

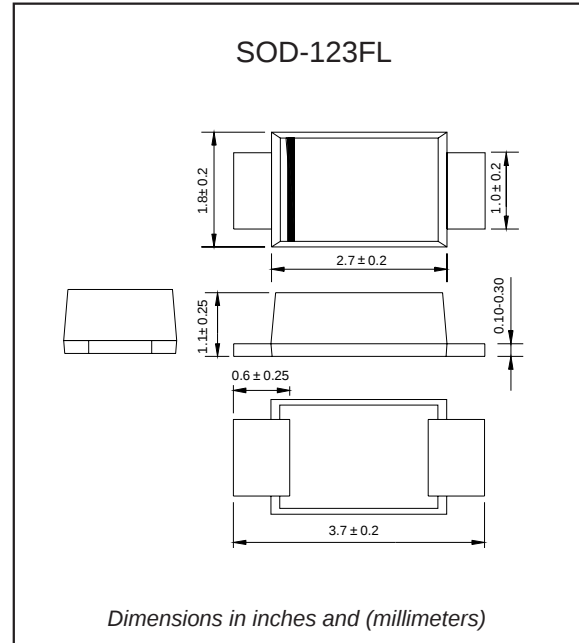
Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 260°C/10 seconds at terminals
- ◆ Glass passivated chip junction

Mechanical data

- ◆ **Case:** JEDEC SOD-123FL molded plastic body
- ◆ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ **Polarity:** Color band denotes cathode end
- ◆ **Mounting Position:** Any

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	US1001FL	US1002FL	US1004FL	US1006FL	US1008FL	UNITS
Maximum repetitive peak reverse voltage	V _{RRM}	100	200	400	600	1000	V
Maximum RMS voltage	V _{RMS}	70	140	280	420	700	V
Maximum DC blocking voltage	V _{DC}	100	200	400	600	1000	V
Maximum average forward rectified current at T _L =100°C	I _(AV)	1.0					A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	30					A
Maximum instantaneous forward voltage at 1.0A	V _F	1.0		1.4	1.7		V
Maximum DC reverse current T _A =25°C at rated DC blocking voltage T _A =100°C	I _R	5.0 50.0					μA
Maximum reverse recovery time (NOTE 1)	t _{rr}	50			75		ns
Typical junction capacitance (NOTE 2)	C _J	20.0					pF
Typical thermal resistance (NOTE 3)	R _{θJA}	85.0					°C/W
Operating junction and storage temperature range	T _J ,T _{STG}	-55 to +150					°C

Note: 1. Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

Rating and characteristic curves

FIG.1-TYPICAL FORWARD

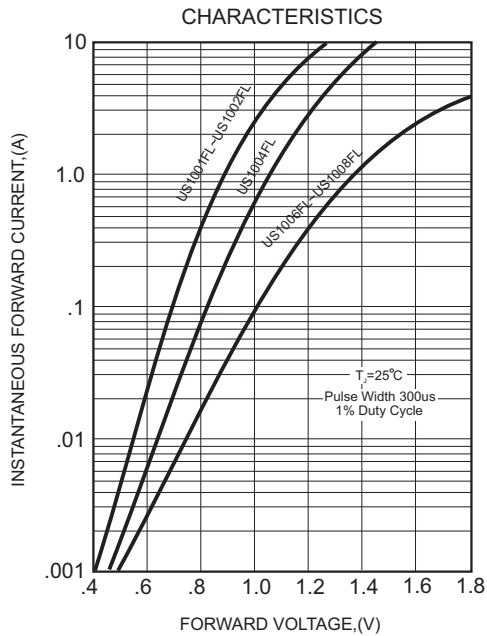


FIG.2-TYPICAL FORWARD CURRENT
DERATING CURVE

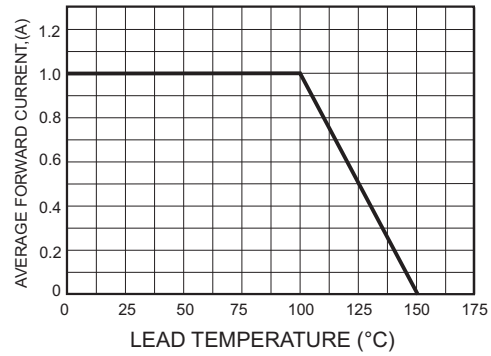


FIG.4-MAXIMUM NON-REPETITIVE FORWARD
SURGE CURRENT

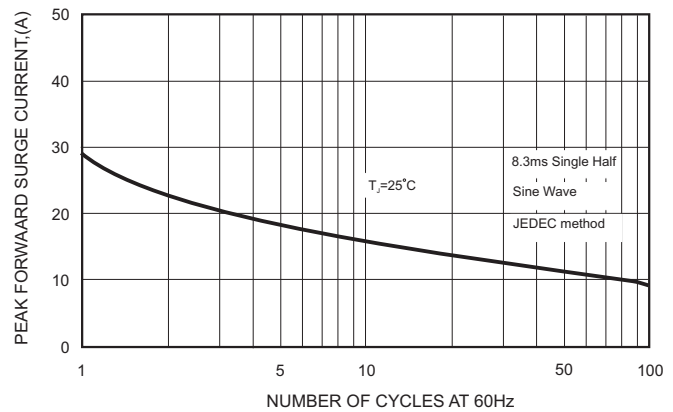
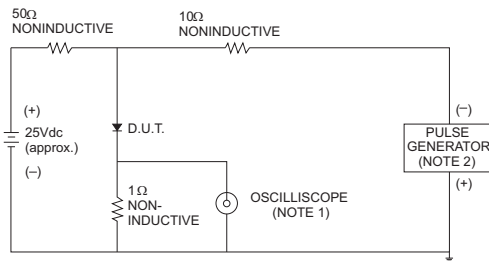


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE
RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.

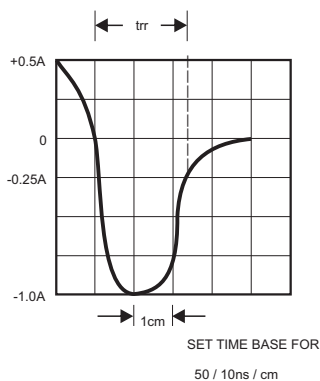
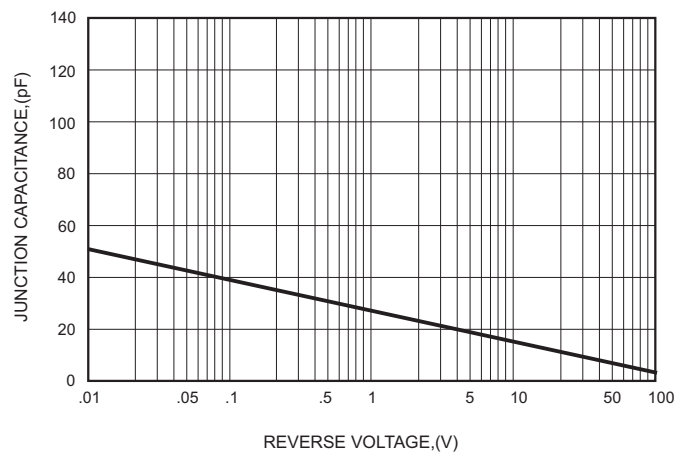


FIG.5-TYPICAL JUNCTION CAPACITANCE



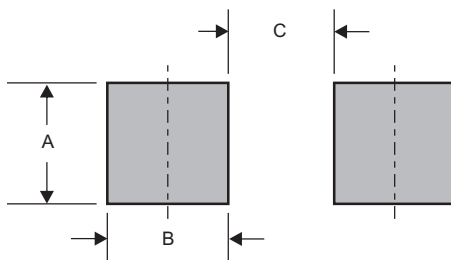
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
US1001FL	U1B
US1002FL	U1D
US1004FL	U1G
US1006FL	U1J
US1008FL	U1M

Suggested solder pad layout

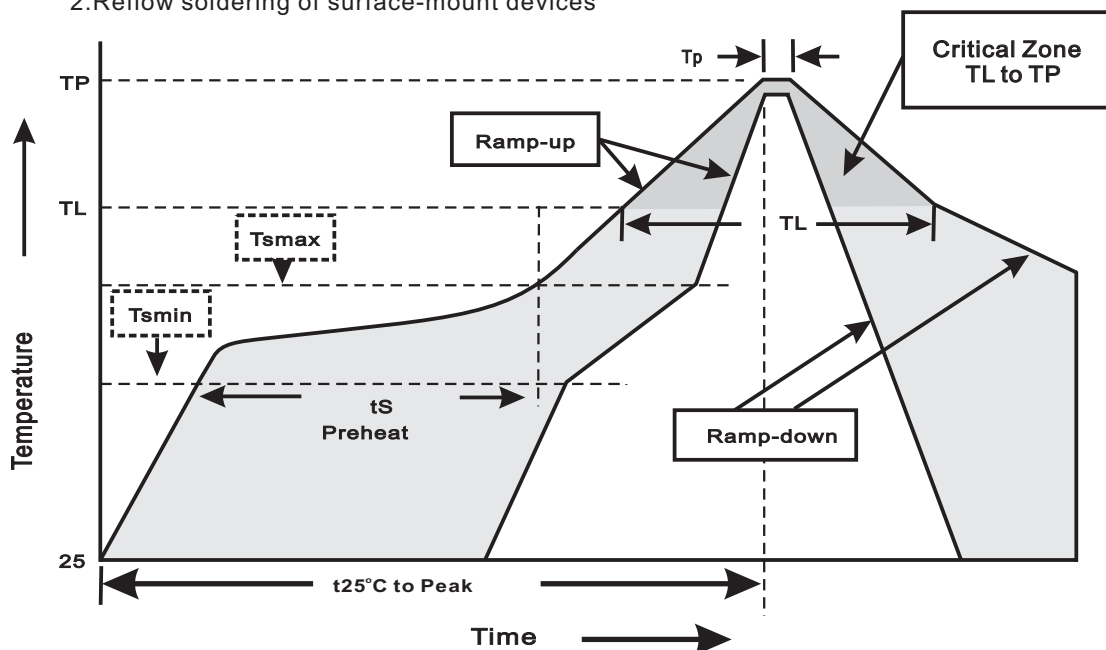


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123FL	0.075 (1.90)	0.055 (1.40)	0.075 (1.90)

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smin}) -Temperature Max(T _{smax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes