RS1004FL THRU RS1010FL

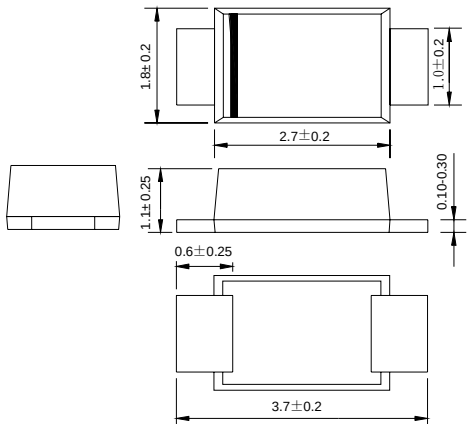
1.0A Surface Mount Fast Recovery Rectifiers

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℃/10 seconds at terminals
- Glass passivated chip junction

Package outline

SOD-123FL



Dimensions in inches and (millimeters)

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

Maximum ratings and Electrical Characteristics (AT T_A=25℃ unless otherwise noted)

PARAMETER	*SYMBOLS*	RS1004FL	RS1006FL	RS1010FL	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	1000	V
Maximum RMS voltage	V_{RMS}	280	420	700	V
Maximum DC blocking voltage	V_{DC}	400	600	1000	V
Maximum average forward rectified current 0.375”(9.5mm) lead length at T_A=75℃	$I_{(AV)}$	1.0			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30			A
Maximum instantaneous forward voltage at 1.0A	V_F	1.3			V
Maximum DC reverse current T_A=25℃ at rated DC blocking voltage T_A=100℃	I_R	5.0 50.0			μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	150	250	500	ns
Typical junction capacitance (NOTE 2)	C_J	15.0			pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	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=0.5A,I_R=1.0A,Irr=0.25A
2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
3.Thermal resistance from junction to ambient at 0.375”(9.5mm)lead length,P.C.B. mounted

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Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

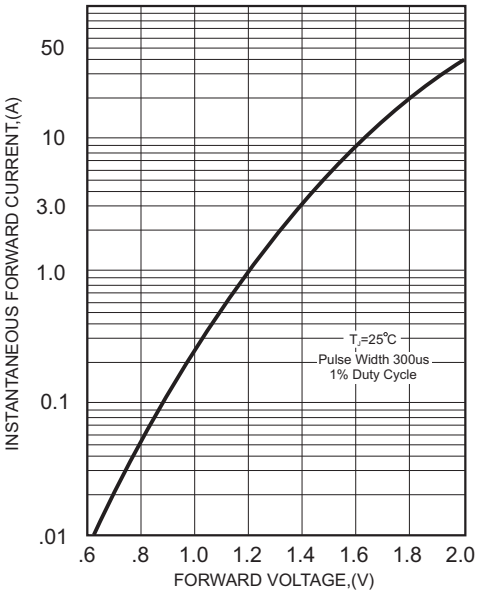


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

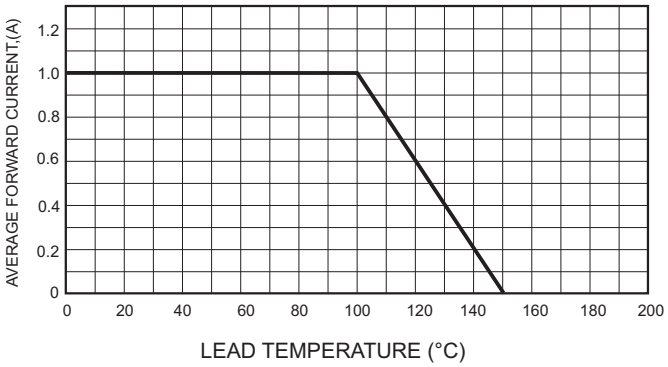
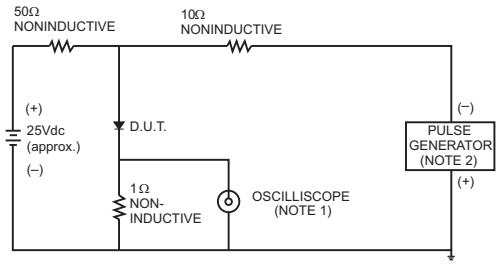
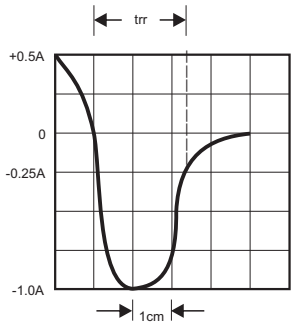


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



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

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



SET TIME BASE FOR
50 / 10ns / cm

FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

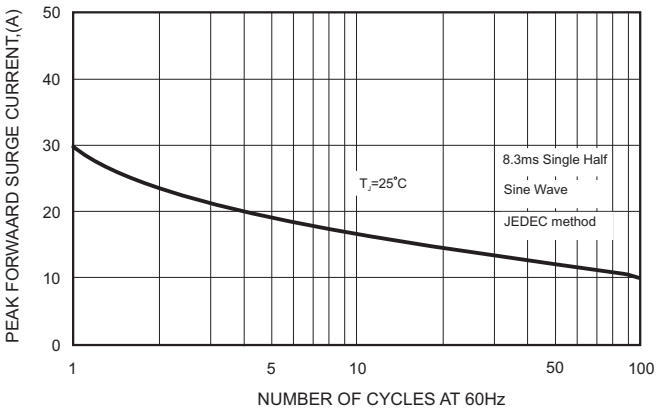
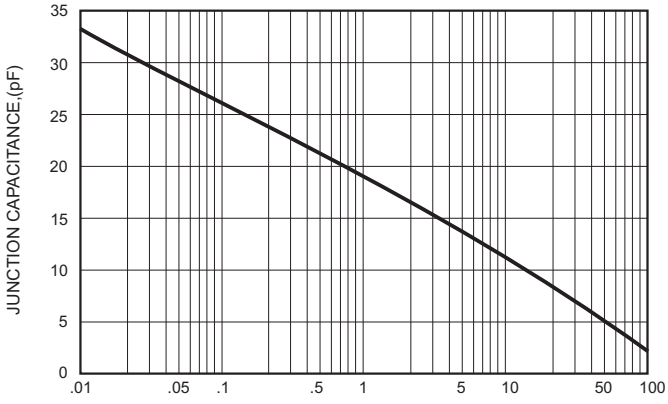


FIG.5-TYPICAL JUNCTION CAPACITANCE



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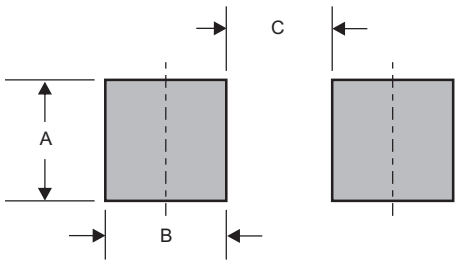
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
RS1004FL	F4
RS1005FL	F5
RS1010FL	F7

Suggested solder pad layout

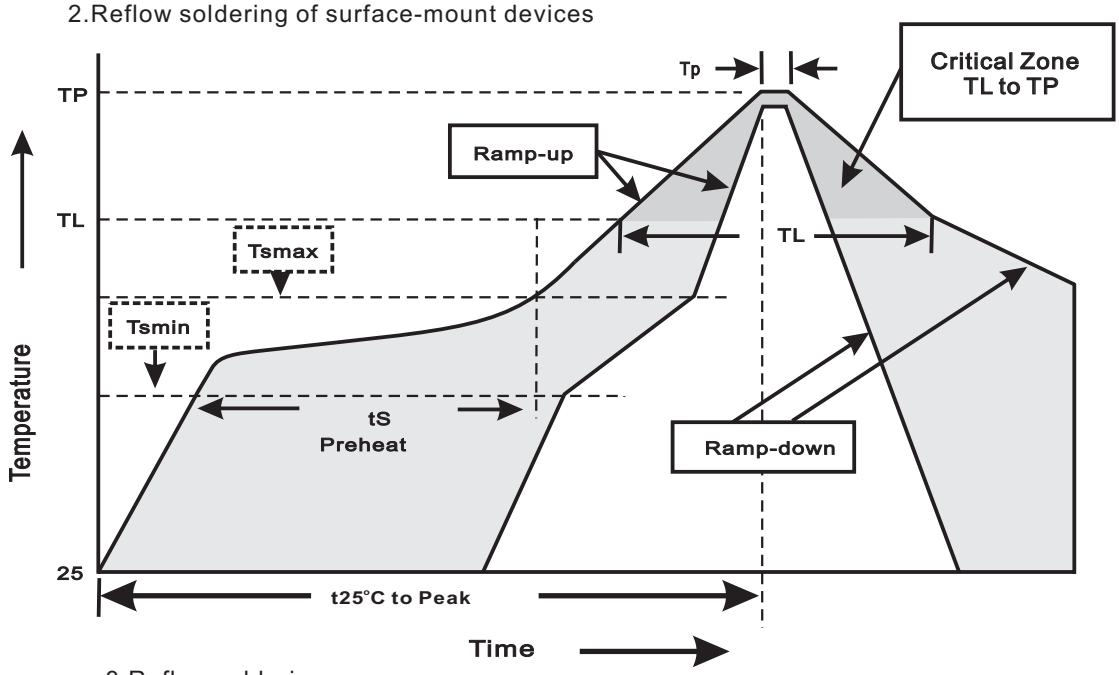


Dimensions in inches and (millimeters)

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(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax 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