**RECTRON**
**SEMICONDUCTOR**
**TECHNICAL SPECIFICATION**

# ISF81 THRU ISF87

## *GLASS PASSIVATED SUPER FAST RECTIFIER*

***VOLTAGE RANGE 50 to 600 Volts CURRENT 8.0 Amperes***

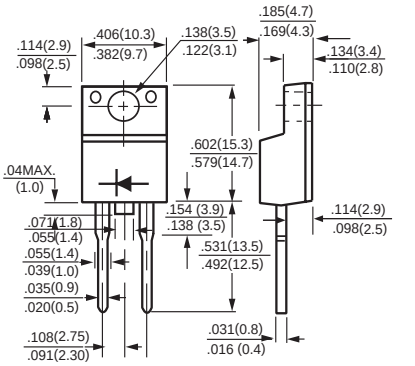
### FEATURES

* Low switching noise
* Low forward voltage drop
* Low thermal resistance
* High current capability
* Super fast switching speed
* High reliability
* Good for switching mode circuit

### MECHANICAL DATA

* Case: ITO-220 molded plastic
* Epoxy: Device has UL flammability classification 94V-O
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 2.24 grams

**ITO-220A**




Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings 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%.

**MAXIMUM RATINGS** (At $T_A$ = 25°C unless otherwise noted)

| RATINGS | SYMBOL | ISF81 | ISF82 | ISF83 | ISF84 | ISF85 | ISF86 | ISF87 | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent 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 at $T_C$ = 100°C | $I_O$ | 8.0 | | | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 125 | | | | | | | Amps |
| Typical Thermal Resistance | $R_{\theta JC}$ | 3 | | | | | | | °C/W |
| Typical Junction Capacitance (Note 2) | $C_J$ | 50 | | | | 30 | | | pF |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -55 to + 150 | | | | | | | °C |

**ELECTRICAL CHARACTERISTICS** (At $T_A$ = 25°C unless otherwise noted)

| CHARACTERISTICS | | SYMBOL | ISF81 | ISF82 | ISF83 | ISF84 | ISF85 | ISF86 | ISF87 | UNITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage at 8.0A DC | | $V_F$ | 1.0 | | | | 1.35 | | 1.70 | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | @$T_C$ = 25°C | $I_R$ | 10 | | | | | | | uAmps |
| | @$T_C$ = 100°C | | 500 | | | | | | | |
| Maximum Reverse Recovery Time (Note 1) | | trr | 35 | | | | 50 | | | nSec |

NOTES : 1. Test Conditions: IF = 0.5A, IR = -1.0A, IRR = -0.25A
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. Suffix "R" for Reverse Polarity.

2002-12

# RATING AND CHARACTERISTIC CURVES ( ISF81 THRU ISF87 )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

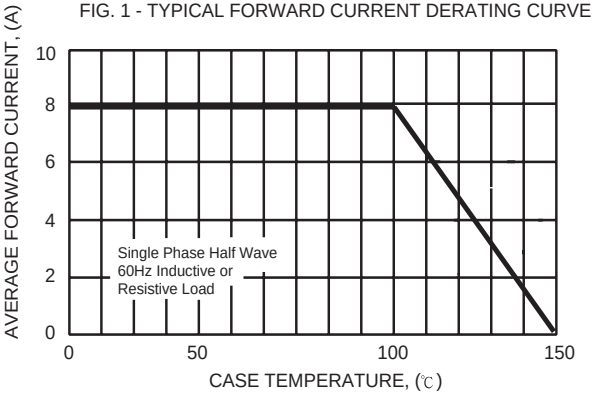



FIG. 2 - TYPICAL REVERSE CHARACTERISTICS

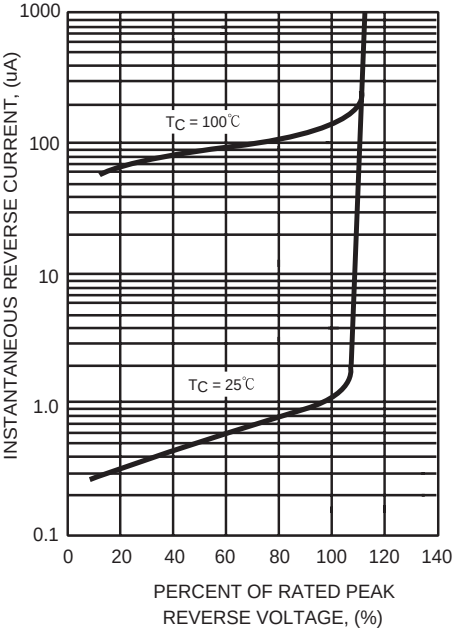



FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

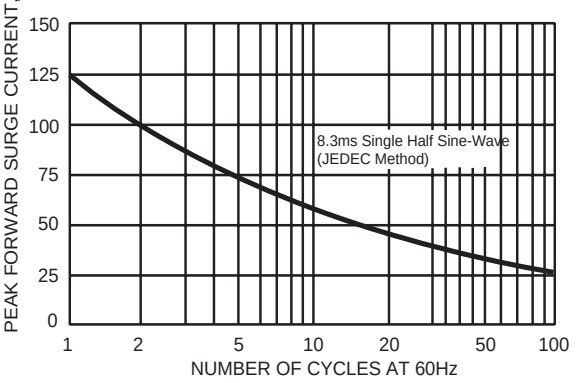
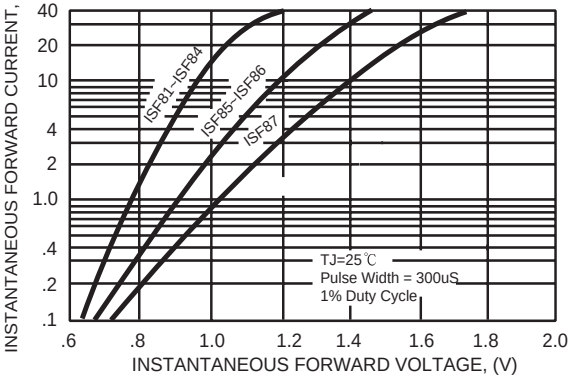



FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



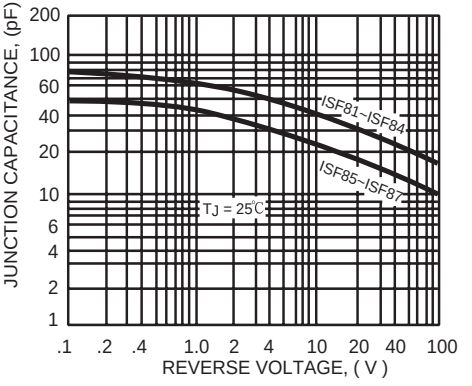


FIG. 5 - TYPICAL JUNCTION CAPACITANCE