RB751D

List

List.......... 1

Package outline.......... 2

Features.......... 2

Mechanical data.......... 2

Maximum ratings 2

Rating and characteristic curves.......... 3

Pinning information..........4

Marking.......... 4

Suggested solder pad layout.......... 4

Packing information.......... 5

Reel packing.......... 6

Suggested thermal profiles for soldering processes.......... 6

High reliability test capabilities..........7

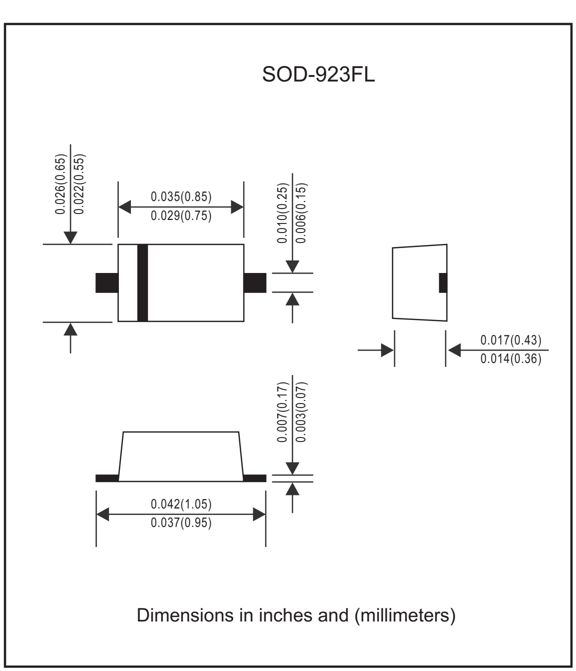
http://www.formosams.com/
TEL:886-2-22696661
FAX:886-2-22696141

Document ID	Issued Date	Revised Date	Revision	Page.
DS-221658	2011/01/10	2011/08/25	B	7

RB751D

30mA Surface Mount Small Signal Schottky Diode- 40V

Package outline



Features

- Slicon Epitaxial Planer
- Low Forward Voltage and Low Reverse Current
- High Reliability
- Schottky Barrier Diodes Encapsulated in a SOD-923FL Package
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228
- Suffix "-H" for Halogen-free part, ex. RB751D-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-923FL
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.00044 gram

Maximum ratings (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	Value	UNIT
Repetitve Peak Reverse Voltage		V_{RM}	40	V
DC Reverse Voltage		V_R	30	V
Mean rectifying current		I_O	30	mA
Peak forward surge current	60Hz for 1 cycle	I_{FSM}	200	mA
Thermal Resistance	Junction to Ambient	$R_{\theta JA}$	520	°C/W
Power Dissipation		P_D	150	mW
Junction temperature		T_J	125	°C
Storage temperature		T_{STG}	-40~+125	°C

Electrical Characteristics(AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	I_F = 1.0 mA	V_F			0.37	V
Reverse current	V_R = 30 V	I_R			0.5	uA
Diode capacitance	V_R = 1 V, f = 1MHz	C_T		2.0		pF

Rating and characteristic curves (RB751D)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

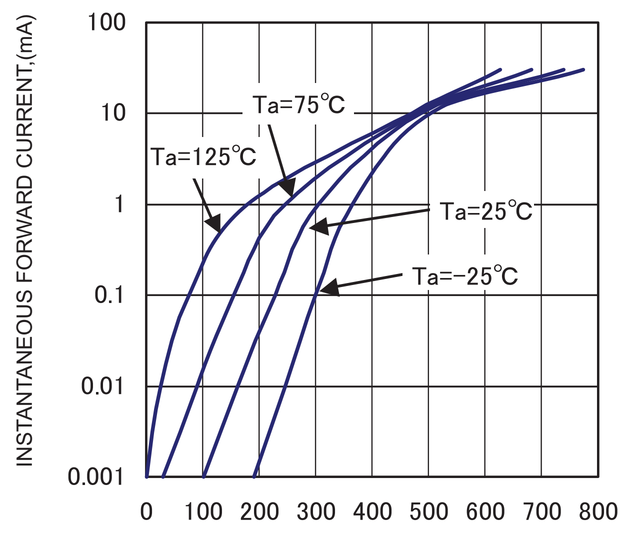
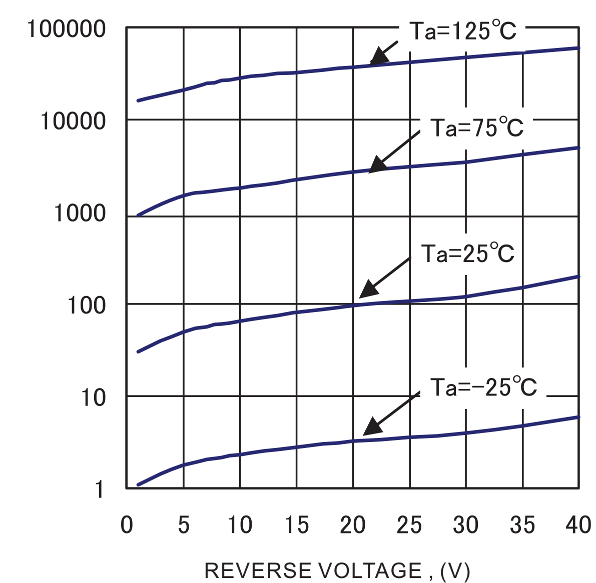


FIG.2 - TYPICAL REVERSE CHARACTERISTICS



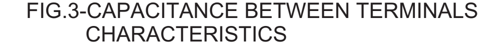
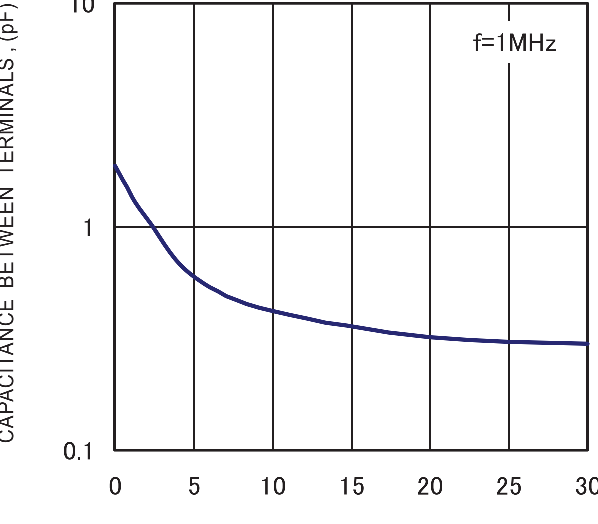


FIG.3-CAPACITANCE BETWEEN TERMINALS CHARACTERISTICS



RB751D

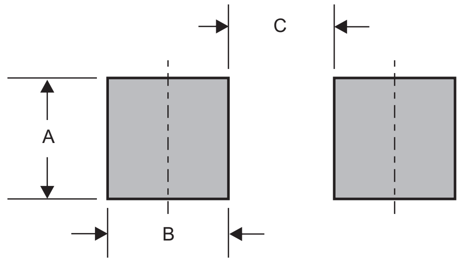
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1 2	1 2

Marking

Type number	Marking code
RB751D	5

Suggested solder pad layout

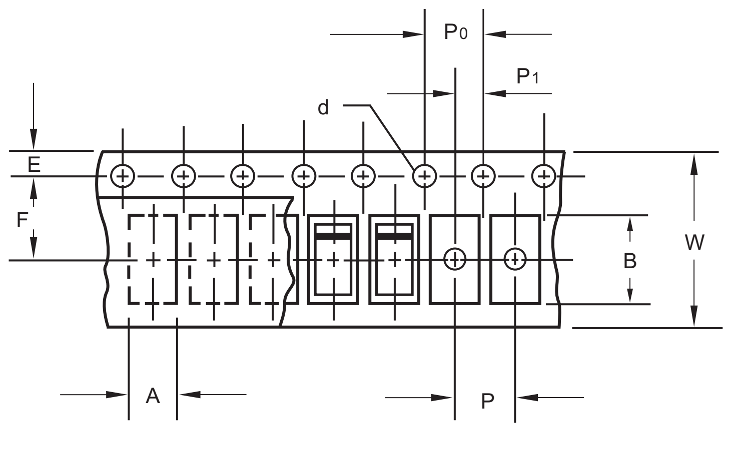


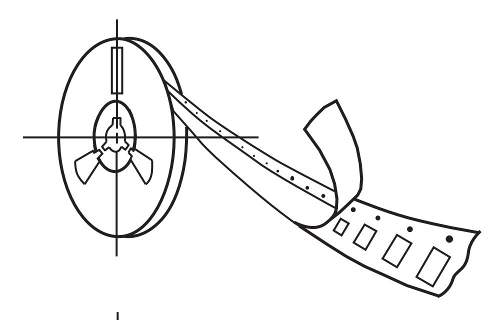
Dimensions in inches and (millimeters)

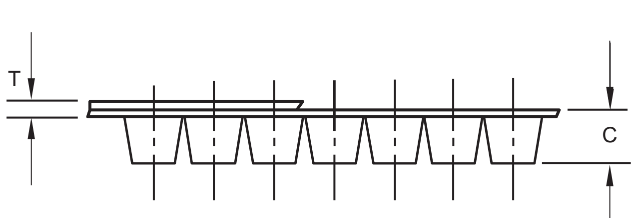
PACKAGE	A	B	C
SOD-923FL	0.016 (0.40)	0.012 (0.30)	0.024 (0.60)

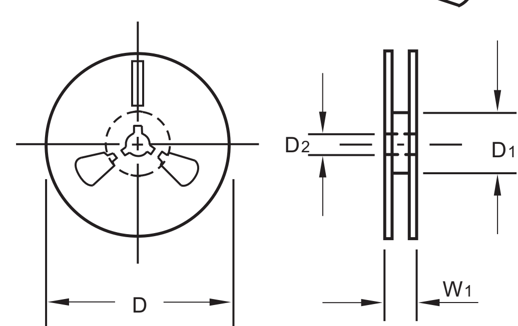
RB751D

Packing information









unit:mm

Item	Symbol	Tolerance	SOD-923FL
Carrier width	A	0.05	0.70
Carrier length	B	0.05	1.12
Carrier depth	C	0.05	0.48
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D_1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D_1	min	62.00
Feed hole diameter	D_2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	2.00
Sprocket hole pitch	P_0	0.1	4.00
Embossment center	P_1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W_1	1.0	11.40

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.

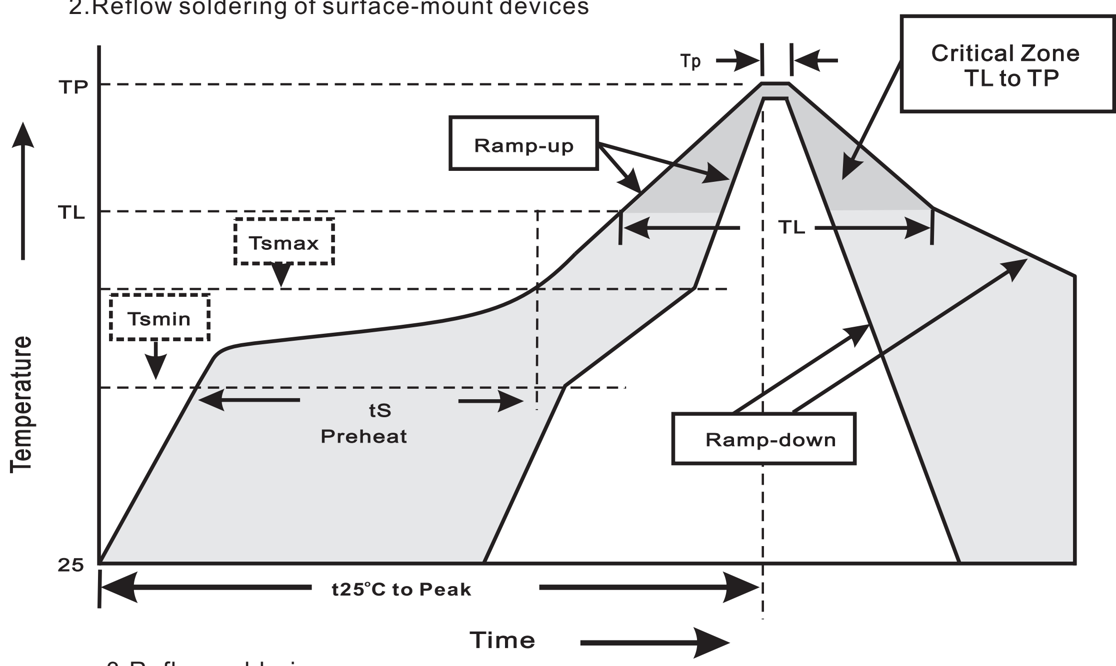
RB751D

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD-923FL	7"	8,000	2.0	80,000	183*183*123	178	382*262*387	640,000	9.50

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

RB751D

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=125°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°C, I_F = I_O On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P_{SIG} at T_A=121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
9. Forward Surge	60Hz for 1 cycle	MIL-STD-750D METHOD-4066-2
10. Humidity	at T_A=85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
11. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031