

SURFACE MOUNT FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 600 Volts CURRENT 1.0 Ampere

FEATURES

- * Fast switching
- * Low leakage
- * Low forward voltage drop
- * High current capability
- * High current surge
- * High reliability

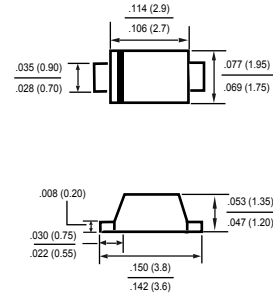
MECHANICAL DATA

- * Epoxy: Device has UL flammability classification 94V-0
- * Mounting position: Any
- * Weight: 0.016 gram

NEW RELEASE



SOD-123F



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 (@ TA=25 °C unless otherwise noted)

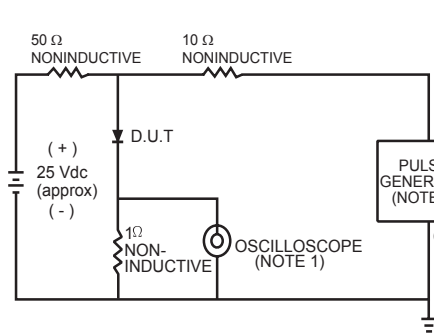
| RATINGS | SYMBOL | SF1 | SF2 | SF3 | SF4 | SF5 | UNITS |
|---|-----------------------------------|--------------|-----|-----|-----|-----|-------|
| Maximum Recurrent Peak Reverse Voltage | V _{RRM} | 50 | 100 | 200 | 400 | 600 | Volts |
| Maximum RMS Voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | Volts |
| Maximum DC Blocking Voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | Volts |
| Maximum Average Forward Rectified Current at T _A = 55°C | I _O | 1.0 | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I _{FSM} | 20 | | | | | Amps |
| Typical Thermal Resistance (Note 4) | R _{θJA} | 32 | | | | | °C/W |
| | R _{θJL} | 150 | | | | | |
| Typical Junction Capacitance (Note 2) | C _J | 15 | | | | | pF |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to + 150 | | | | | °C |

ELECTRICAL CHARACTERISTICS (@TA=25 °C unless otherwise noted)

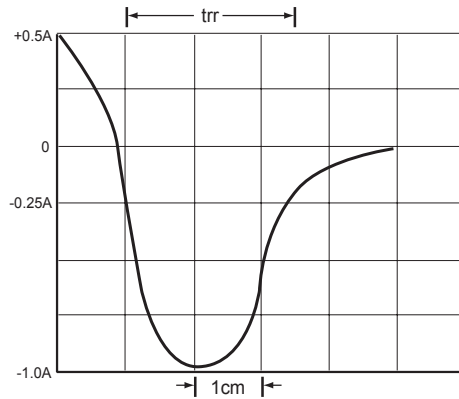
| CHARACTERISTICS | SYMBOL | SF1 | SF2 | SF3 | SF4 | SF5 | UNITS |
|--|-----------------|-----|-----|-----|-----|-----|-------|
| Maximum Instantaneous Forward Voltage at 1.0ADC | V _F | 1.3 | | | | | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage T _A = 25°C | I _R | 2.0 | | | | | μAmps |
| Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T _L = 55°C | | 100 | | | | | μAmps |
| Maximum Reverse Recovery Time (Note 1) | t _{rr} | 150 | | | | 250 | nSec |

- 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 volts
 3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".
 4. Thermal Resistance : Mounted on PCB.

RATING AND CHARACTERISTICS CURVES (SF1 THRU SF5)



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



SET TIME BASE FOR 50/100 ns/cm

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

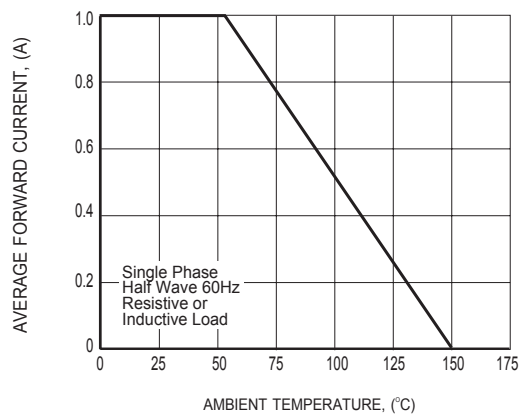


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

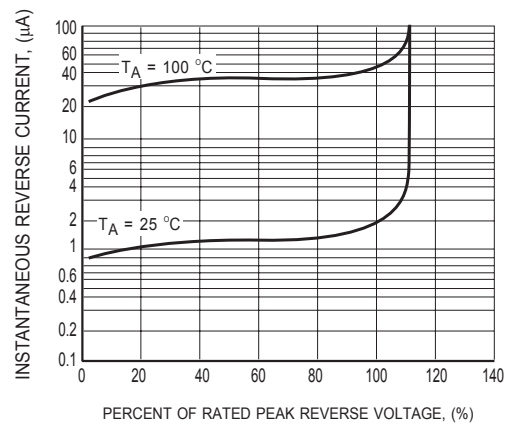


FIG.3 TYPICAL REVERSE CHARACTERISTICS

RATING AND CHARACTERISTICS CURVES (SF1 THRU SF5)

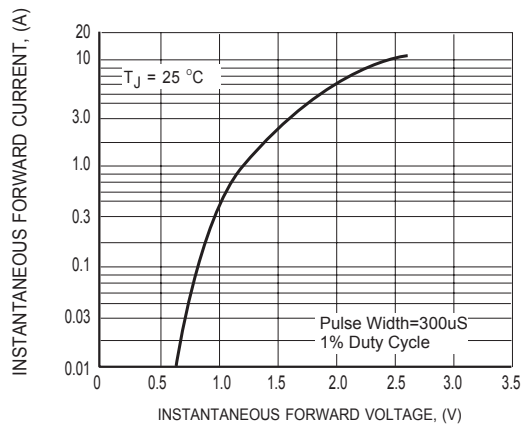


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

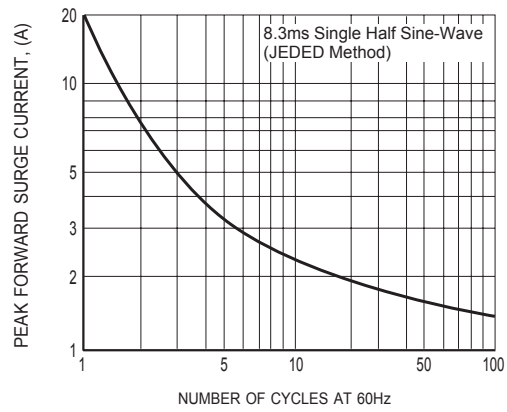


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

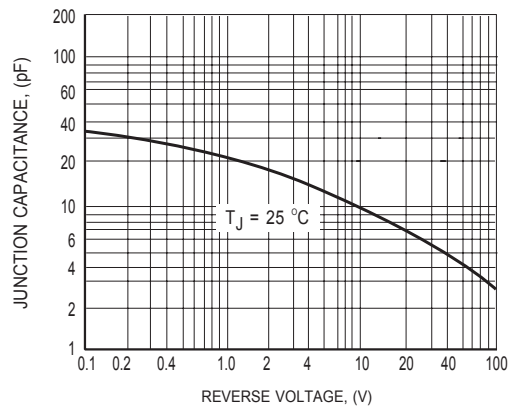
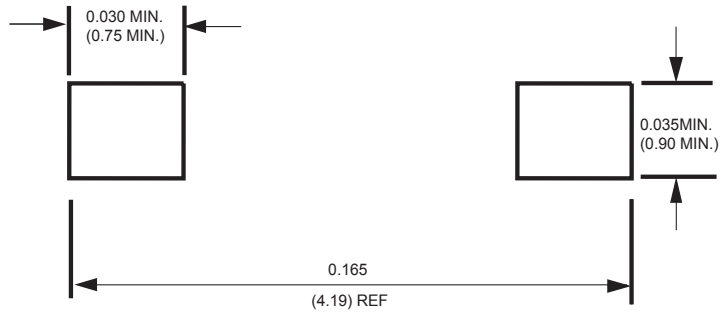


FIG.6 TYPICAL JUNCTION CAPACITANCE

Mounting Pad Layout



Dimensions in inches and (millimeters)

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