

RB520G/RB521G

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings and Electrical characteristics	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

RB520G/RB521G

100mA Surface Mount Small Signal Schottky Diode 30V

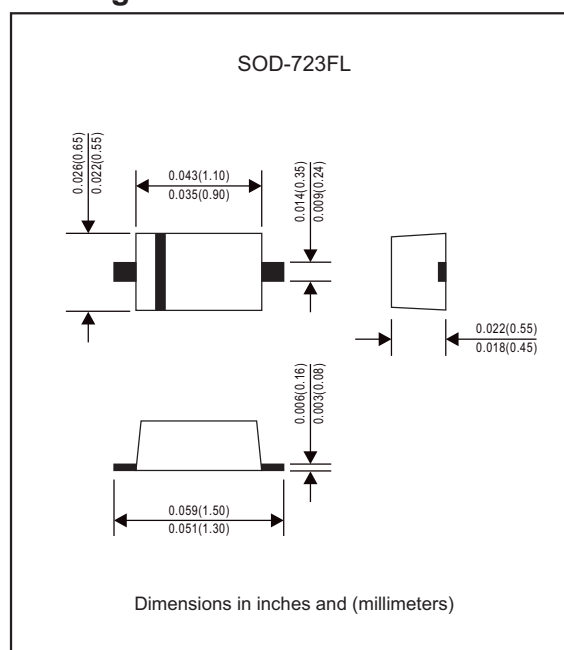
Features

- Ultra small mold type
- Low IR
- High reliability
- Silicon epitaxial planar
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen-free part, ex. RB520G-H

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

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ 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
Operating junction temperature		T_J			+125	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-40		+125	$^{\circ}\text{C}$

Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	Unit
Forward voltage	$I_F=10\text{mA}$	RB520G RB521G V_F			0.45 0.35	V
Reverse current	$V_R=10\text{V}$	RB520G RB521G I_R			0.5 10.0	μA

Rating and characteristic curves (RB520G/RB521G)

FIG.1-TYPICAL FORWARD CHARACTERISTICS
RB520G

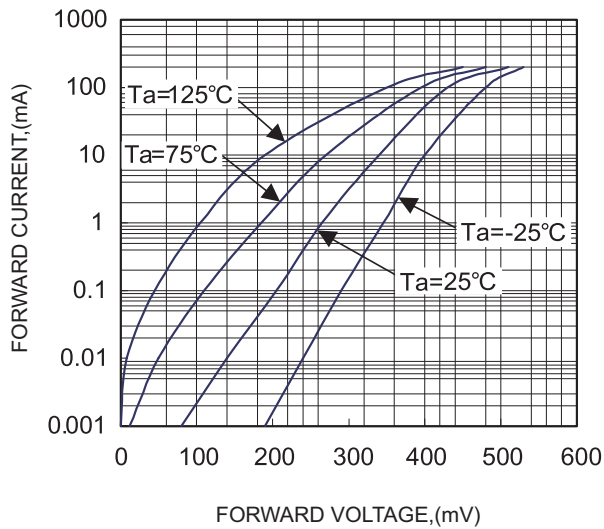


FIG.2 - TYPICAL REVERSE CHARACTERISTICS
RB520G

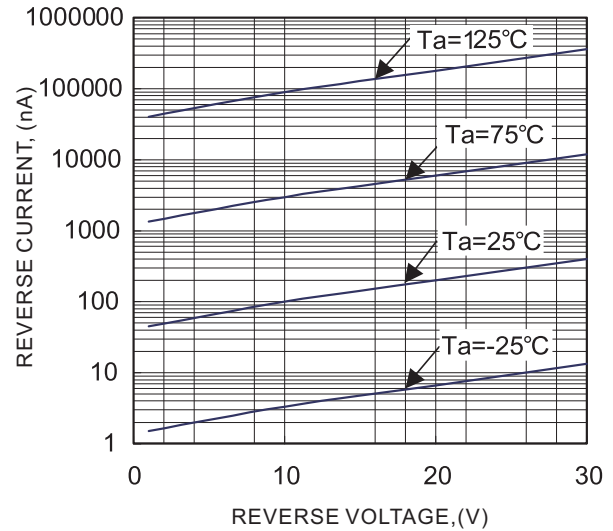


FIG.3-TYPICAL TERMINALS CAPACITANCE
RB520G

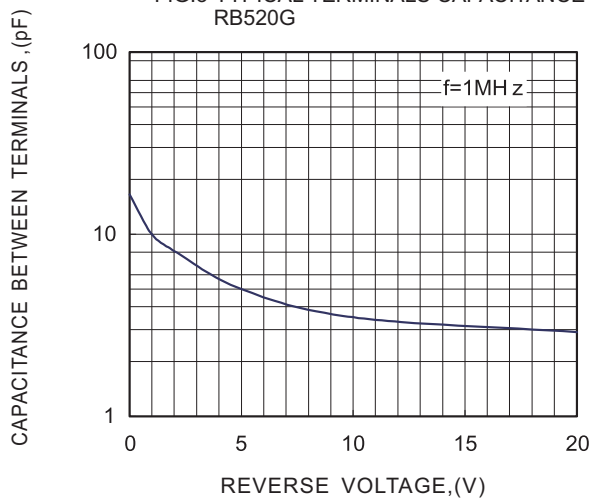


FIG.4-TYPICAL FORWARD CHARACTERISTICS
RB521G

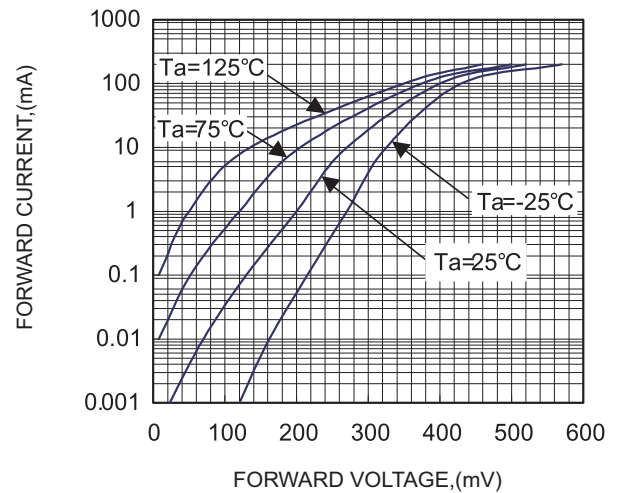


FIG.5- TYPICAL REVERSE CHARACTERISTICS
RB521G

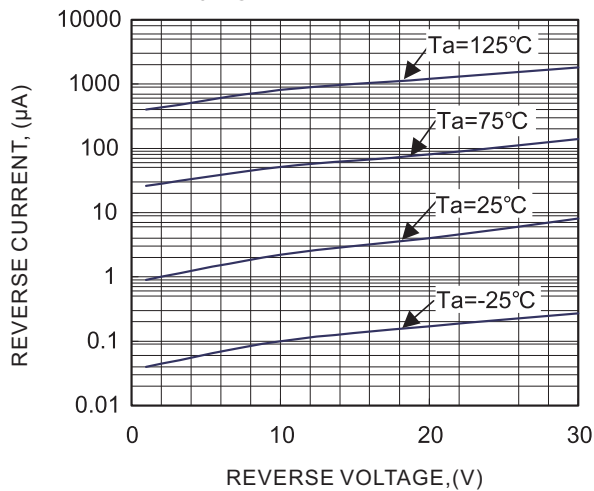
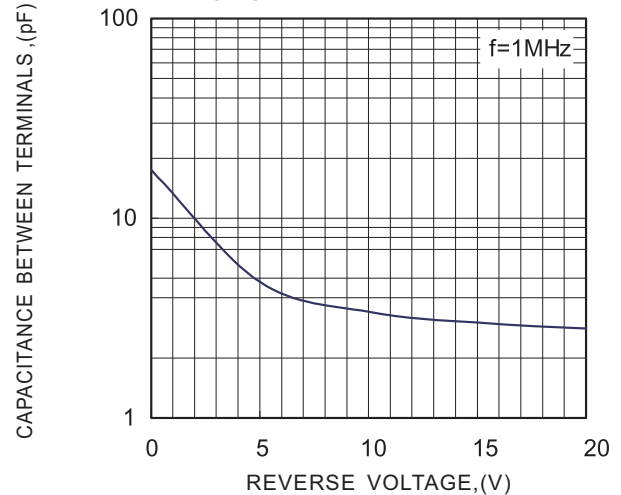


FIG.6-TYPICAL TERMINALS CAPACITANCE
RB521G

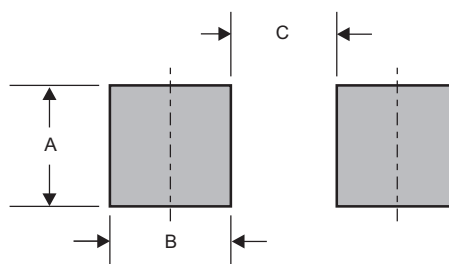


RB520G/RB521G**Pinning information**

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
RB520G	E
RB521G	F

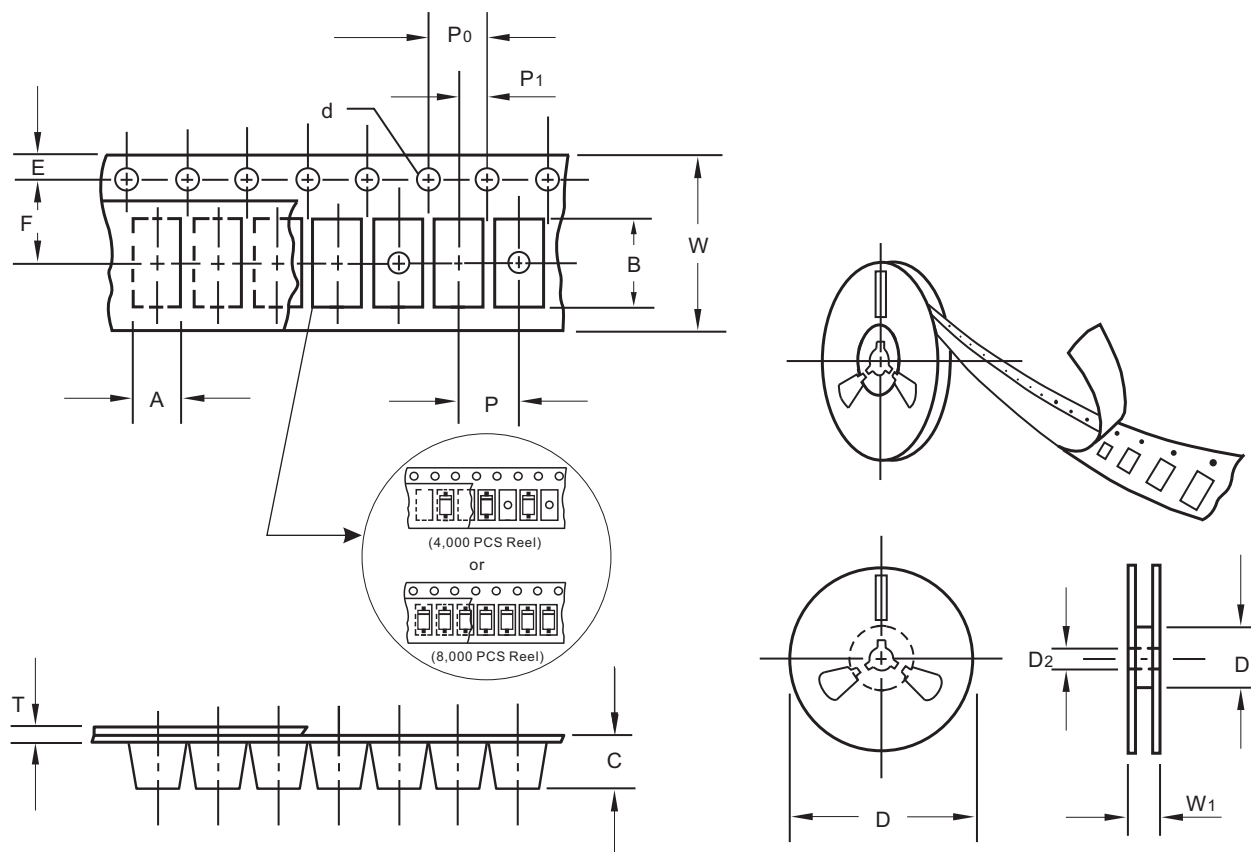
Suggested solder pad layout

Dimensions in inches and (millimeters)

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

RB520G/RB521G

Packing information



unit:mm

Item	Symbol	Tolerance	SOD-723FL
Carrier width	A	0.1	0.73
Carrier length	B	0.1	1.71
Carrier depth	C	0.1	0.62
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	12.3

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

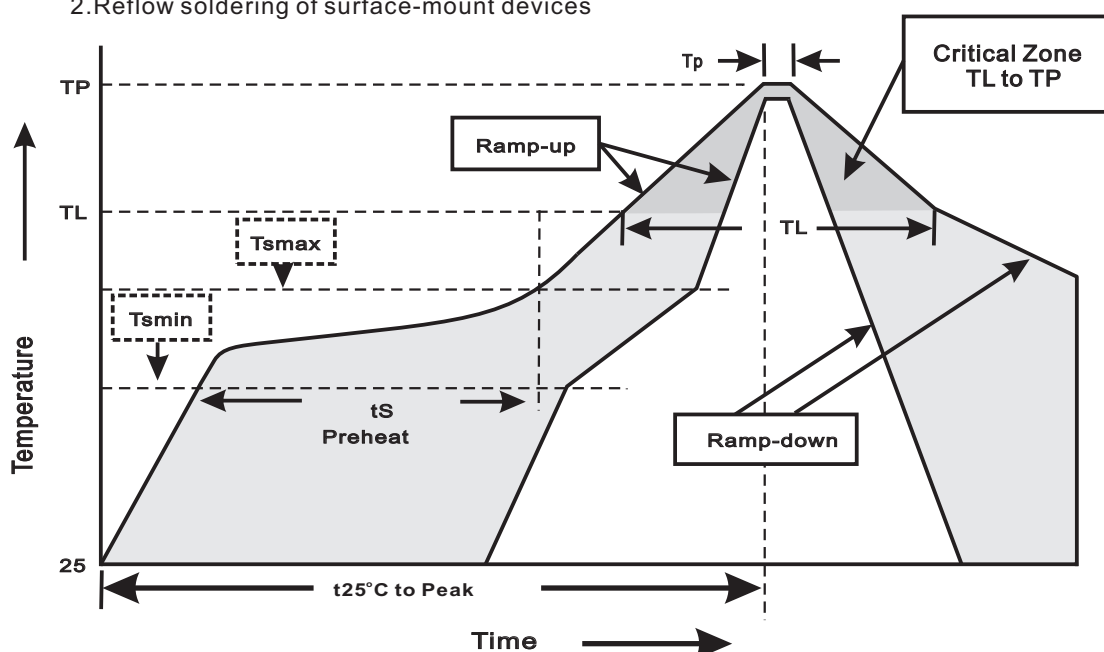
RB520G/RB521G

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*123*183	178	382*257*387	320,000	9.5
		8,000	2.0	80,000	183*123*183	178	382*257*387	640,000	16.5

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(T _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} 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(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

RB520G/RB521G

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for $10 \pm 2\text{sec.}$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^\circ\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 125^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ 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 $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^\circ\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	60Hz for 1cycle	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031