

Schottky barrier diode

RB491DN3

Description

Planar silicon Schottky barrier diode encapsulated in a SOT-23 plastic SMD package.

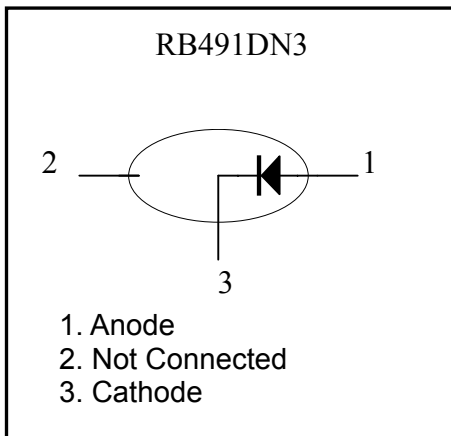
Features

- Small surface mounting type SOT-23
- Ultra low V_F ($V_F=0.4V$ typ at 1A)
- $I_F=1A$ guaranteed despite the size
- Pb-free package

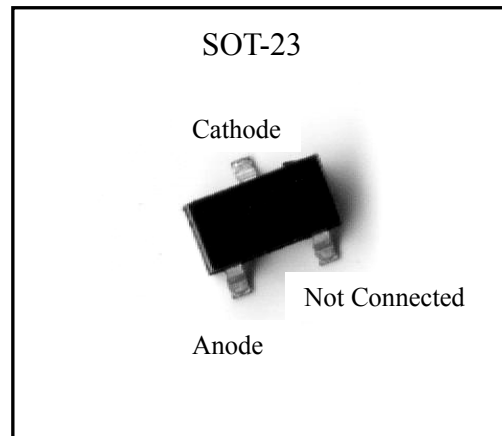
Applications

- Low power rectification
- For switching power supply

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Peak reverse voltage	V_{RM}	25	V
DC reverse voltage	V_R	20	V
DC forward current	I_F	1	A
Peak forward surge current *	I_{FSM}	3	A
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	-40~+125	°C

* 60 Hz for 1 cycle



Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Forward Voltage	V _F	I _F =1A	-	-	0.45	V
Reverse Current	I _R	V _R =20V	-	-	200	μA

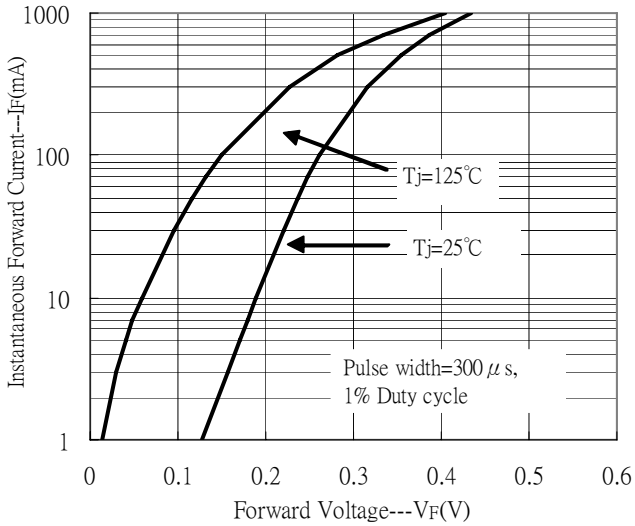
Ordering Information

Device	Package	Shipping	Marking
RB491DN3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	D2E

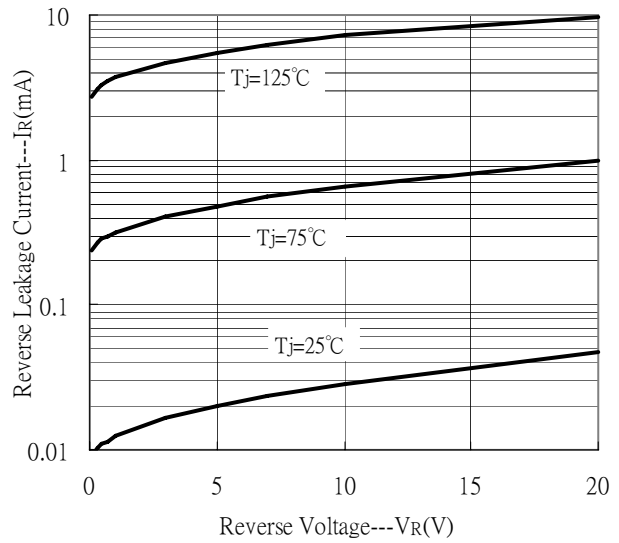


Typical Characteristics

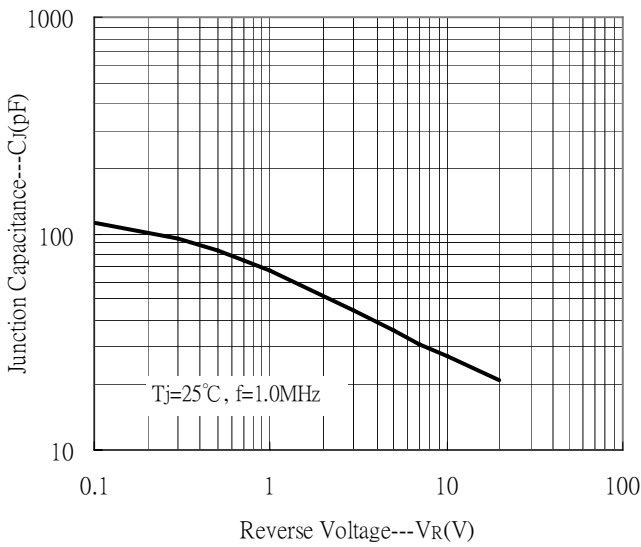
Forward Current vs Forward Voltage



Reverse Leakage Current vs Reverse Voltage



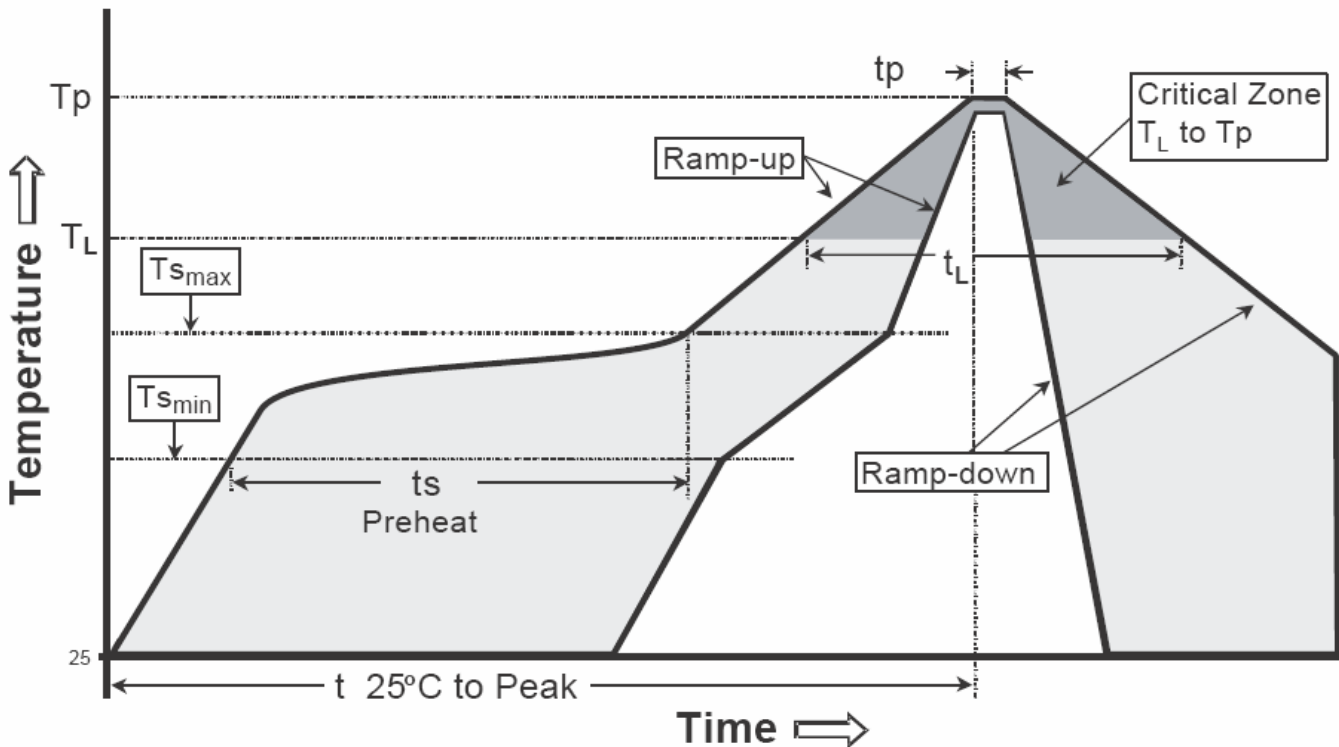
Junction Capacitance vs Reverse Voltage



Recommended wave soldering condition

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

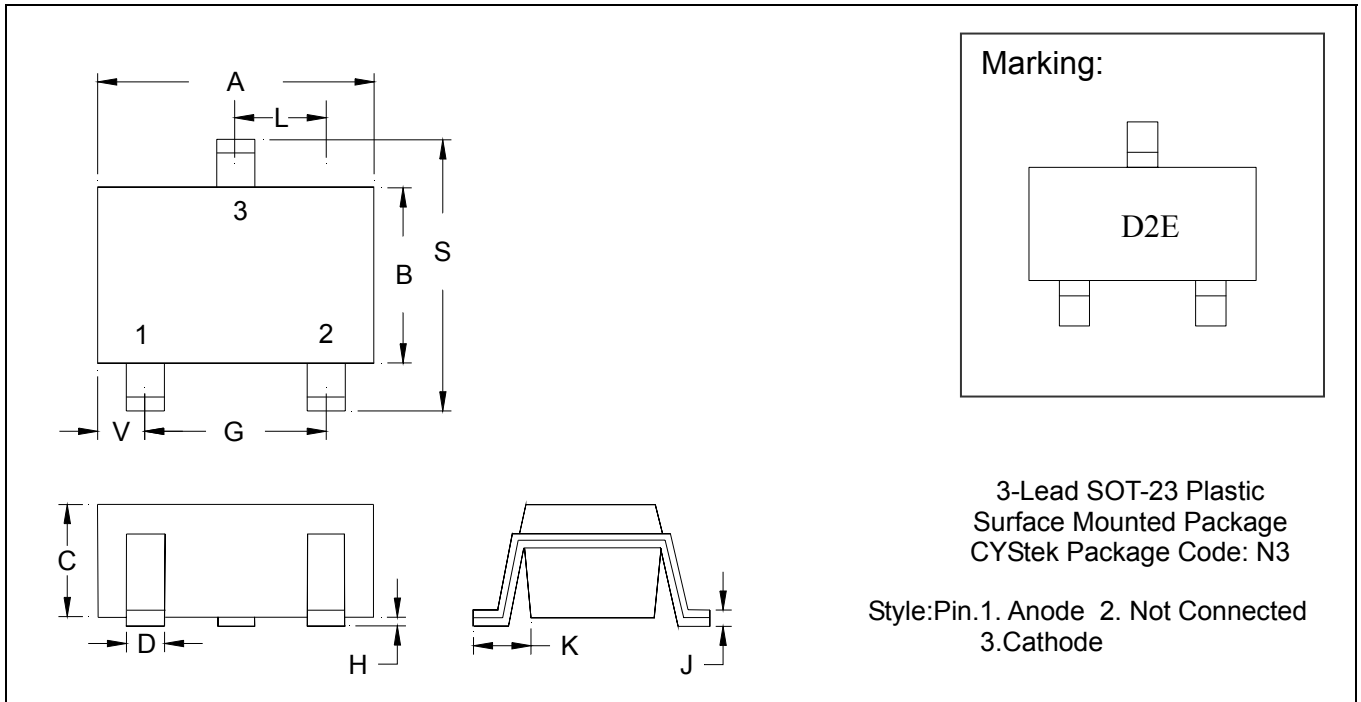
Recommended temperature profile for IR reflow



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(Ts min)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (Tl)	183°C	217°C
- Time (tl)	60-150 seconds	60-150 seconds
Peak Temperature(Tp)	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-23 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

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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