

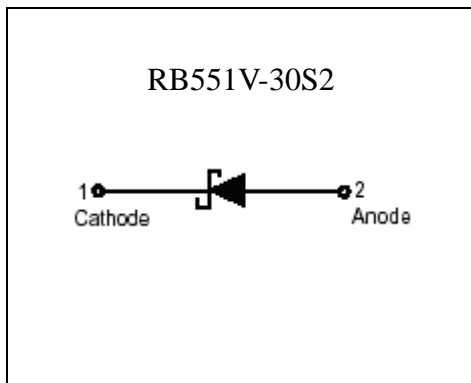
Small Signal Schottky Barrier diode

RB551V-30S2

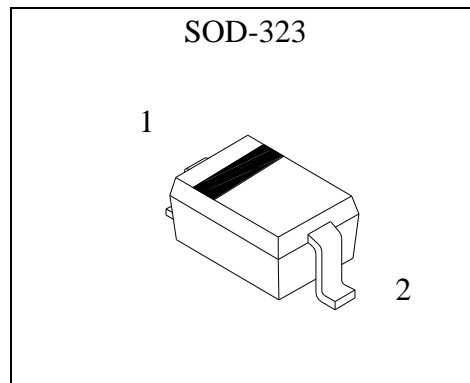
Description

The RB551V-30S2 is a silicon Schottky barrier diode fabricated in planar technology, and encapsulated in a small SOD-323 plastic SMD package.

Symbol



Outline



Features

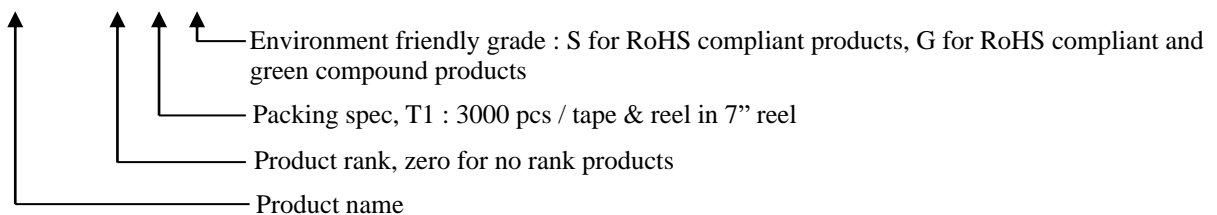
- Small plastic SMD package
- Ultra low V_F , $V_F=0.45V$ typ. at 0.5A
- High reliability
- Weight: approx. 0.0045 gram
- Pb-free package

Applications

- High frequency rectification
- Switching regulators

Ordering Information

Device	Package	Shipping
RB551V-30S2-0-T1-G	SOD-323 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

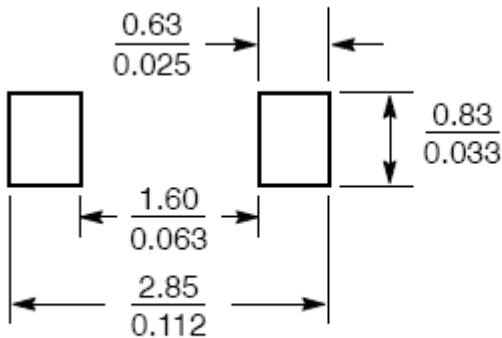


Absolute Maximum Ratings @ $T_A=25^{\circ}\text{C}$

Parameters	Symbol	Limits	Unit
Peak Reverse voltage	V_{RM}	30	V
DC Reverse voltage	V_R	20	V
Mean rectifying current	I_O	0.5	A
Peak forward surge current	I_{FSM}	2	A
Power Dissipation	P_D	250	mW
Maximum thermal resistance, Junction to ambient	$R_{\theta JA}$	500	$^{\circ}\text{C/W}$
Operating Junction Temperature Range	T_j	-55~ +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-65~ +150	$^{\circ}\text{C}$

Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

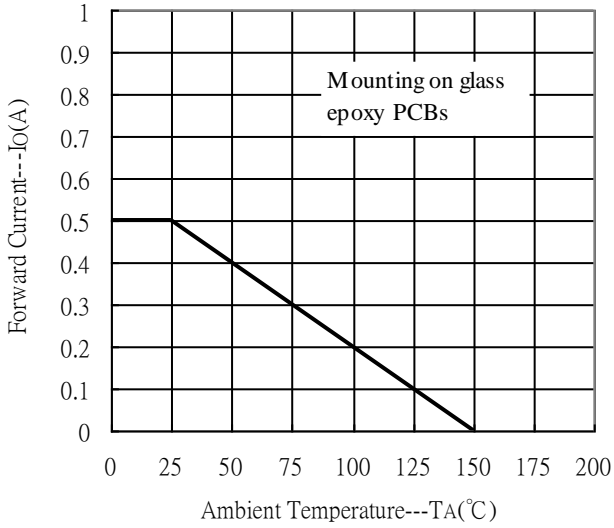
Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Forward voltage	$V_F 1$	$I_F=100\text{mA}$	-	-	0.36	V
	$V_F 2$	$I_F=500\text{mA}$	-	-	0.5	V
Reverse leakage current	I_R	$V_R=20\text{V}$	-	-	100	μA

Recommended Footprint


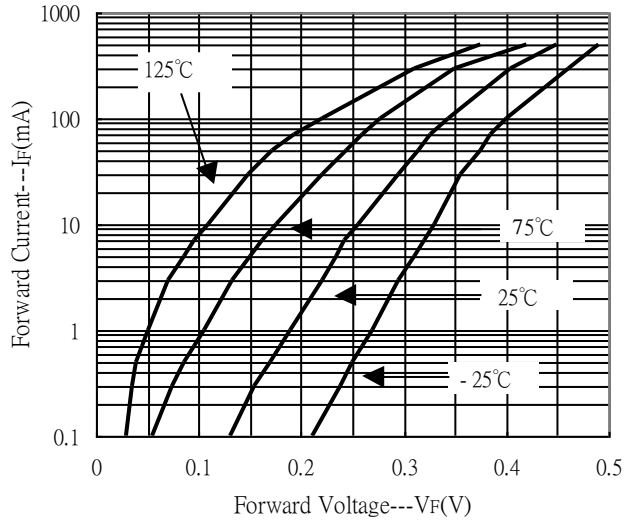
$\frac{\text{mm}}{\text{inch}}$

Typical Characteristics

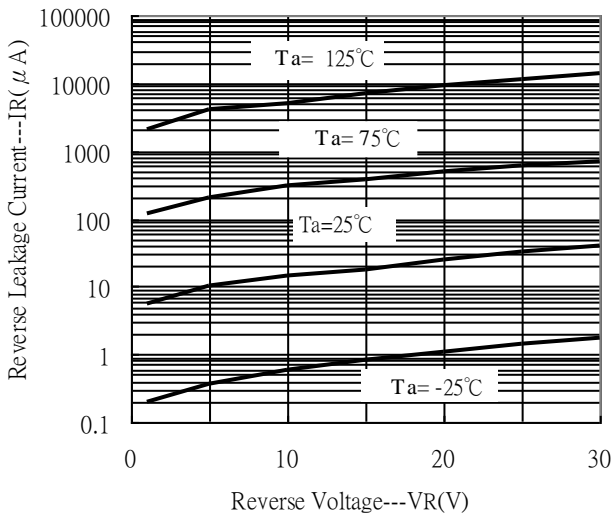
Forward Current Derating Curve



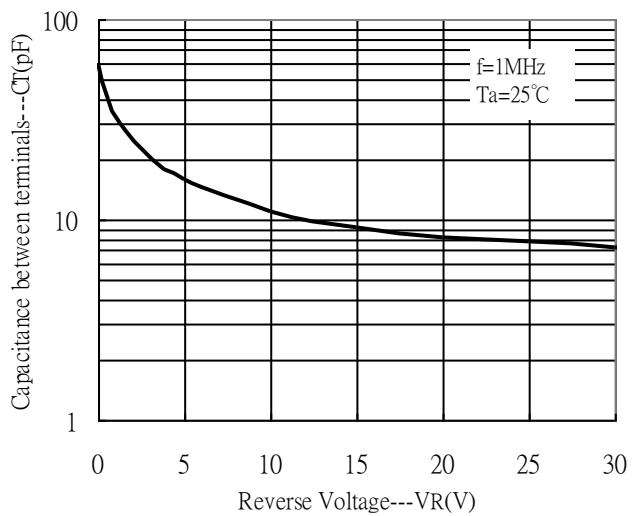
Forward Current vs Forward Voltage



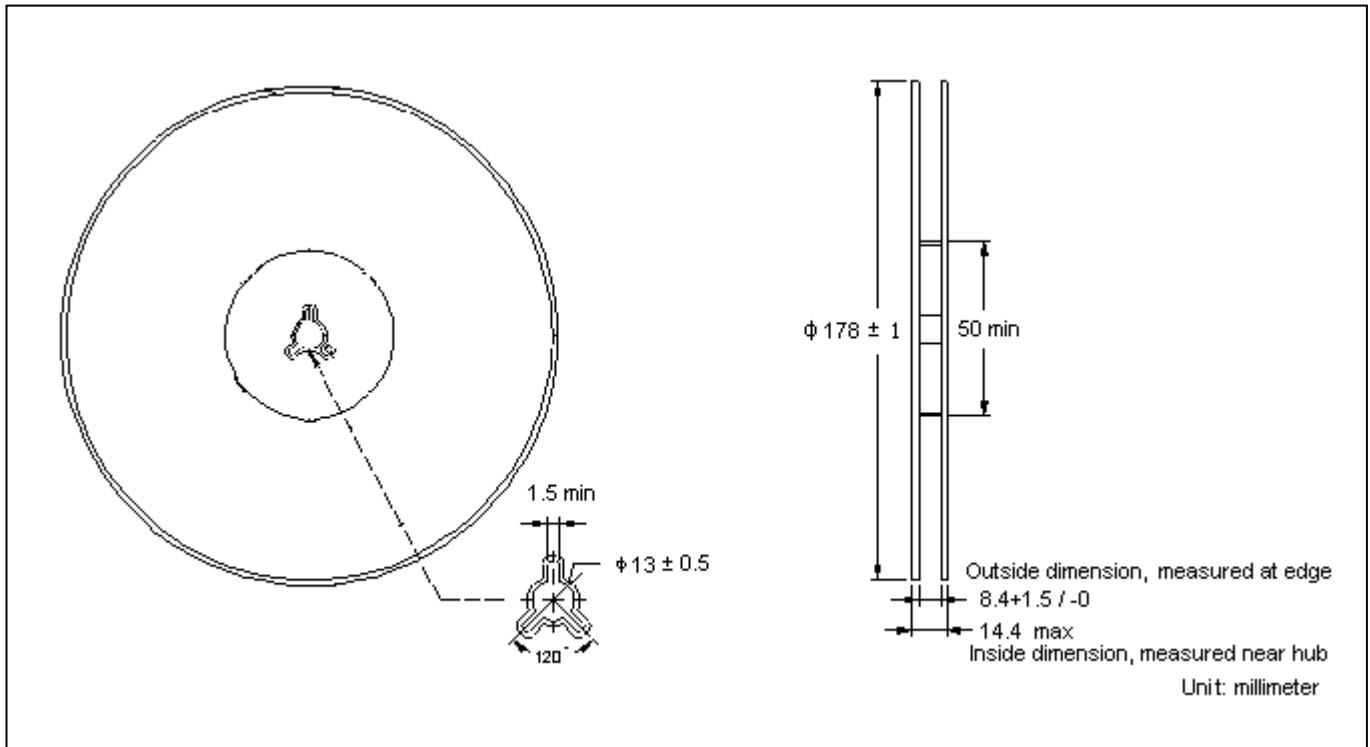
Reverse Leakage Current vs Reverse Voltage



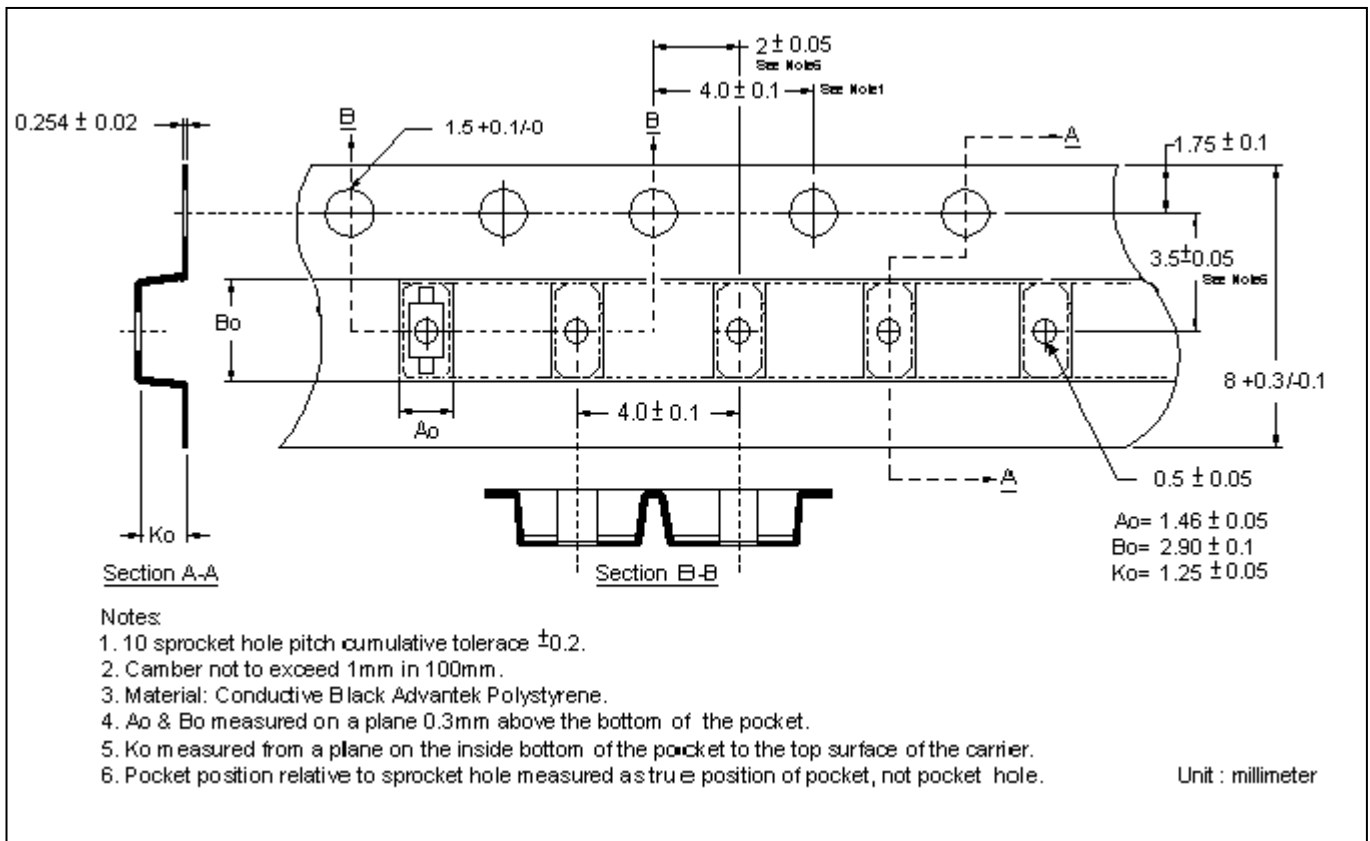
Capacitance vs Reverse Voltage



Reel Dimension



Carrier Tape Dimension



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

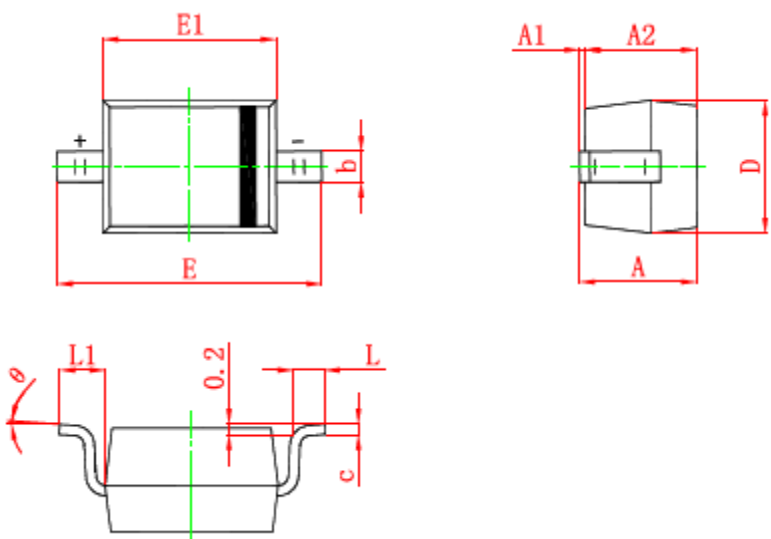
Recommended temperature profile for IR reflow



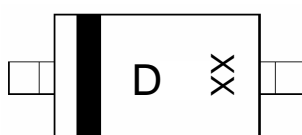
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T _{s min})	100°C	150°C
-Temperature Max(T _{s max})	150°C	200°C
-Time(t _{s min} to t _{s max})	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T _L)	183°C	217°C
- Time (t _L)	60-150 seconds	60-150 seconds
Peak Temperature(T _p)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

SOD-323 Dimension



Marking:



Style: Pin 1.Cathode 2.Anode

Date Code: Year+Month
 Year: 3→2003, 4→2004
 Month: 1→1, 2→2, . . .
 9→9, A→10, B→11, C→12

2-Lead SOD-323 Plastic Surface Mounted Package,
 CYS Package Code: S2

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.039Max.		1.000Max		E	0.100	0.108	2.550	2.750
A1	0.000	0.004	0.000	0.100	E1	0.063	0.071	1.600	1.800
A2	0.031	0.035	0.800	0.900	L	0.010	0.016	0.250	0.400
b	0.010	0.014	0.250	0.350	L1	0.019 REF.		0.475 REF.	
c	0.003	0.006	0.080	0.150	θ	0°	8°	0°	8°
D	0.047	0.055	1.200	1.400					

- Notes: 1.Controlling dimension : millimeters.
 2.Lead thickness specified per L/F drawing with solder plating.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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