# F1 THRU F7

1.0 AMP SURFACE MOUNT FAST RECTIFIERS

## FEATURES

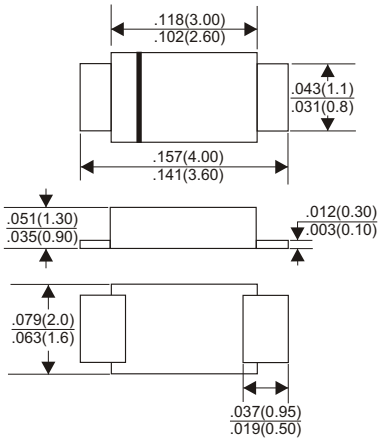
* The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
* Idea for printed circuit board
* Glass passivated Junction chip
* Low reverse leakage
* High forward surge current capability
* High temperature soldering guaranteed 250˚C/10 seconds at terminals

## MECHANICAL DATA

* **Case:** SOD-123FL, molded plastic
* **Terminals:** plated leads solderable per MIL-STD-750, Method 2026
* **Polarity:** Polarity symbol marking on body
* **Mounting position:** Any

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
1.0 Amperes

**SOD-123FL**




Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25˚C ambient temperature uniess otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| TYPE NUMBER | F1 | F2 | F3 | F4 | F5 | F6 | F7 | UNITS |
|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current at $T_L$=65˚C | 1.0 | | | | | | | A |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 25 | | | | | | | A |
| Maximum Instantaneous Forward Voltage at 1.0A | 1.3 | | | | | | | V |
| Maximum DC Reverse Current Ta=25˚C | 5.0 | | | | | | | μA |
| at Rated DC Blocking Voltage Ta=125˚C | 500 | | | | | | | μA |
| Maxinum Reverse recovery time (Note1) | 150 | | | | 250 | 500 | | nS |
| Typical Junction Capacitance (Note2) | 9.0 | | | | | | | pF |
| Typical Thermal Resistance RθJA | 85 | | | | | | | ˚C/W |
| Operating and Storage Temperature Range $T_J$, $T_{STG}$ | -55 — +150 | | | | | | | ˚C |

**NOTES:**

1. Reverse recovery time test 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.

RATING AND CHARACTERISTIC CURVES (F1 THRU F7)

**FIG. 1- DERATING CURVE OUTPUT RECTIFIED CURRENT**

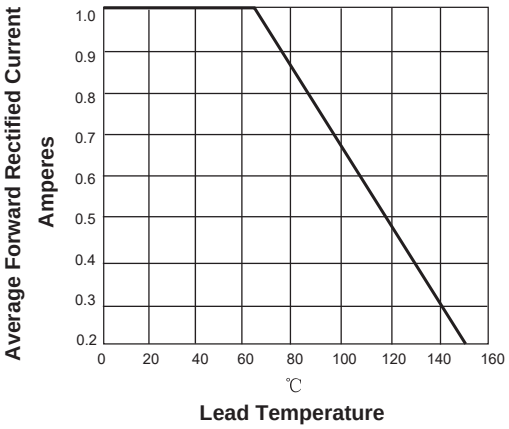



**FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PERLEG**

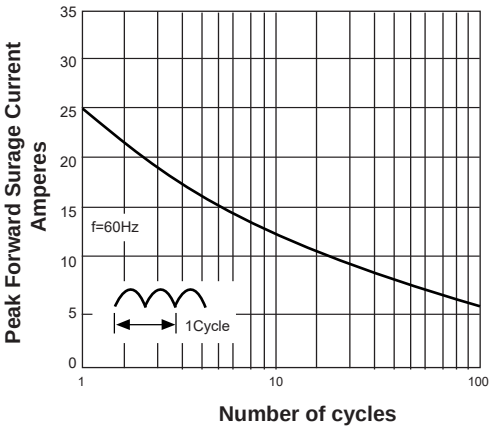



**FIG. 3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS**

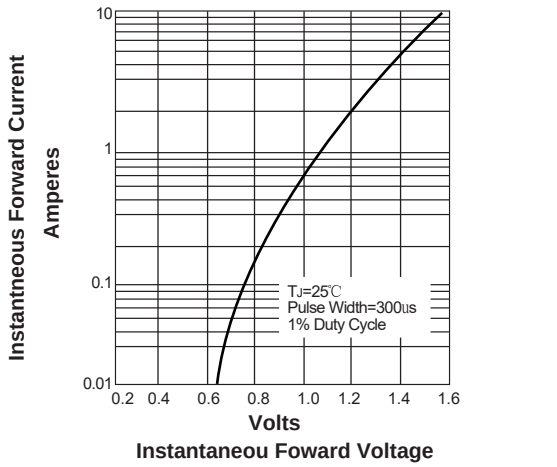
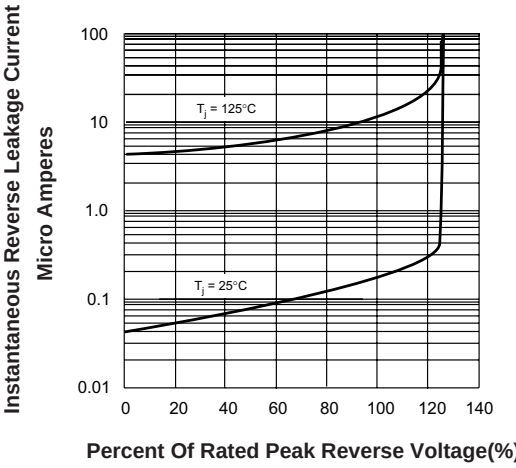
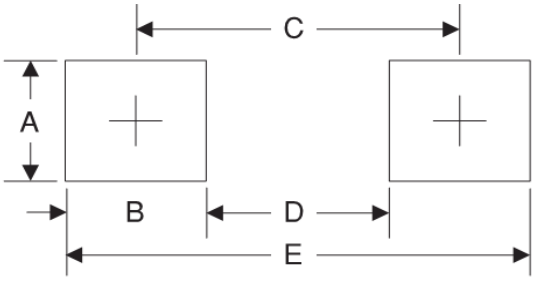



**FIG. 4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS**




## Suggested Pad Layout




| Symbol | Unit (mm) | Unit (inch) |
|---|---|---|
| A | 1.2 | 0.048 |
| B | 1.15 | 0.045 |
| C | 3.10 | 0.122 |
| D | 1.95 | 0.077 |
| E | 4.25 | 0.167 |