching for high efficiency
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 260 °C/10 seconds,0.375"(9.5mm) lead length, 5 lbs. (2.3kg) tension

## MECHANICAL DATA

**Case**: JEDEC DO-201AD molded plastic body
**Terminals**: Solder plated , solderable per MIL-STD-750, Method 2026
**Polarity**: Color band denotes cathode end
**Mounting Position**: Any
**Weight**:0.04 ounce, 1.10 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 current derate by 20%.

| | *SYMBOLS* | SF51 | SF52 | SF53 | SF54 | SF55 | SF56 | SF58 | **UNITS** |
|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | VOLTS |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | 210 | 280 | 420 | VOLTS |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | VOLTS |
| Maximum average forward rectified current 0.375"(9.5mm) lead length at $T_A$= 50 °C | $I_{(AV)}$ | 5.0 | | | | | | | Amps |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 180 | | | | | | | Amps |
| Maximum instantaneous forward voltage at 3.0A | $V_F$ | 0.95 | | | | 1.25 | | 1.7 | Volts |
| Maximum DC reverse current $T_A$=25 °C at rated DC blocking voltage $T_A$=100 °C | $I_R$ | 10.0<br>300.0 | | | | | | | uA |
| Maximum reverse recovery time (NOTE 1) | $t_{rr}$ | 35 | | | | | | | ns |
| Typical junction capacitance (NOTE 2) | $C_J$ | 100.0 | | | | 50.0 | | | pF |
| Typical thermal resistance (NOTE 3) | $R_{\theta JA}$ | 30.0 | | | | | | | °C/W |
| Operating junction temperature range | $T_J$ | -55 to +125 | | | | | | | °C |
| Storage temperature range | $T_{STG}$ | -55 to +150 | | | | | | | °C |

**Note:**1.Reverse recovery condition $I_F$=0.5A,$I_R$=1.0A,Irr=0.25A
2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
3.Thermal resistance from junction to ambient at 0.375"(9.5mm)lead length,P.C.B. mounted

# RATINGS AND CHARACTERISTIC CURVES SF51 THRU SF58

FIG. 1- FORWARD CURRENT DERATING CURVE

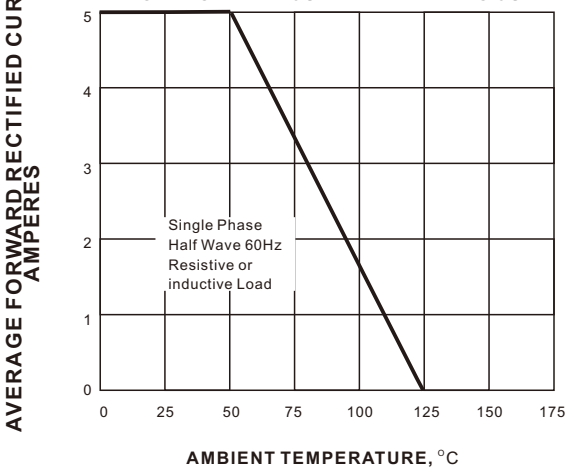



FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

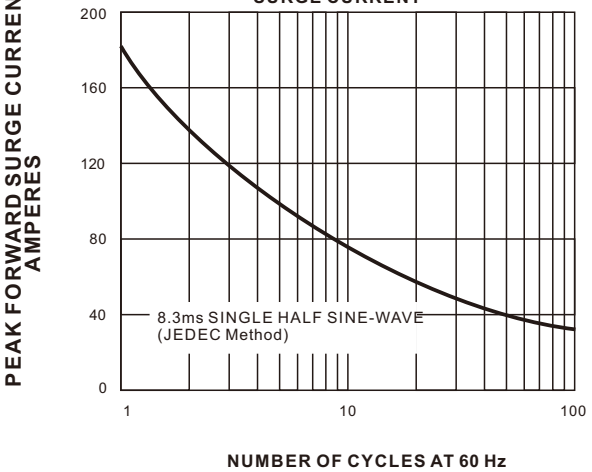



FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

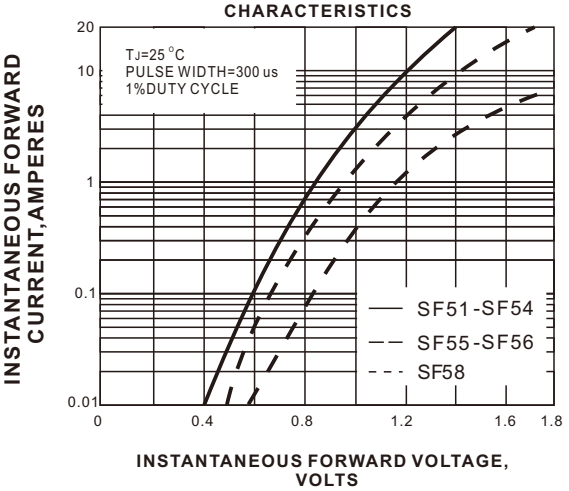



FIG. 4-TYPICAL REVERSE CHARACTERISTICS

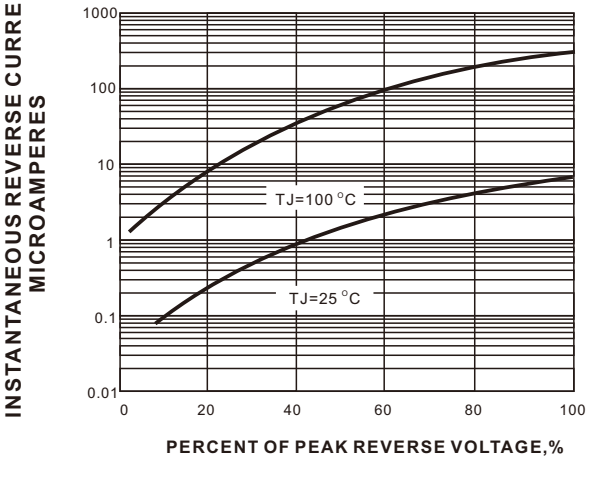



FIG. 5-TYPICAL JUNCTION CAPACITANCE

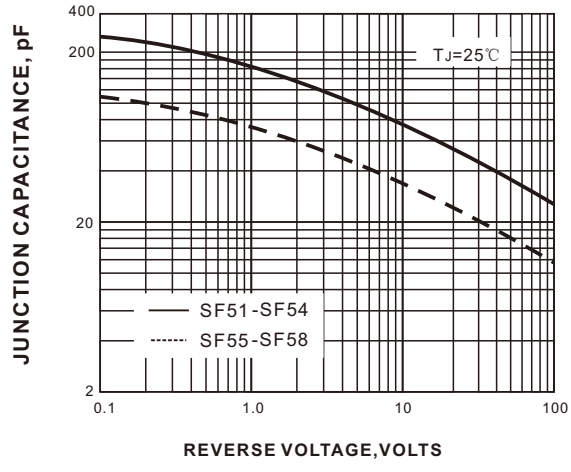



FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE