

High voltage switching diode

BAS21S2

Description

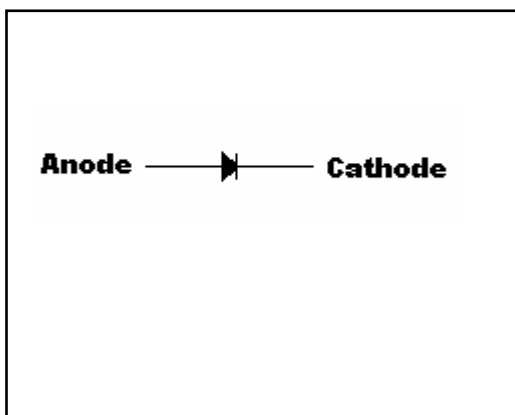
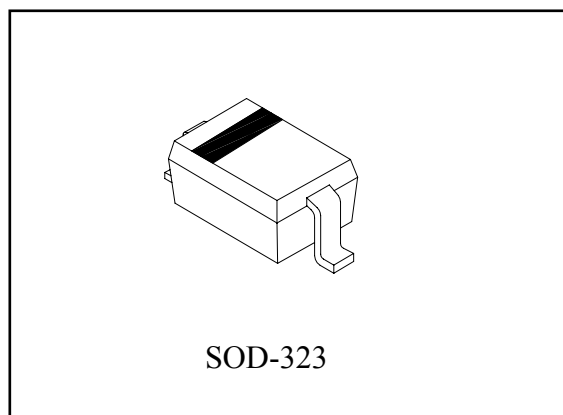
High voltage switching diode encapsulated in a SOD-323 small plastic SMD package.

Features

- Fast switching speed
- Low forward voltage drop
- Small plastic SMD package
- Pb-free lead plating package

Mechanical Data

- Case: Molded Plastic, JEDEC SOD-323.
- Terminals: Solder plated, solderable per MIL-STD-750 Method 2026
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight: 0.0045 gram, 0.000159 ounce

Symbol**Outline**



Absolute Maximum Ratings(Ta=25°C , unless otherwise specified)

- Maximum Temperatures
Storage Temperature Tstg..... -55~+150 °C
Junction Temperature Tj +150 °C
- Maximum Power Dissipation
Total Power Dissipation Ptot (Note)..... 200 mW
Derate above 25°C 1.57mW/°C
- Maximum Voltages and Currents
Continuous Reverse Voltage VR..... 250V
Continuous Forward Current IF (Note)..... 200 mA
Peak Repetitive Forward Current IFRM (Note).....625 mA
- Thermal Resistance, Junction to Ambient Air RθJA.....625°C/W

Note : Parts mounted on FR-5 board with minimum pad.

Characteristics (Ta=25°C)

Characteristic	Symbol	Condition	Min.	Max.	Unit
Reverse Breakdown Voltage	VBR	IR=100μA	250	-	V
Forward Voltage (Note)	VF(1)	IF=100mA	-	1	V
	VF(2)	IF=200mA	-	1.25	V
Reverse Leakage Current (Note)	IR(1)	VR=200V,Tj=25°C	-	100	nA
	IR(2)	VR=200V,Tj=150°C		100	μA
Diode Capacitance	CD	VR=0V, f=1MHz	-	5	pF
Reverse Recovery Time	trr	IF=IR=30mA RL=100Ω measured at IR=3mA	-	50	ns

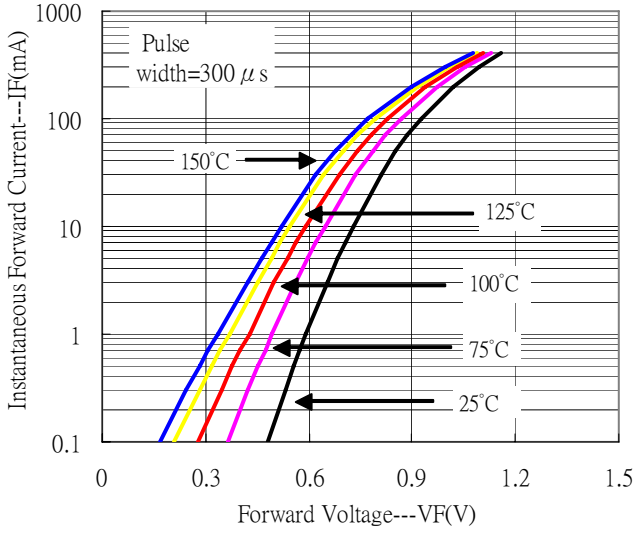
Notes: Pulse test, tp=380μs, duty cycle<2%.

Ordering Information

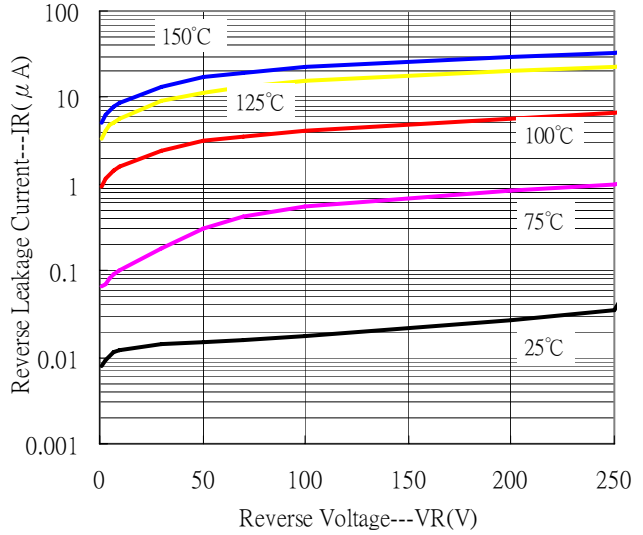
Device	Package	Shipping	Marking
BAS21S2	SOD-323 (Pb-free package)	3000 pcs / Tape & Reel	JS

Typical Characteristics

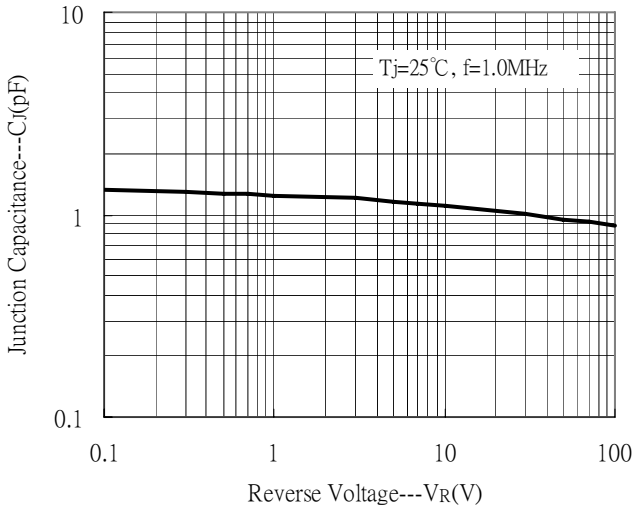
Forward Current vs Forward Voltage



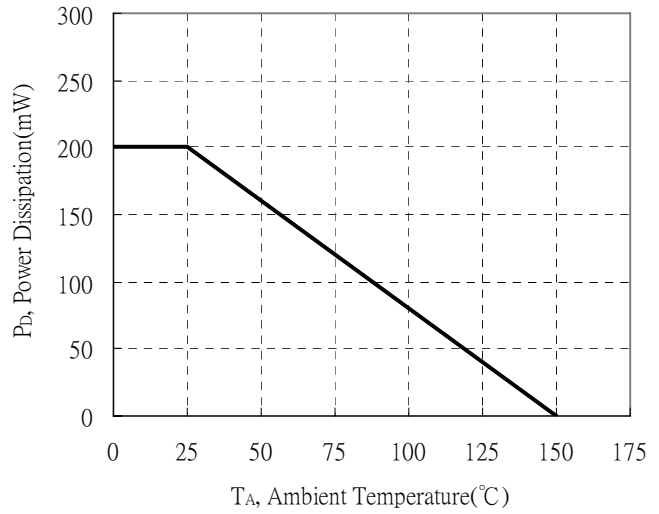
Reverse Leakage Current vs Reverse Voltage



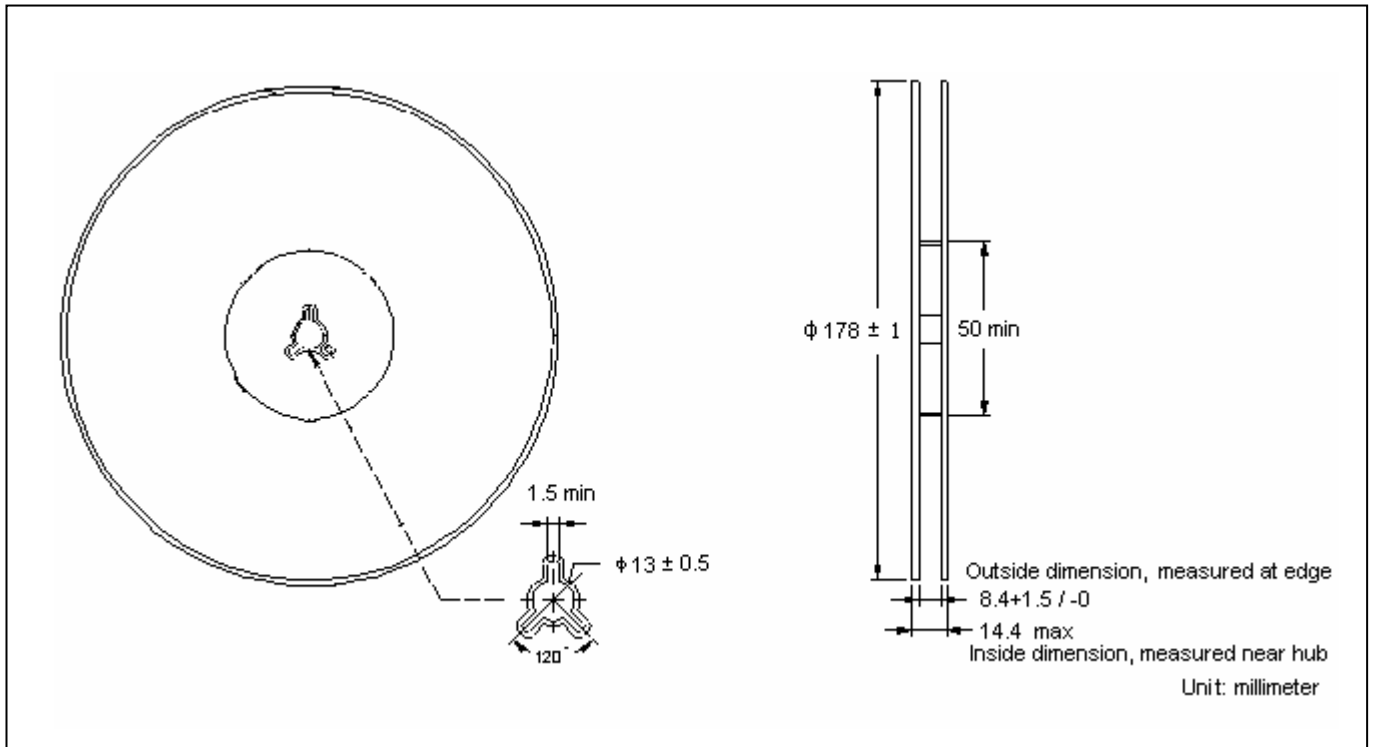
Junction Capacitance vs Reverse Voltage



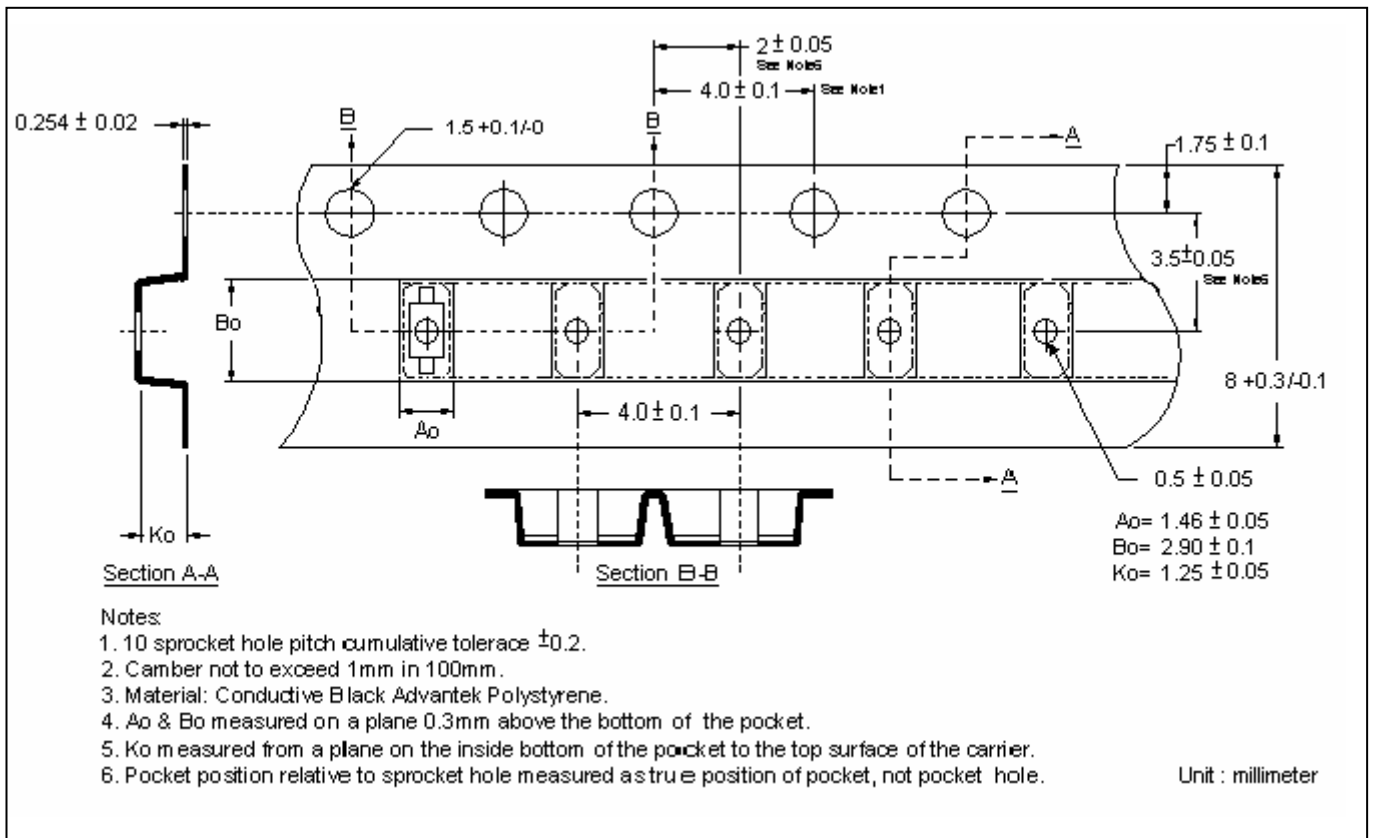
Power Derating Curve



Reel Dimension



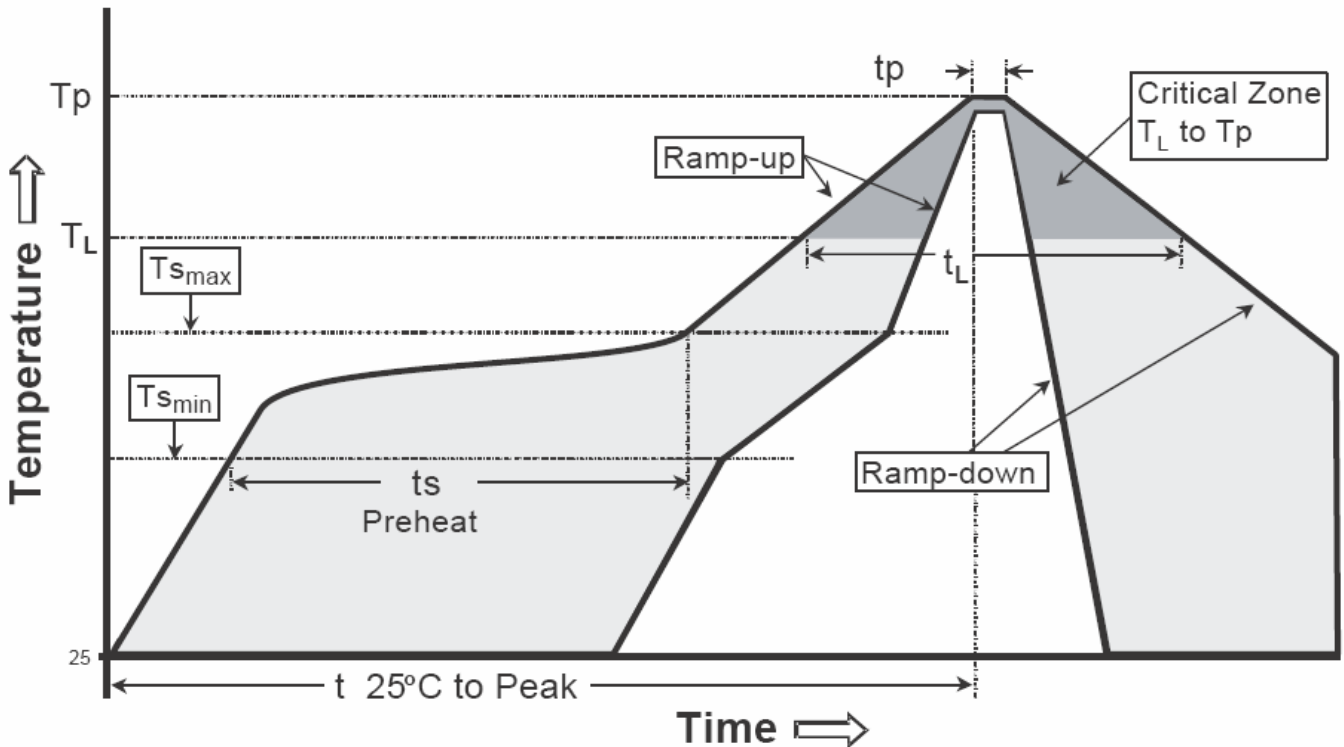
Carrier Tape Dimension



Recommended wave soldering condition

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

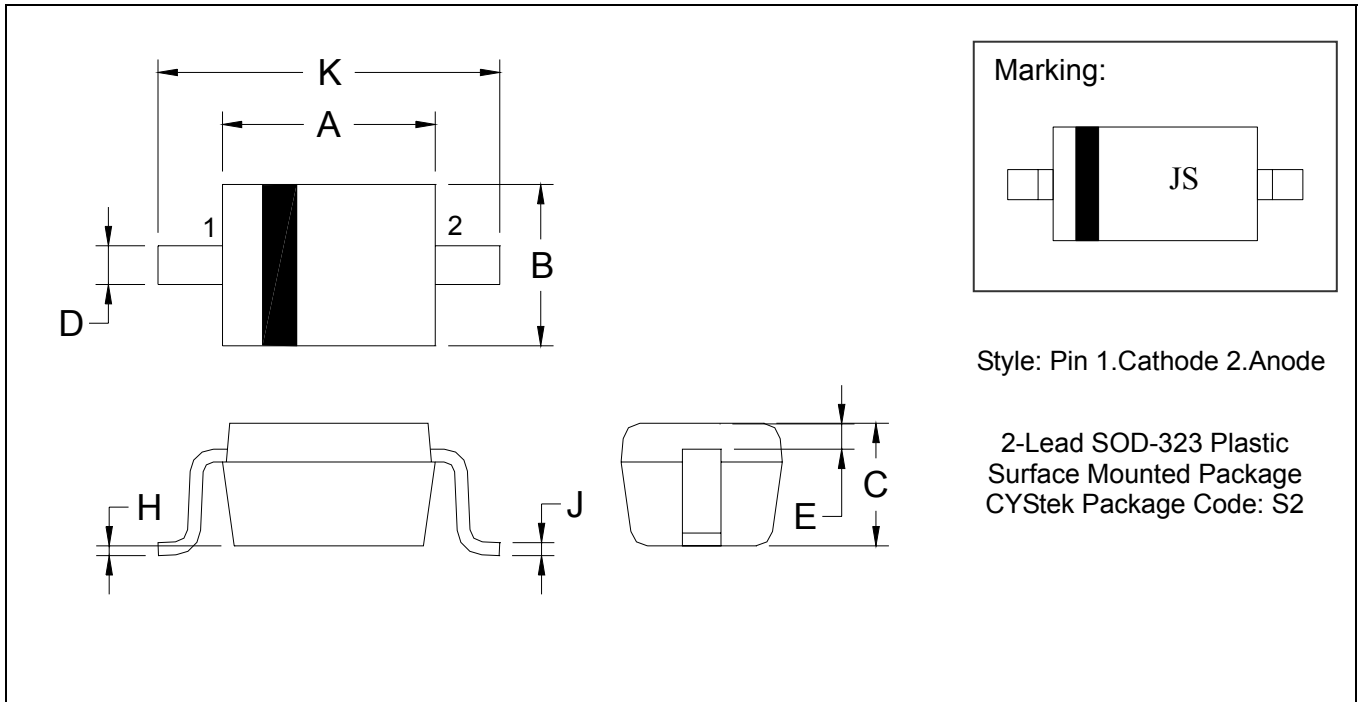
Recommended temperature profile for IR reflow



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



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0630	0.0709	1.60	1.80	E	0.0060	-	0.15	-
B	0.0453	0.0531	1.15	1.35	H	0.0000	0.0040	0.00	0.10
C	0.0315	0.0394	0.80	1.00	J	0.0035	0.0070	0.089	0.18
D	0.0098	0.0157	0.25	0.40	K	0.0906	0.1063	2.30	2.70

- 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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