Small Signal Schottky diode

RB706S3

Description

Planar silicon Schottky barrier diode encapsulated in a SOT-323 plastic SMD package.

Features

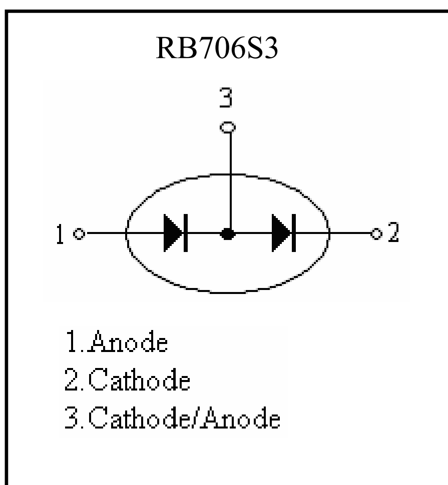
- •Small surface mounting type (SC-70/SOT-323).
- •Low reverse current and low forward voltage.
- •High reliability.
- •Pb-free lead plating and halogen-free package.

Applications

Low current rectification and high speed switching.

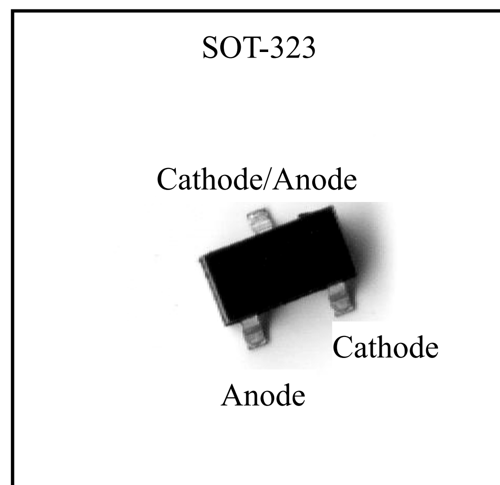
Symbol

RB706S3



Outline

SOT-323



Ordering Information

Device	Package	Shipping
RB706S3-0-T1-G	SOT-323 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Absolute Maximum Ratings @T_A=25℃

Parameters	Symbol	Min	Max	Unit
Repetitive peak reverse voltage	V_{RRM}	-	40	V
Reverse voltage(DC)	V_R	-	40	V
Average rectified forward current	I_O	-	30	mA
Repetitive peak forward current (60Hz, 1 cyc) (Note 1)	I_{FRM}		200	mA
Total power dissipation	P_D		200	mW
Operating Junction and Storage Temperature Range	Tj; Tstg	-40	+125	°C

Note : 1.Rating of per diode.

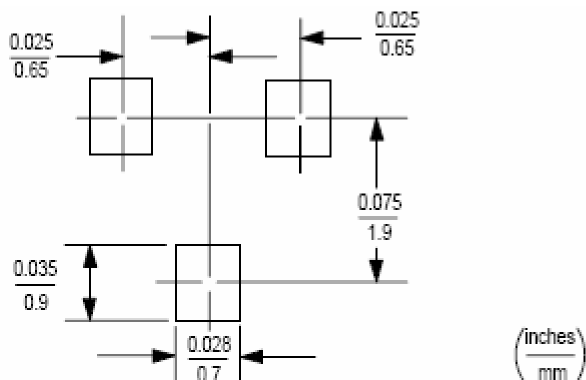
Characteristics (Ta=25°C)

Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
Forward Voltage	V_F	I_F=1mA	-	-	370	mV
Reverse Leakage Current	I_R	V_R=30V	-	-	0.5	μA
Capacitance Between Terminals	C_T	V_R=1V, f=1MHz	-	2	-	pF

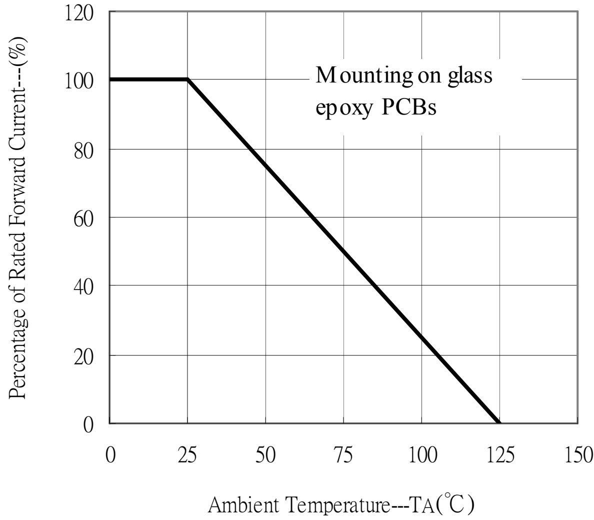
Thermal Characteristics

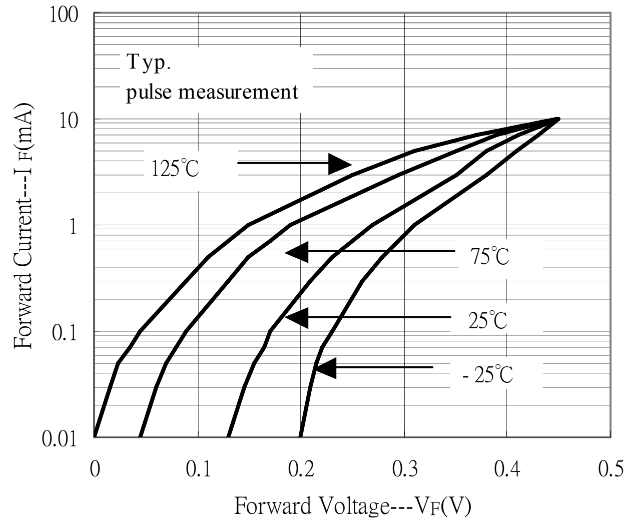
Symbol	Parameter	Conditions	Value	Unit
Rth, j-a	thermal resistance from junction to ambient	Note 1	500	℃/W

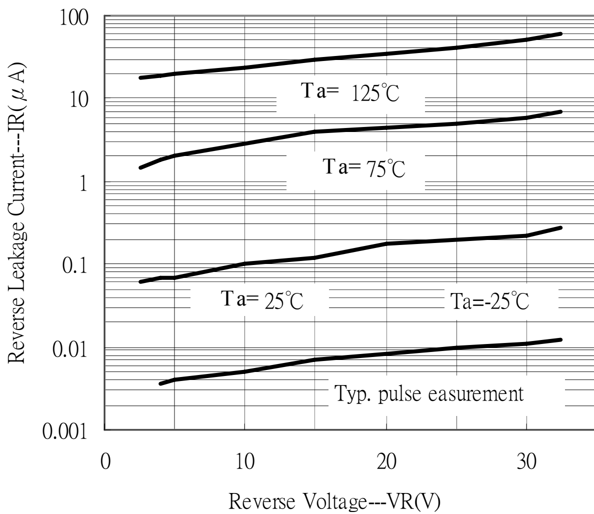
Recommended Footprint

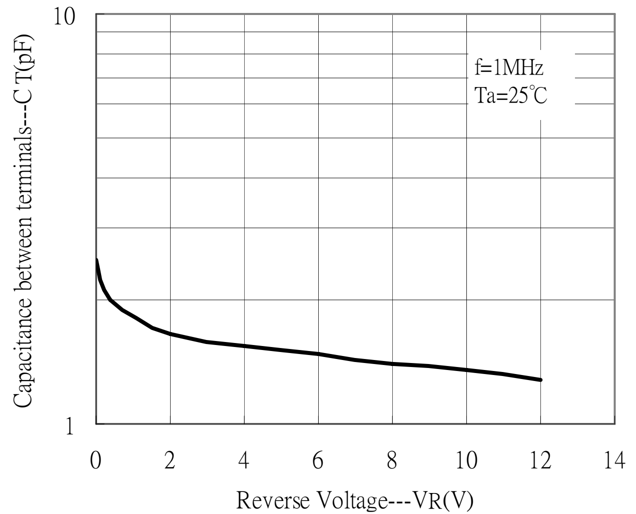


Typical Characteristics

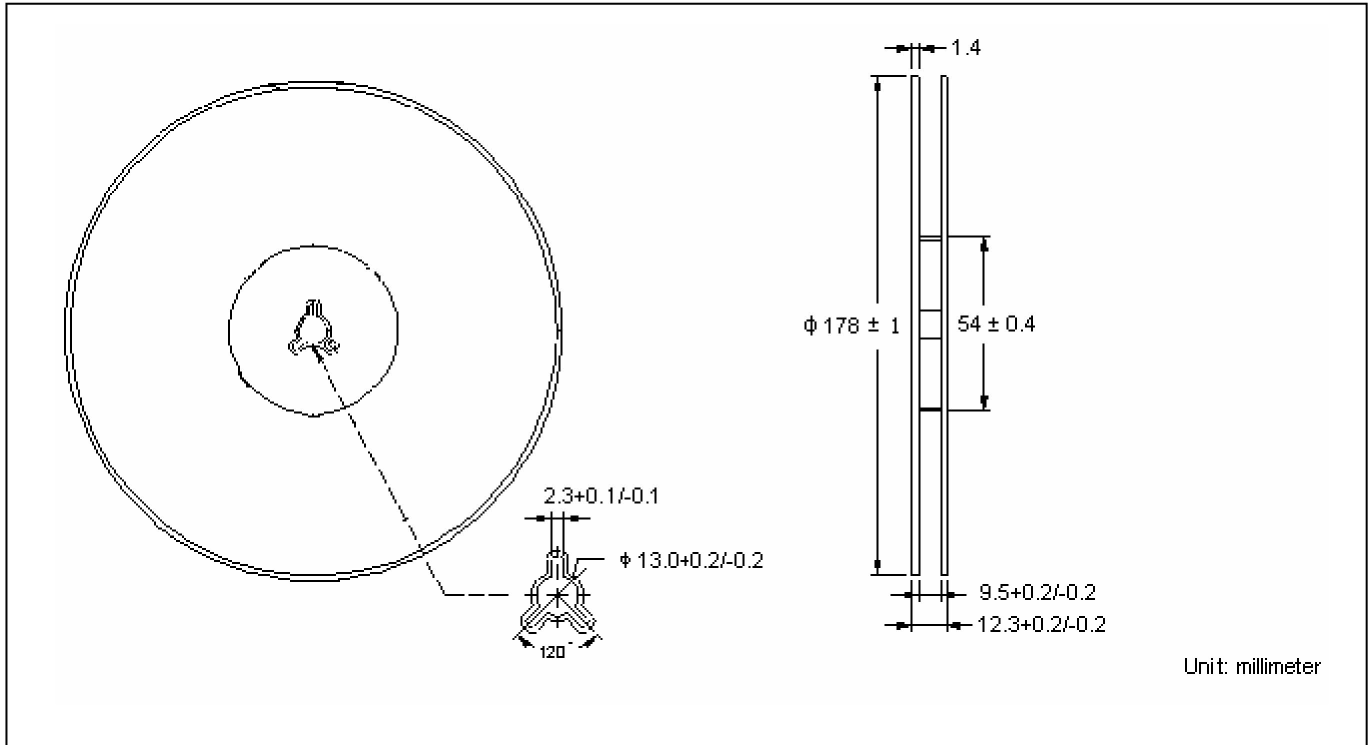




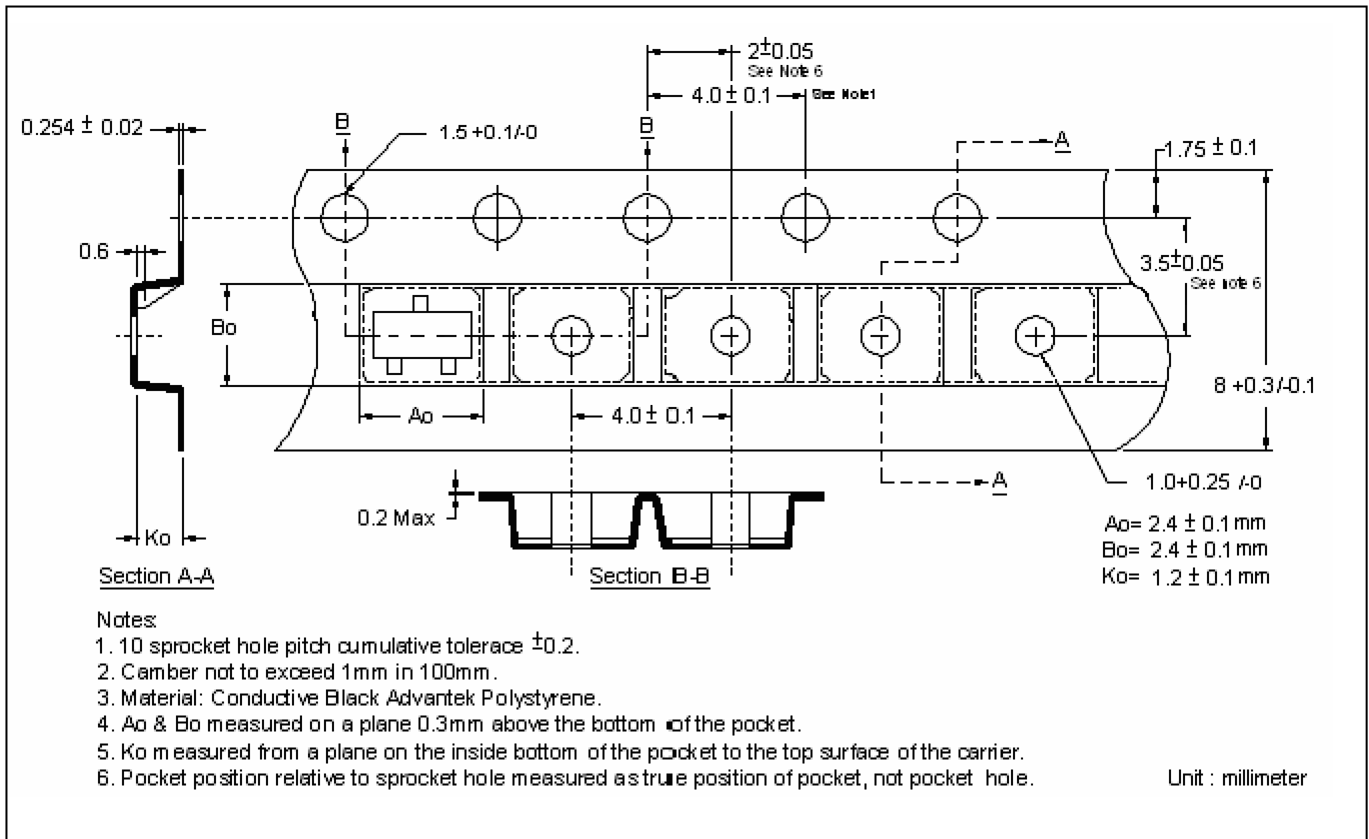




Reel Dimension



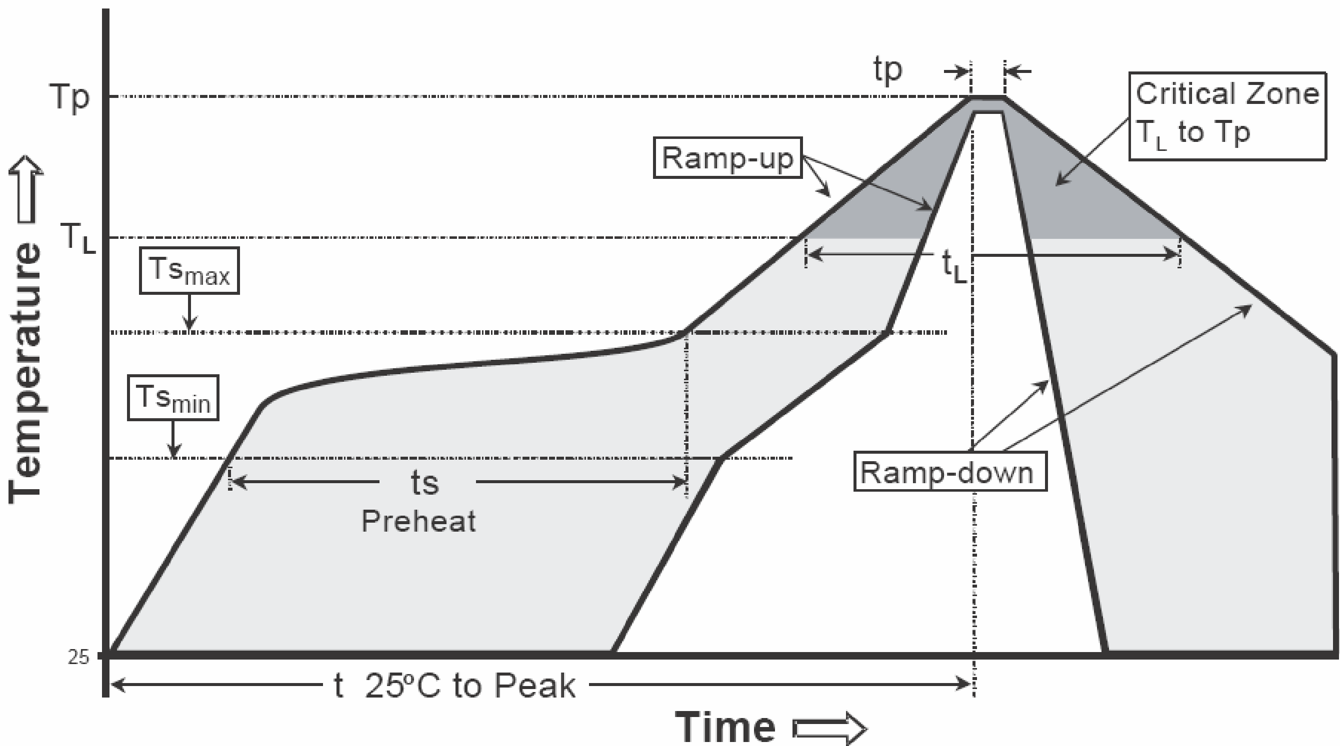
Carrier Tape Dimension



Recommended wave soldering condition

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

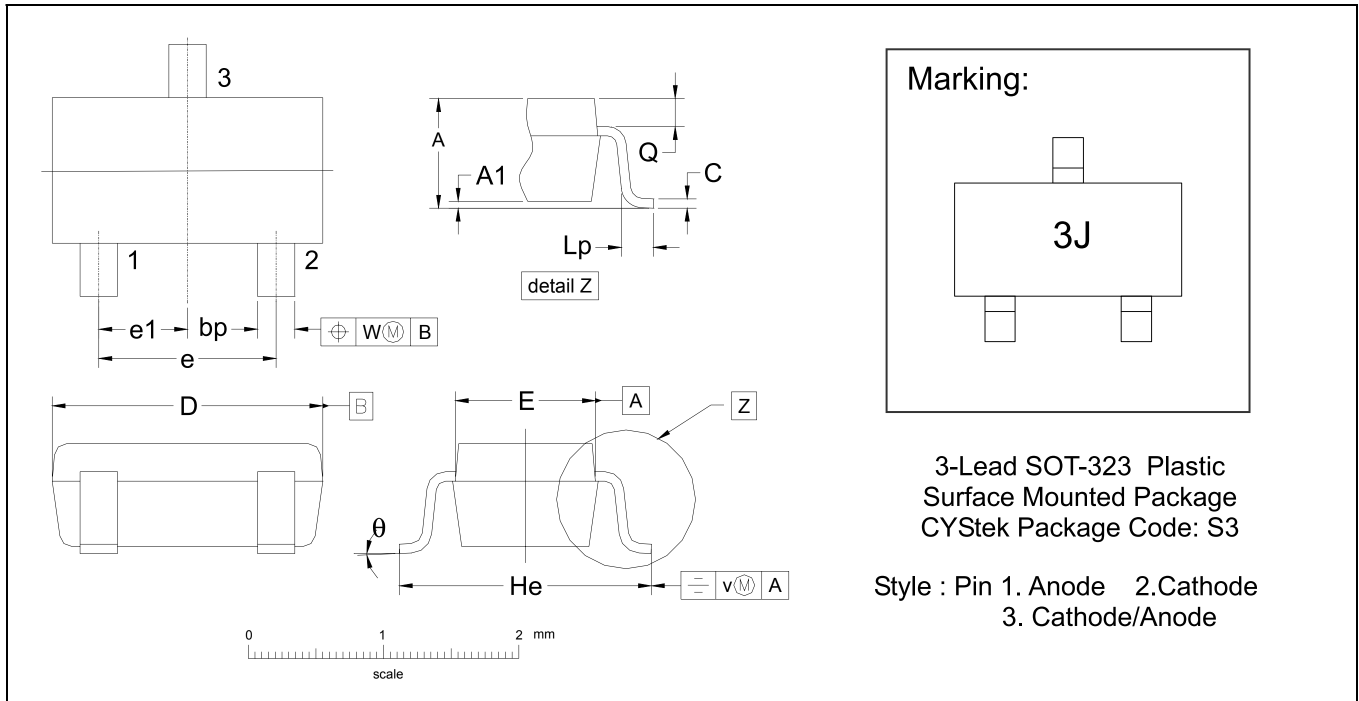
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time(ts min to ts max)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	 183°C 60-150 seconds	 217°C 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.

SOT-323 Dimension



3-Lead SOT-323 Plastic
Surface Mounted Package
CYStek Package Code: S3

Style : Pin 1. Anode 2.Cathode
3. Cathode/Anode

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0315	0.0433	0.80	1.10	e1	0.0256	-	0.65	-
A1	0.0000	0.0039	0.00	0.10	He	0.0787	0.0886	2.00	2.25
bp	0.0118	0.0157	0.30	0.40	Lp	0.0059	0.0177	0.15	0.45
C	0.0039	0.0098	0.10	0.25	Q	0.0051	0.0091	0.13	0.23
D	0.0709	0.0866	1.80	2.20	v	0.0079	-	0.2	-
E	0.0453	0.0531	1.15	1.35	w	0.0079	-	0.2	-
e	0.0512	-	1.3	-	θ	-	-	10°	0°

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
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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