RB520G/RB521G

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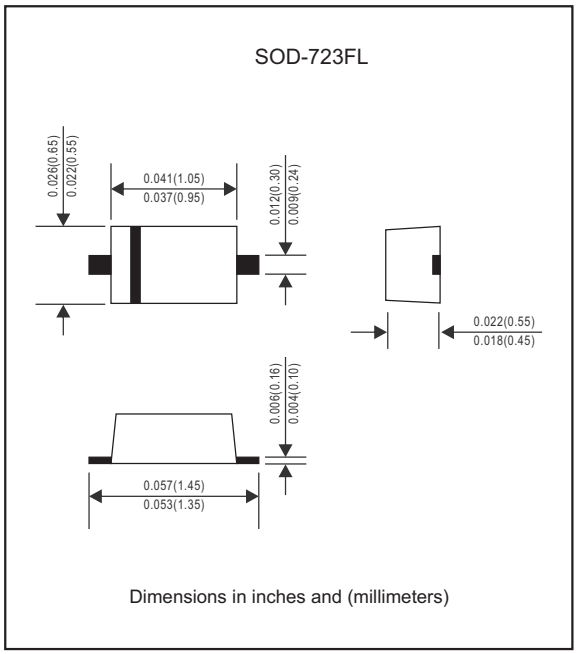
RB520G/RB521G

100mA Surface Mount Small Signal Schottky Diode- 30V

Features

- Ultra Small mold type
- Low IR
- High Reliability
- Lead-free parts meet exceeds environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free part, ex.RB520G-H.

Package outline



Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-723FL
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.0008 gram

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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
DC Reverse Voltage		V_R			30	V
Average rectified forward current		I_O			100	mA
Peak Forward Surge Current	60Hz for 1cycle	I_{FSM}			500	mA
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 = 10 mA	RB520G RB521G	V_F			0.45 0.35	V
Reverse current	V_R = 10 V	RB520G RB521G	I_R			0.5 10.0	μA
Diode capacitance	V_R = 10 V, f = 1MHz		C_T		4.0		pF

Rating and characteristic curves (RB520G/RB521G)

FIG.1-TYPICAL FORWARD CHARACTERISTICS
RB520G

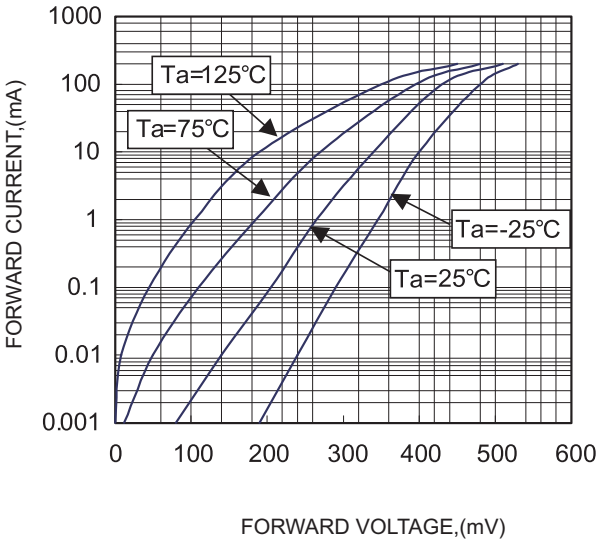


FIG.2 - TYPICAL REVERSE CHARACTERISTICS
RB520G

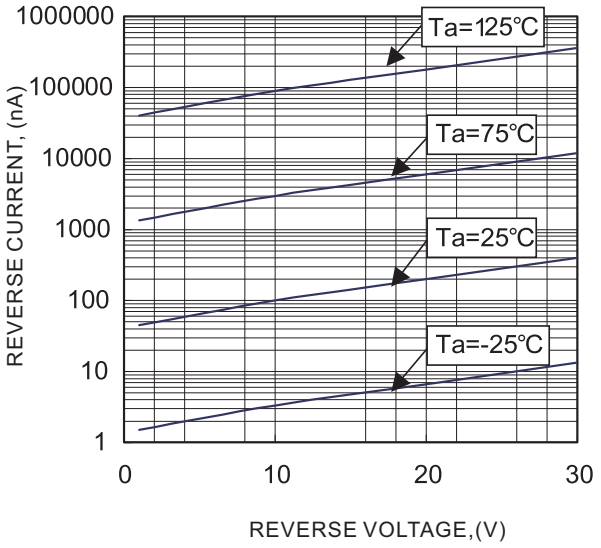


FIG.3-TYPICAL TERMINALS CAPACITANCE
RB520G

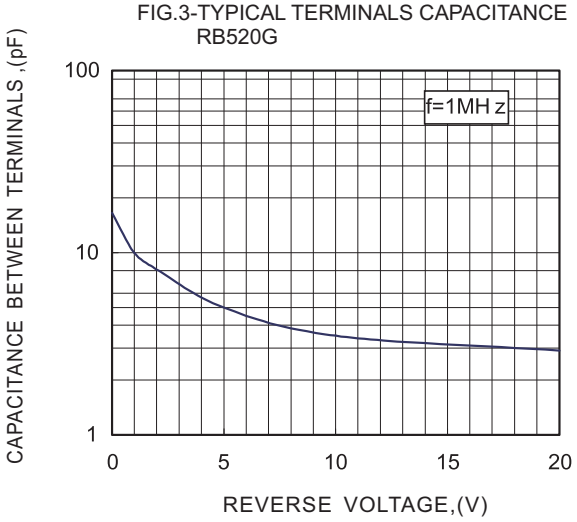


FIG.1-TYPICAL FORWARD CHARACTERISTICS
RB521G

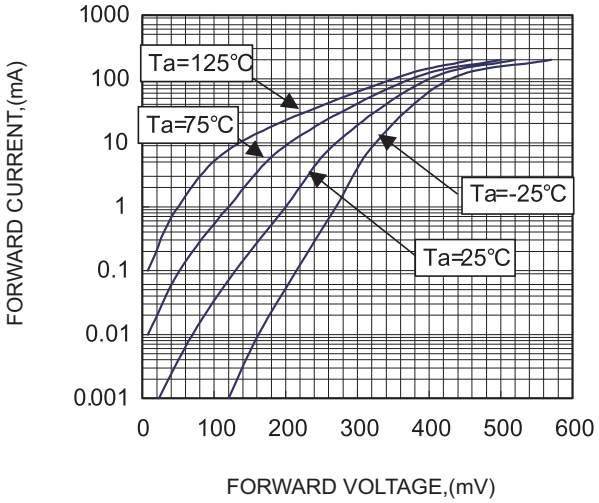


FIG.2 - TYPICAL REVERSE CHARACTERISTICS
RB521G

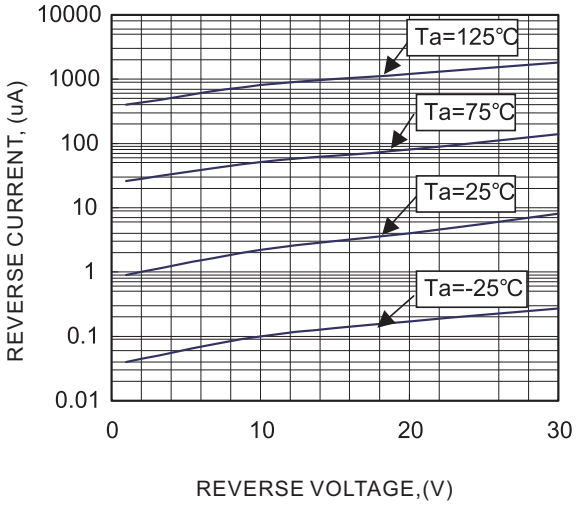
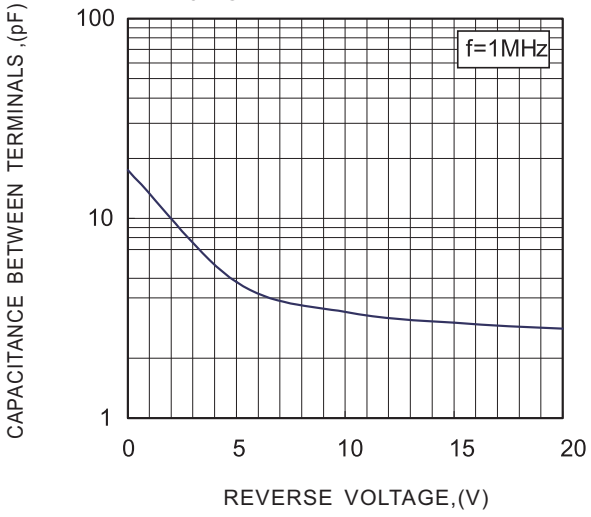


FIG.3-TYPICAL TERMINALS CAPACITANCE
RB521G



RB520G/RB521G

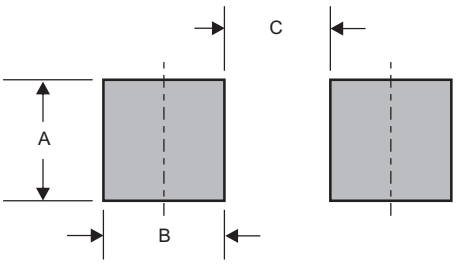
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
RB520G	E
RB521G	F

Suggested solder pad layout

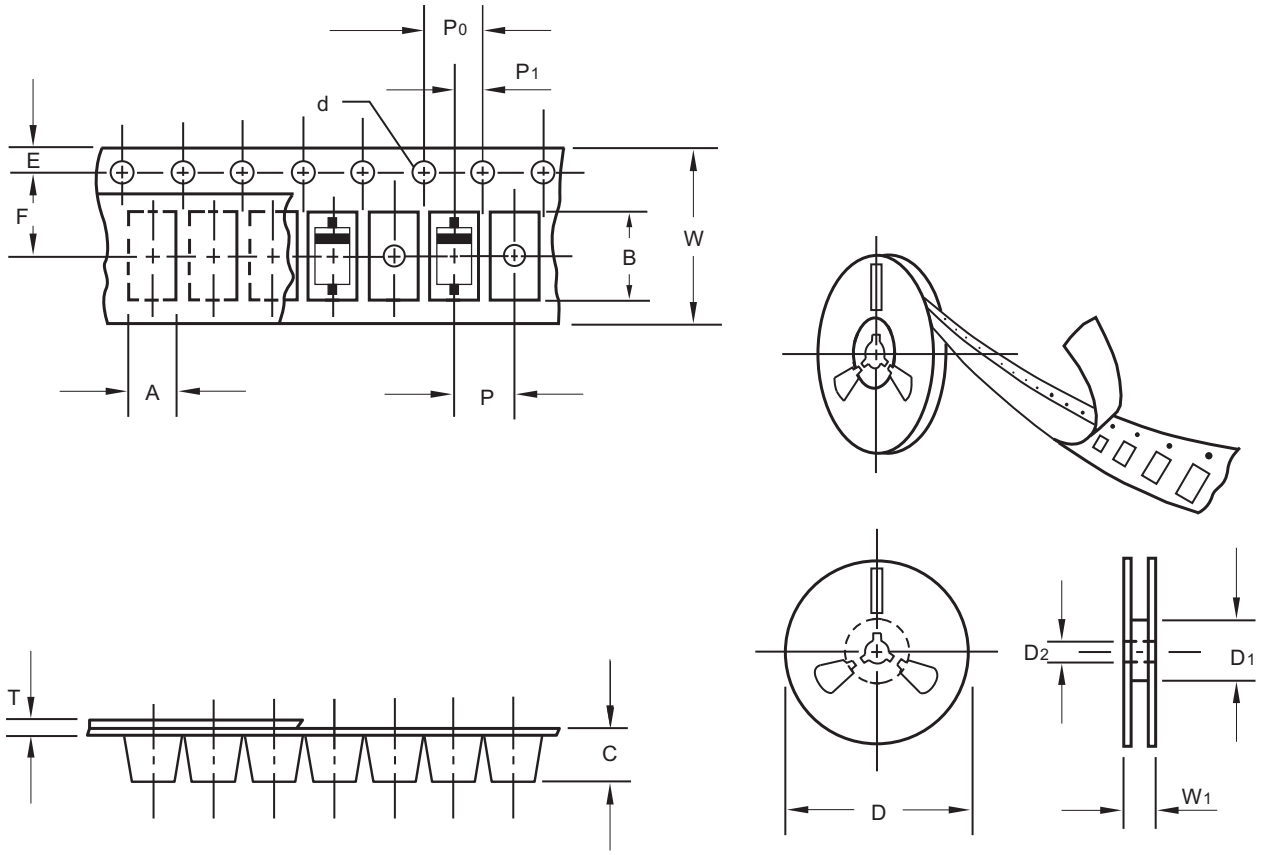


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-723FL	0.018 (0.45)	0.020 (0.50)	0.035 (0.90)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOD-723FL
Carrier width	A	0.1	0.68
Carrier length	B	0.1	1.71
Carrier depth	C	0.1	0.59
Sprocket hole	d	0.1	1.50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D_1	min	50.00
Feed hole diameter	D_2	0.2	13.0
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	11.4

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

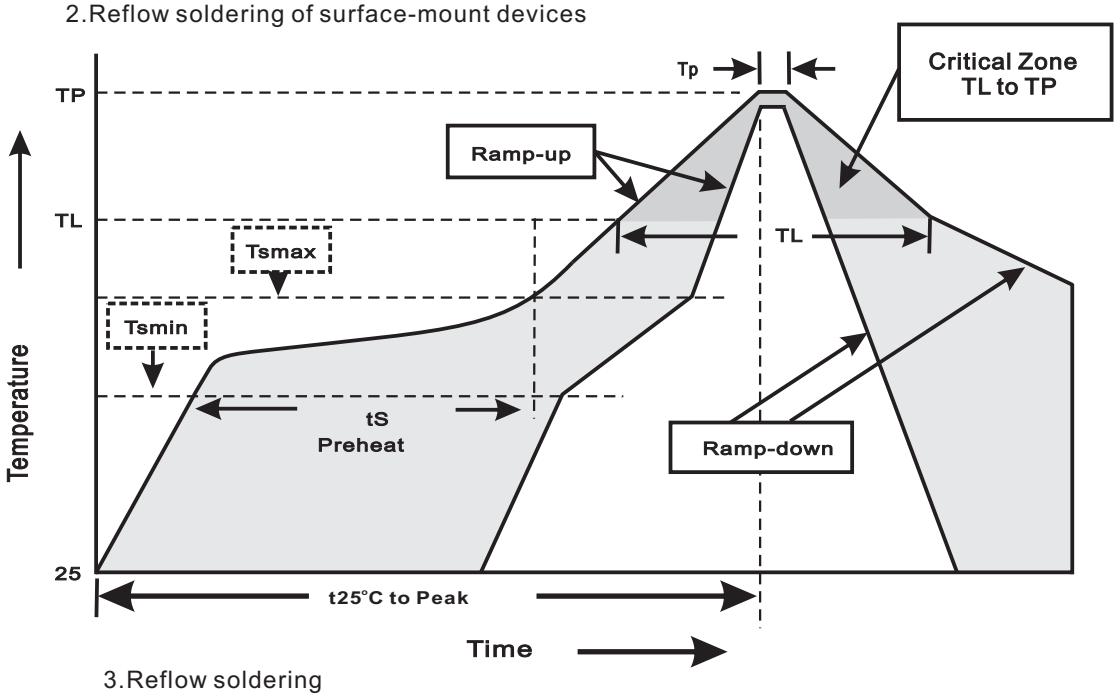
RB520G/RB521G

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-723FL	7"	4,000	4.0	40,000	183*183*123	178	382*262*387	320,000	9.5

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

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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 1cycle	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