High voltage switching diode

BAS21C2

Description

High voltage switching diode encapsulated in a SOD-523 small plastic SMD package.

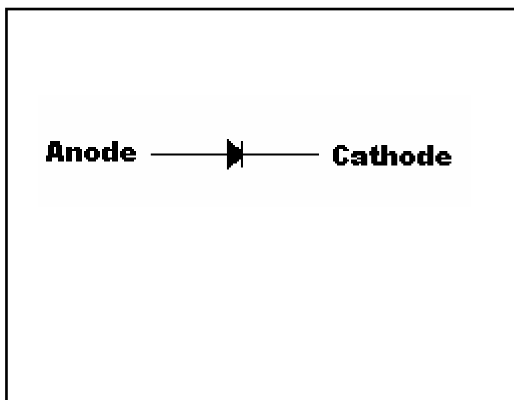
Features

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

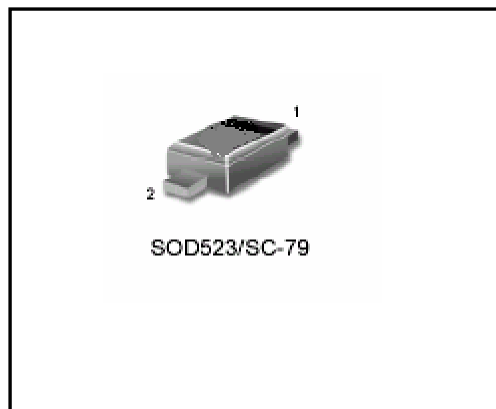
Mechanical Data

- Case: Molded Plastic, JEDEC SOD-523.
- Terminals: Solder plated, solderable per MIL-STD-750 Method 2026
- Polarity: Indicated by cathode band.
- Mounting Position : Any.

Symbol



Outline



Absolute Maximum Ratings (T_A=25℃, unless otherwise noted)

Parameters	Conditions	Symbol	Min	Typ	Max	Units
Repetitive peak reverse voltage		V_{RRM}			300	V
RMS voltage		V_{RMS}			210	V
Continuous reverse voltage		V_R			300	V
Continuous forward current		I_F			250	mA
Repetitive peak forward current	tp=1ms, duty≤0.25	I_{FRM}			1	A
Non-repetitive peak forward current	t=1μs	I_{FSM}			4.5	A
Total Device Dissipation	T_A=25°C (Note 1)	P_D			250	mW
	T_{SP}≤90°C (Note 2)				500	
Thermal resistance	Junction to ambient (Note 1)	$R_{\theta JA}$			500	°C/W
	Junction to soldering point (Note3)	$R_{\theta JSP}$			120	
Storage temperature range		Tstg	-65		150	°C
Operating junction temperature range		Tj	-55		150	°C

Note :1.Parts mounted on FR-5 board with minimum pad, in free air.
2.Tsp is the solder point temperature at the soldering point of the cathode tab.
3.Soldering point of cathode tab.

Characteristics (Ta=25°C)

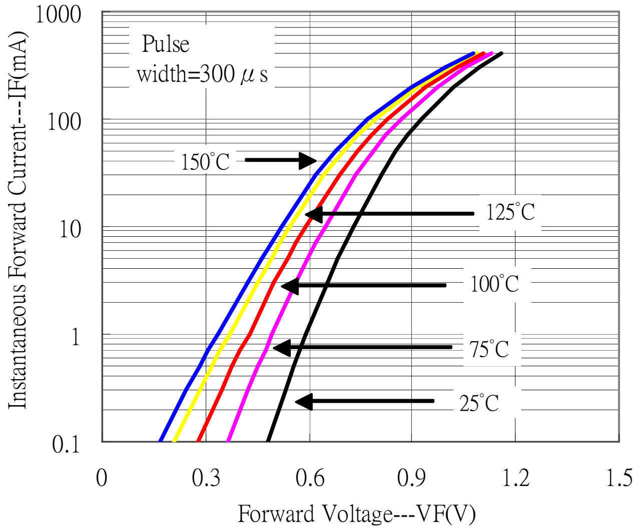
Characteristic	Symbol	Condition	Min.	Max.	Unit
Reverse Breakdown Voltage	V_{BR}	I_R=100μA	300	-	V
Forward Voltage (Note)	V_F(1)	I_F=100mA	-	1	V
	V_F(2)	I_F=200mA	-	1.25	V
Reverse Leakage Current (Note)	I_R(1)	V_R=250V,Tj=25℃	-	150	nA
	I_R(2)	V_R=250V,Tj=150℃		100	μA
Diode Capacitance	C_D	V_R=0V, f=1MHz	-	5	pF
Reverse Recovery Time	t_{rr}	I_F=I_R=30mA RL=100Ω measured at I_R=3mA	-	50	ns

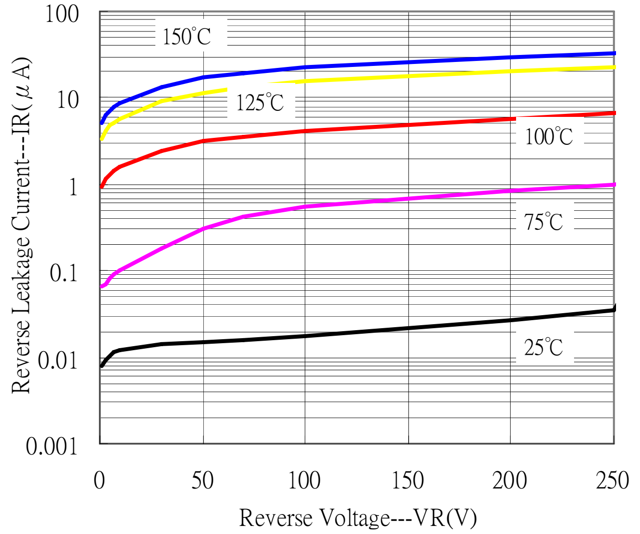
Notes: Pulse test, tp=300μs, duty cycle<2%.

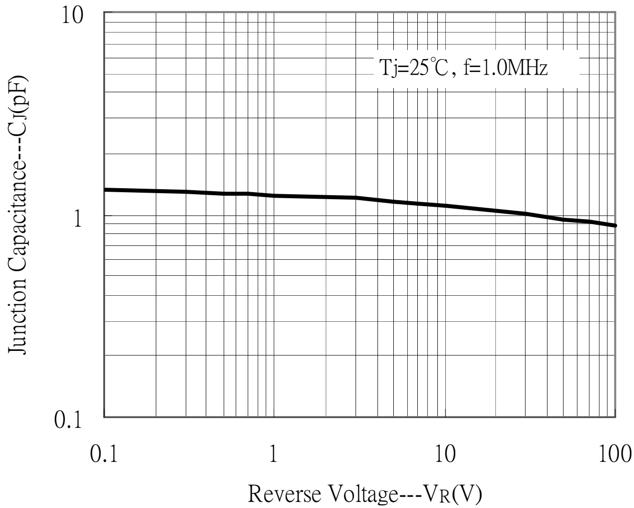
Ordering Information

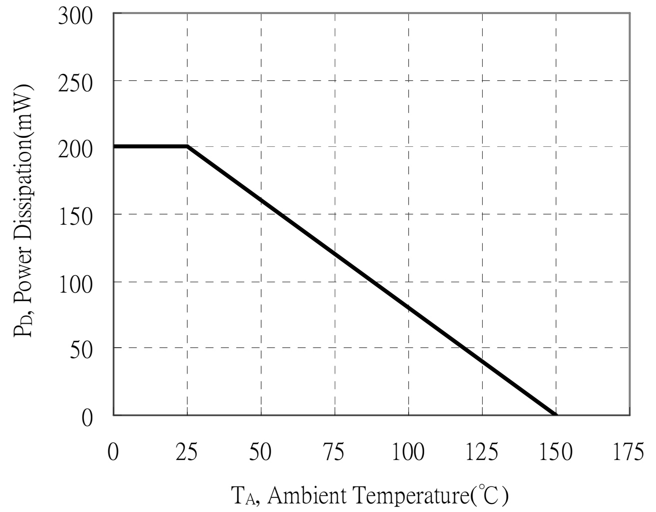
Device	Package	Shipping
BAS21C2-0-T5-G	SOD-523 (Pb-free lead plating and halogen-free package)	8000 pcs / Tape & Reel

Typical Characteristics

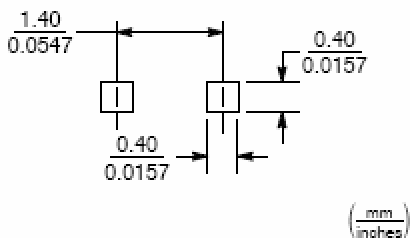




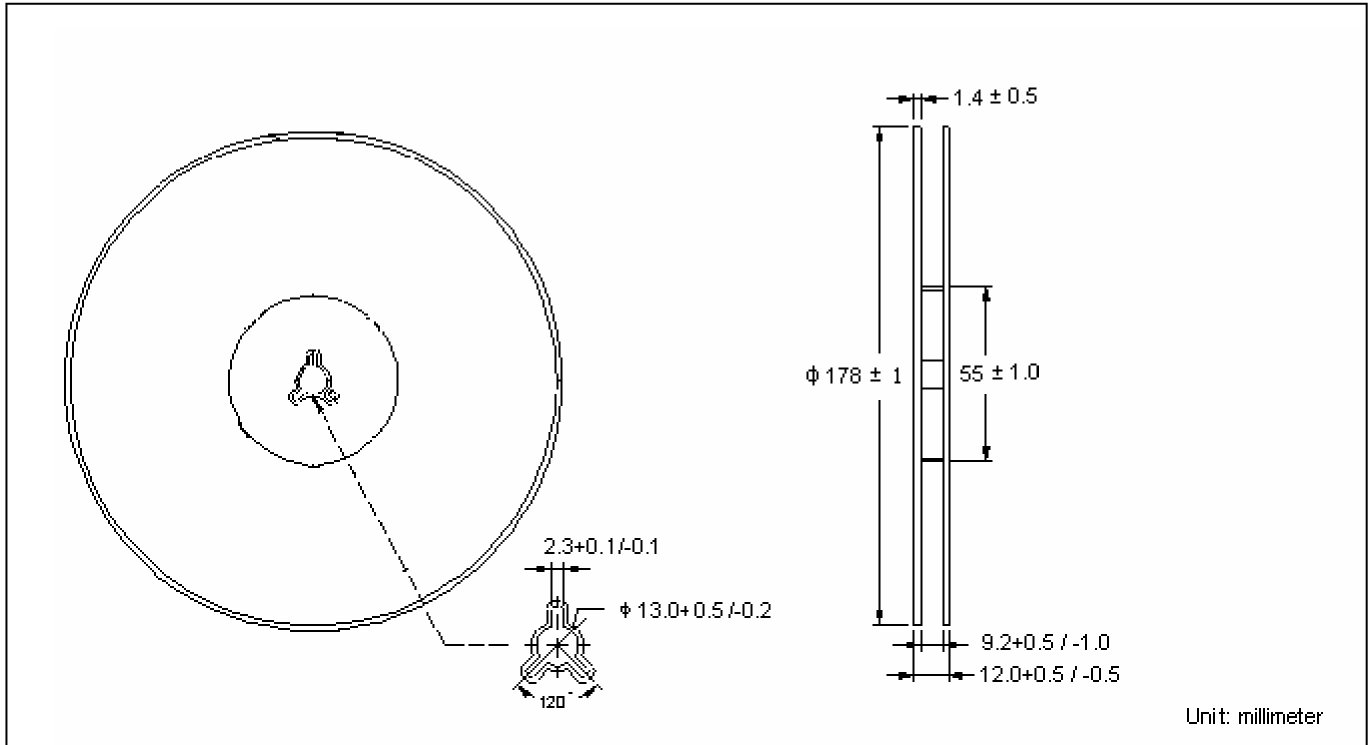




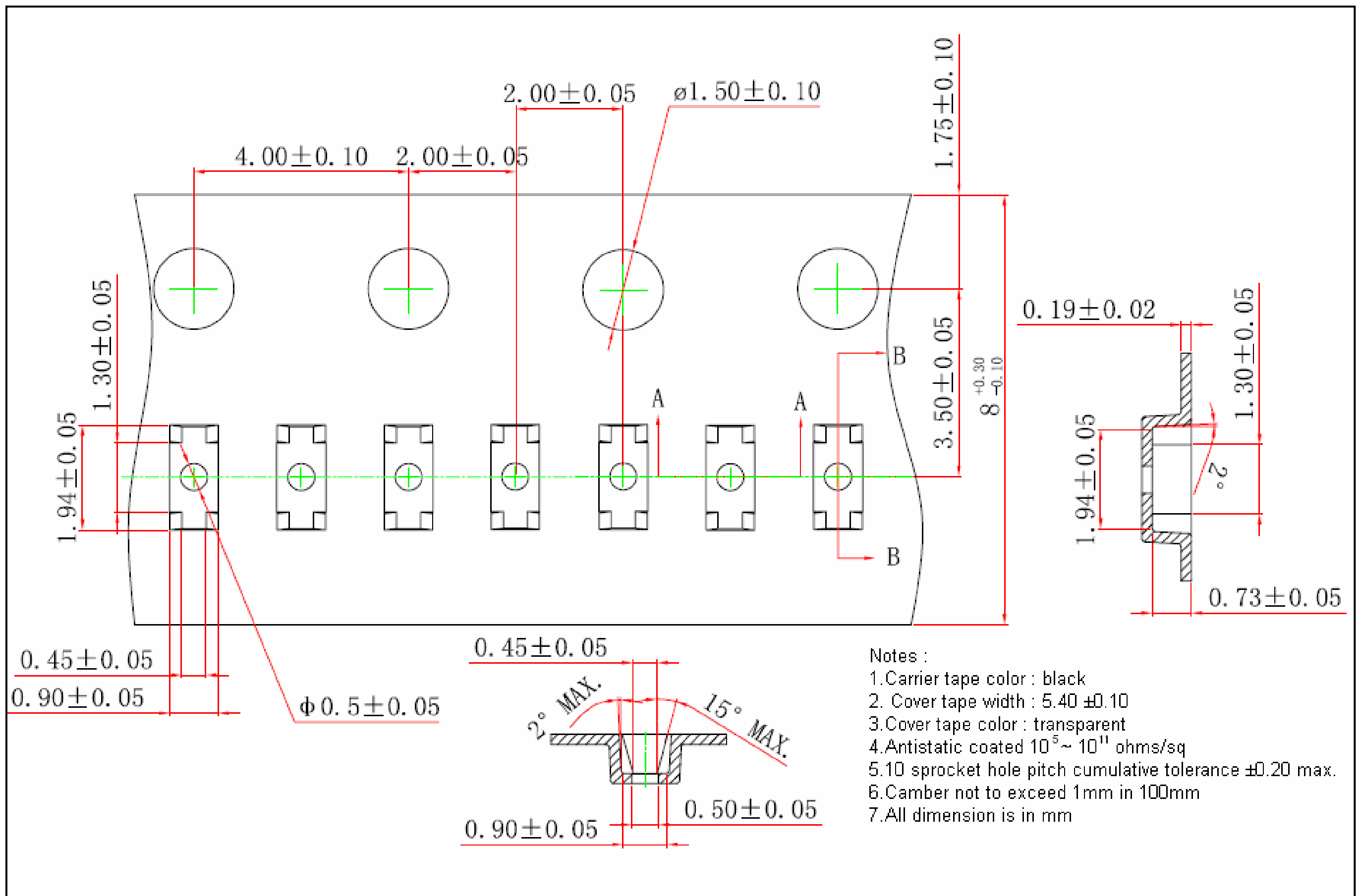
Recommended Footprint



Reel Dimension



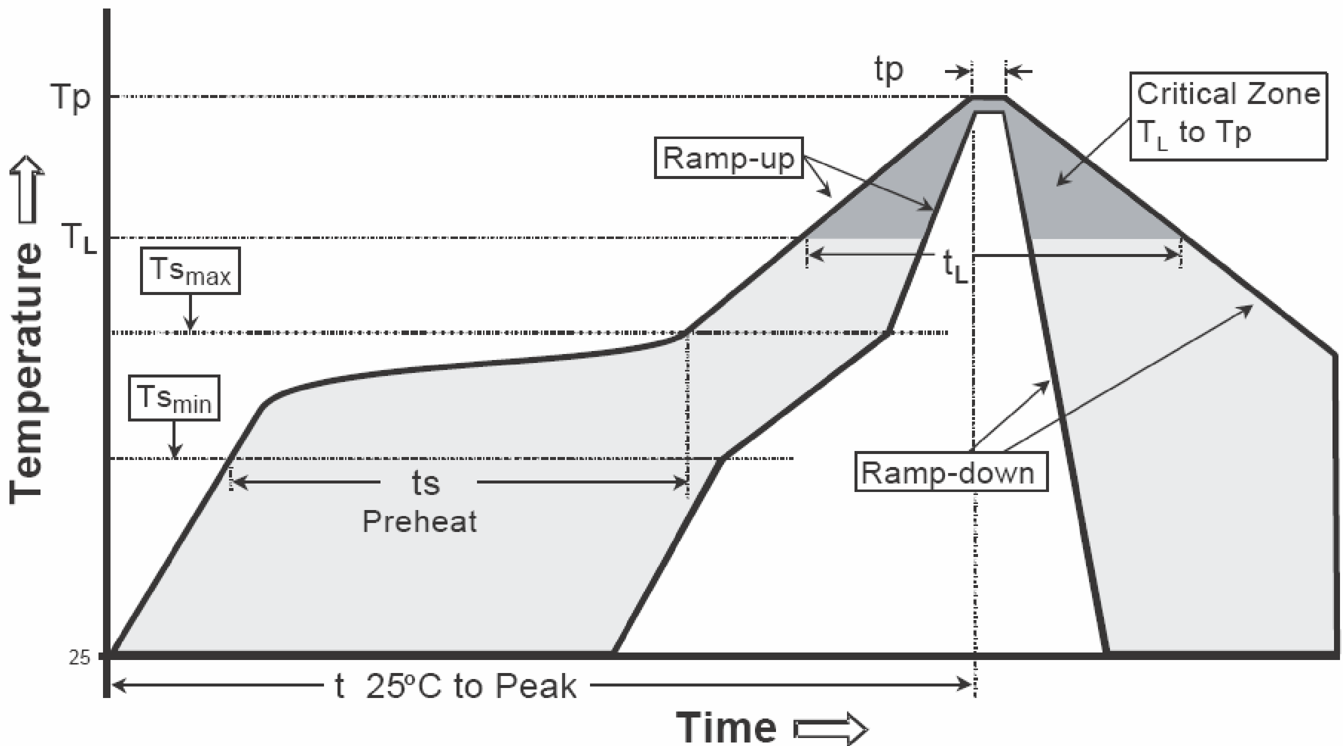
Carrier Tape Dimension



Recommended wave soldering condition

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

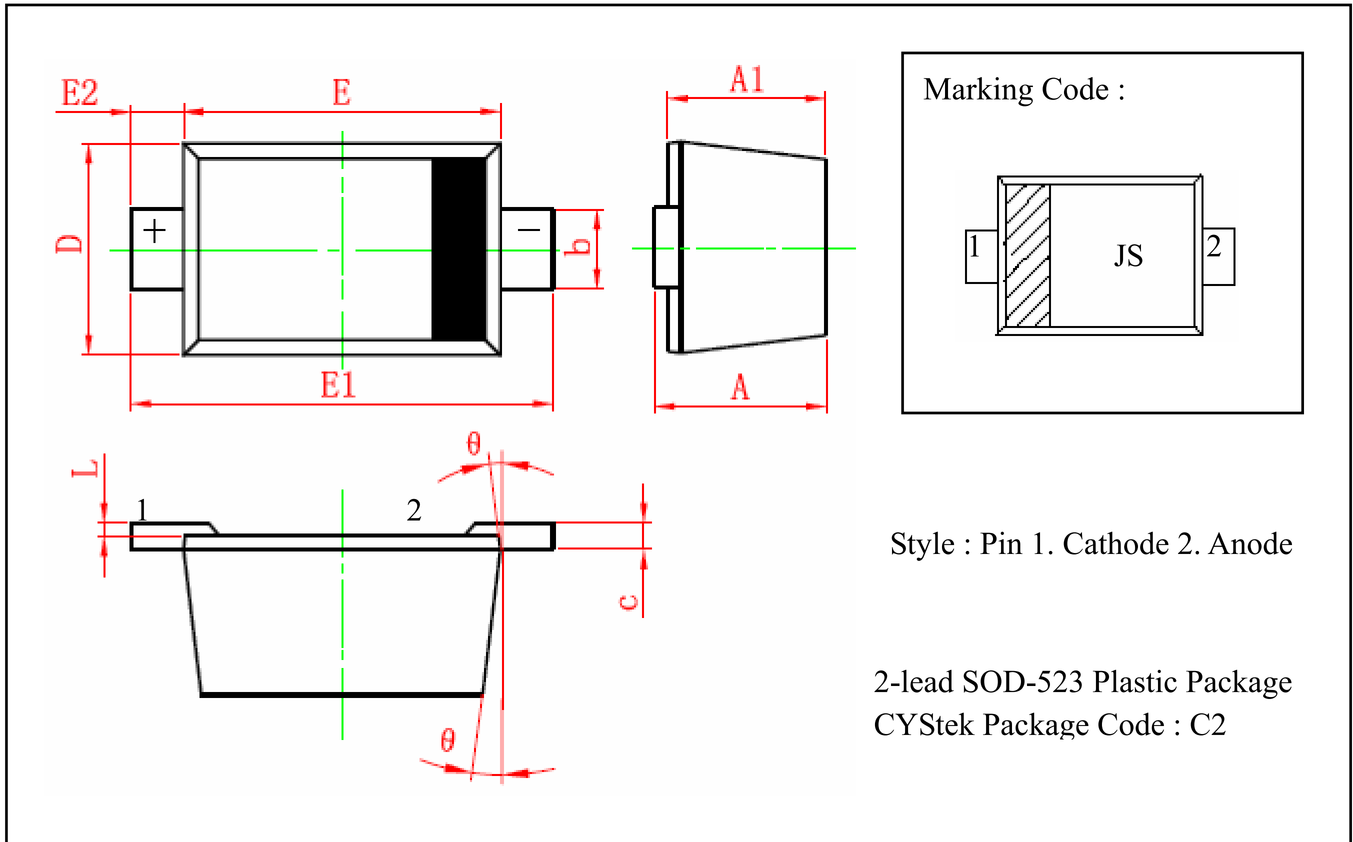
Recommended temperature profile for IR reflow



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(Ts min) −Temperature Max(Ts 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.

SOD-523 Dimension



*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.	Min.	Min.	Max.	Min.	Max.
A	0.510	0.770	0.020	0.031	E	1.100	1.300	0.043	0.051
A1	0.500	0.700	0.020	0.028	E1	1.500	1.700	0.059	0.067
b	0.250	0.350	0.010	0.014	E2	0.200 REF		0.008 REF	
c	0.080	0.150	0.003	0.006	L	0.010	0.070	0.001	0.003
D	0.750	0.850	0.030	0.033	θ	7° REF		7° REF	

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