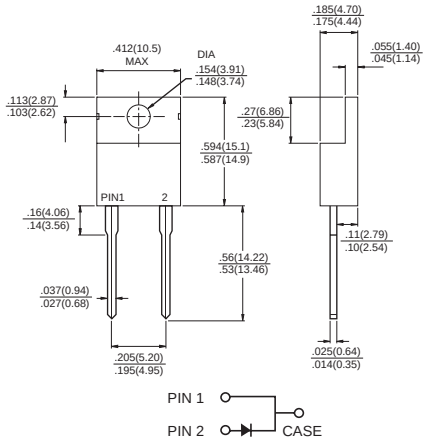
# SF81-SF84

8.0A Super Fast Recovery Rectifier

## TO-220AC




**Dimensions in inches and (millimeters)**

## Features

- ✧ Low Leakage
- ✧ Low Forward Voltage Drop
- ✧ High Current Capability
- ✧ Super-fast Switching Speed < 35ns
- ✧ Plastic Material - UL Flammability Classification 94V-0
- ✧ Good for 200KHz Power Supplier

## Mechanical Data

- ✧ Case: TO-220AC, Molded Plastic
- ✧ Approx Weight: 2.24 grams
- ✧ Mounting Position: Any

## 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, derated current 20%.

| Type Number | Symbol | SF81 | SF82 | SF83 | SF84 | Unit |
|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | V |
| Maximum DC Blocking voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | V |
| Maximum Average Forward Rectified Current @ $T_C$ = 125°C | $I_{(AV)}$ | 8.0 | | | | A |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FM}$ | 125 | | | | A |
| Maximum Instantaneous Forward Voltage at 8.0A DC | $V_F$ | 0.975 | | | | V |
| Maximum DC Reverse Current @ $T_A$ = 25°C<br>at Rated DC Blocking Voltage @ $T_A$ = 100°C | $I_R$ | 10<br>150 | | | | $\mu$A |
| Typical Thermal Resistance | $R_{\theta JC}$ | 3 | | | | °C/W |
| Maximum Reverse Recovery Time (Note 2) | $T_{rr}$ | 35 | | | | ns |
| Typical Junction Capacitance (Note 3) | $C_J$ | 65 | | | | pF |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +175 | | | | °C |

Notes: 1.Thermal Resistance Junction to Ambient Vertical PC Board Mounting 12.7 mm Lead Length.
2. Reverse Recovery Test Conditions: $I_F$ =0.5 A, $I_R$ =1.0 A, $I_{RR}$=0.25A
3. Measured at 1.0MHz and applied reverse voltage of 4.0V.

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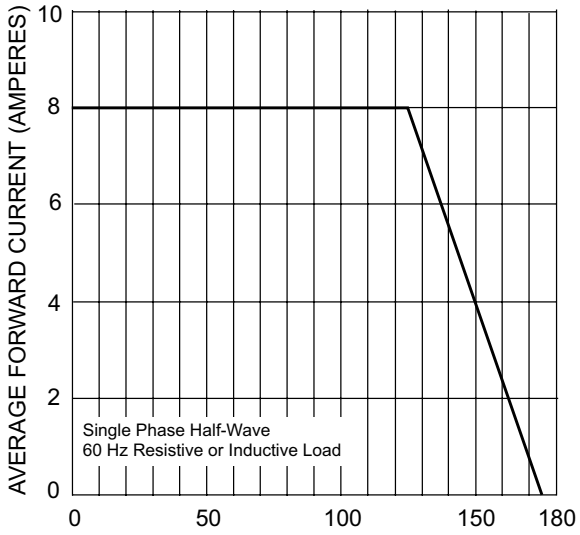


Fig. 1 Forward Current Derating Curve

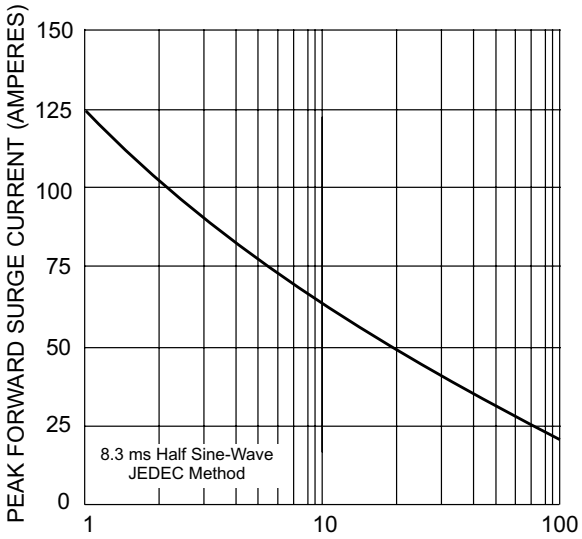


Fig. 2 Maximum Non-Repetitive Surge Current

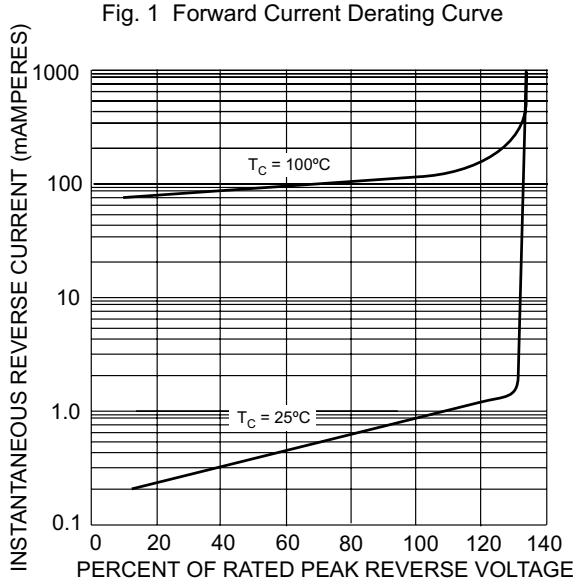


Fig. 3 Typical Reverse Characteristics

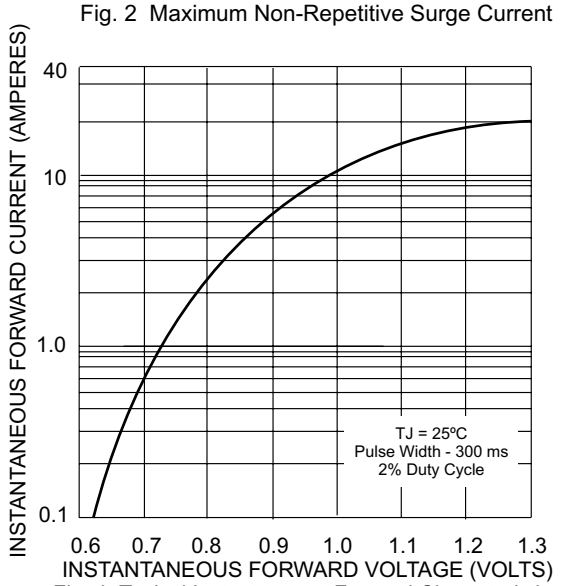


Fig. 4 Typical Instantaneous Forward Characteristics

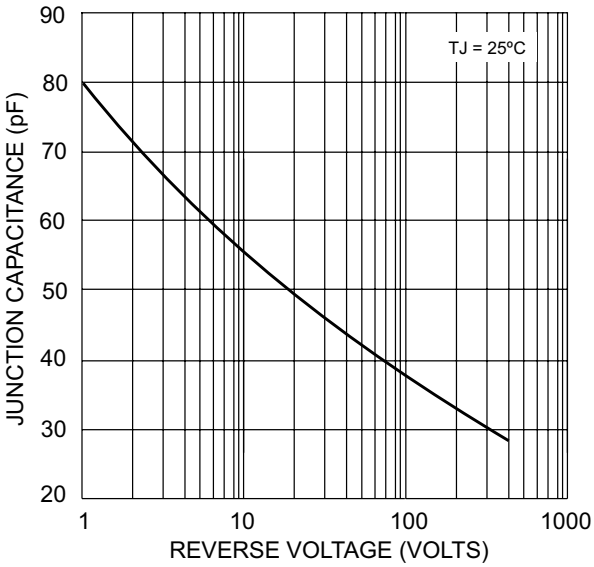


Fig. 5 Typical Junction Capacitance