Fast Switching Diodes

BAS21SH

SOD-123

Features

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

Mechanical Data

- Case: Molded plastic, JEDEC SOD-123.
- Terminals: Pure tin plated, solderable per MIL-STD-202 method 208
- Polarity: Indicated by cathode band.
- Weight: 0.01 gram approximately

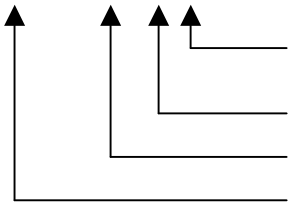
Maximum Ratings and Electrical Characteristics

(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Type	Units
Non-repetitive peak reverse voltage	V_{RM}	250	V
Repetitive peak reverse voltage	V_{RRM}	250	
Working peak reverse voltage	V_{RWM}	250	
RMS voltage	V_{RMS}	141	
DC blocking voltage	V_R	250	
Forward continuous current	I_{FM}	400	mA
Average rectified output current	I_O	200	
Peak forward surge current @ t=1ms	I_{FSM}	2.5	A
t=1s		0.5	
Repetitive peak forward current	I_{FRM}	625	mA
Power dissipation	P_D	500	mW
Thermal resistance, Junction to ambient	$R_{\theta JA}$	250	℃/W
Operating and storage temperature range	T_J;T_{STG}	-65 ~ +150	℃

Ordering Information

Device	Package	Shipping
BAS21SH-0-T1-G	SOD-123 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel



Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

Packing spec, T1 : 3000 pcs / tape & reel,7” reel

Product rank, zero for no rank products

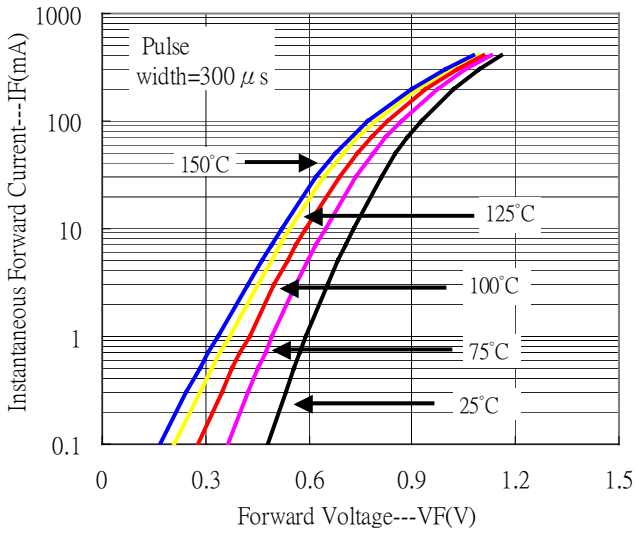
Product name

Electrical Characteristics @ T_A=25℃ unless otherwise specified

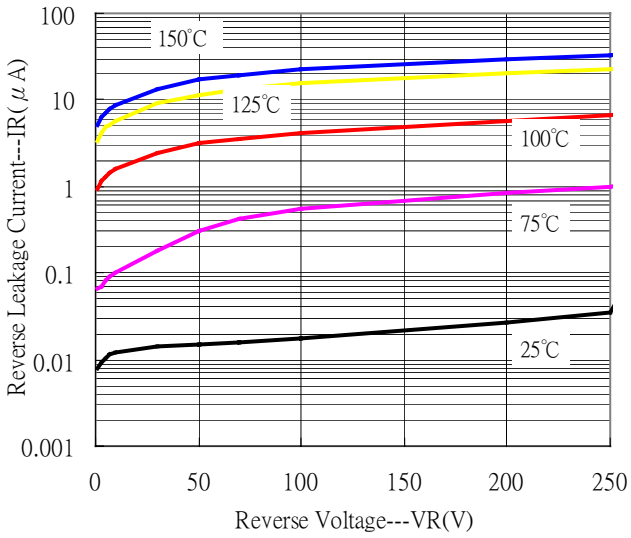
Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Forward voltage	V_F	I_F=100mA I_F=200mA	-	-	1 1.25	V
Reverse current	I_R	V_R=200V	-	-	100	nA
Junction Capacitance	C_J	V_R=0V, f=1MHz	-	-	5	pF
Reverse recovery time	trr	I_F=I_R=30mA, Irr=0.1×I_R, R_L=100Ω	-	-	50	ns

Typical Characteristics

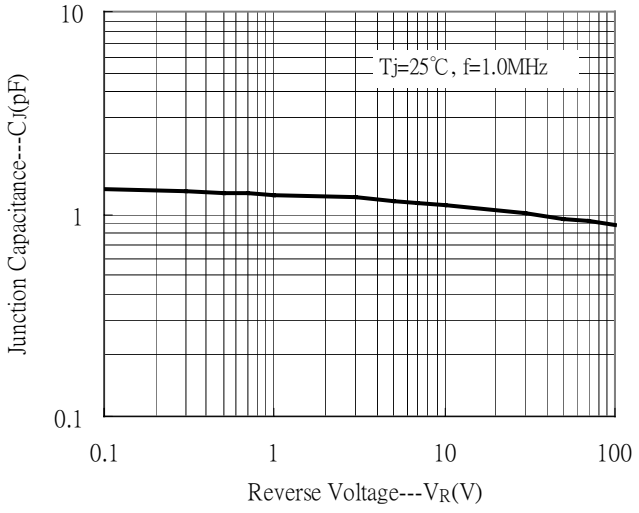
Forward Current vs Forward Voltage



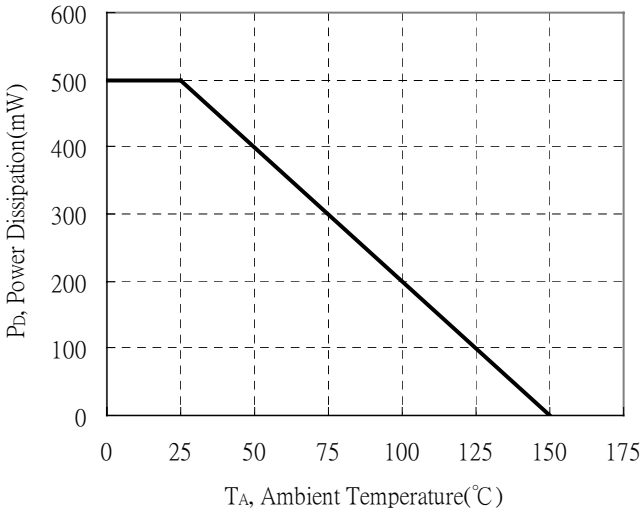
Reverse Leakage Current vs Reverse Voltage



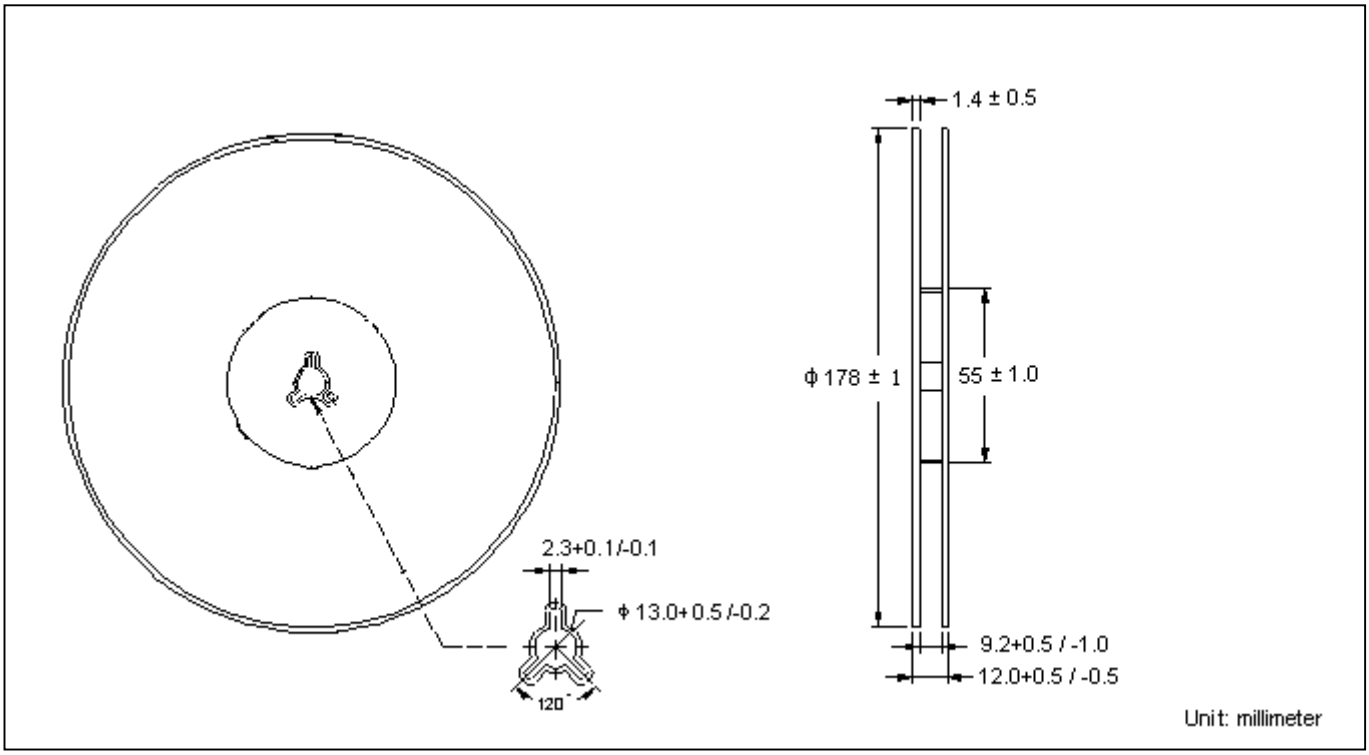
Junction Capacitance vs Reverse Voltage



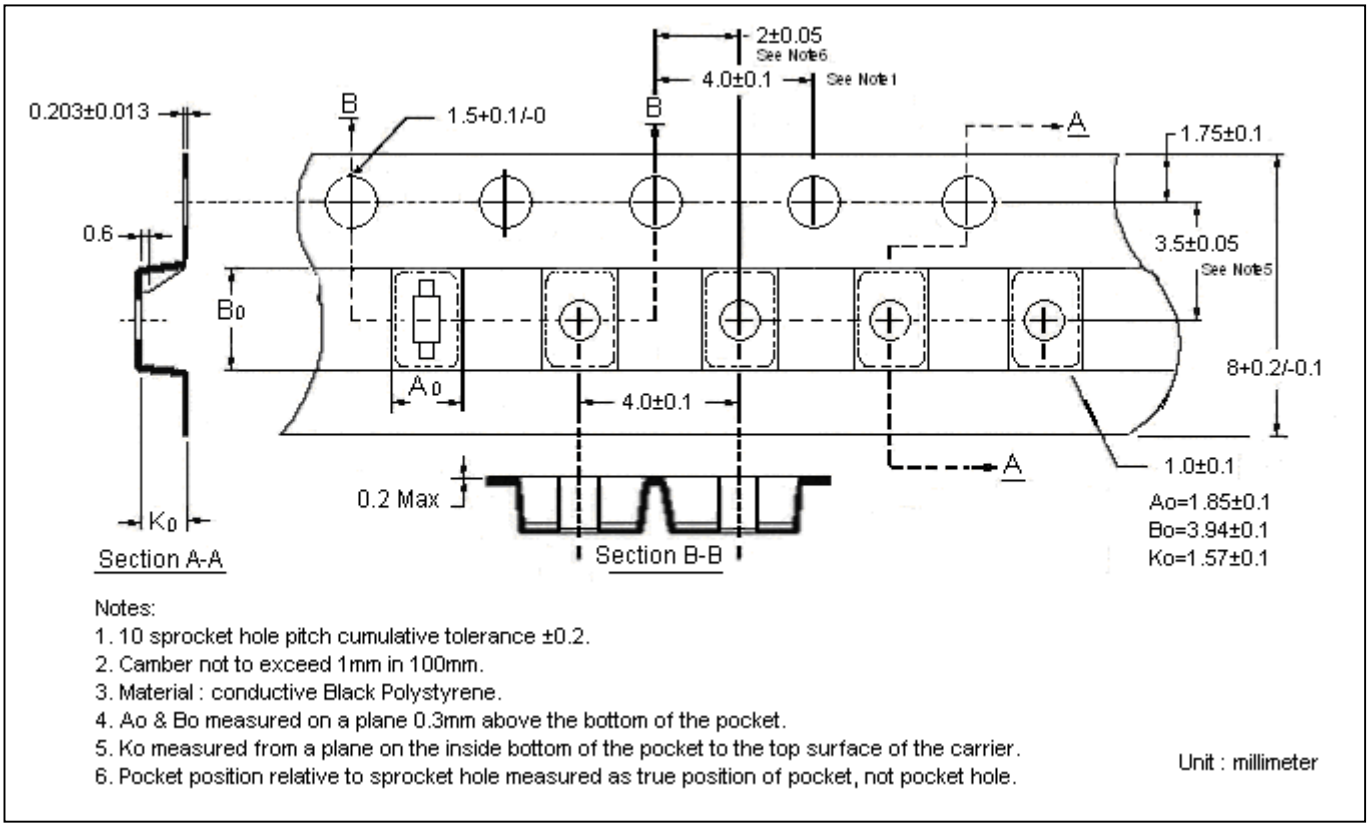
Power Derating Curve



Reel Dimension



Carrier Tape Dimension



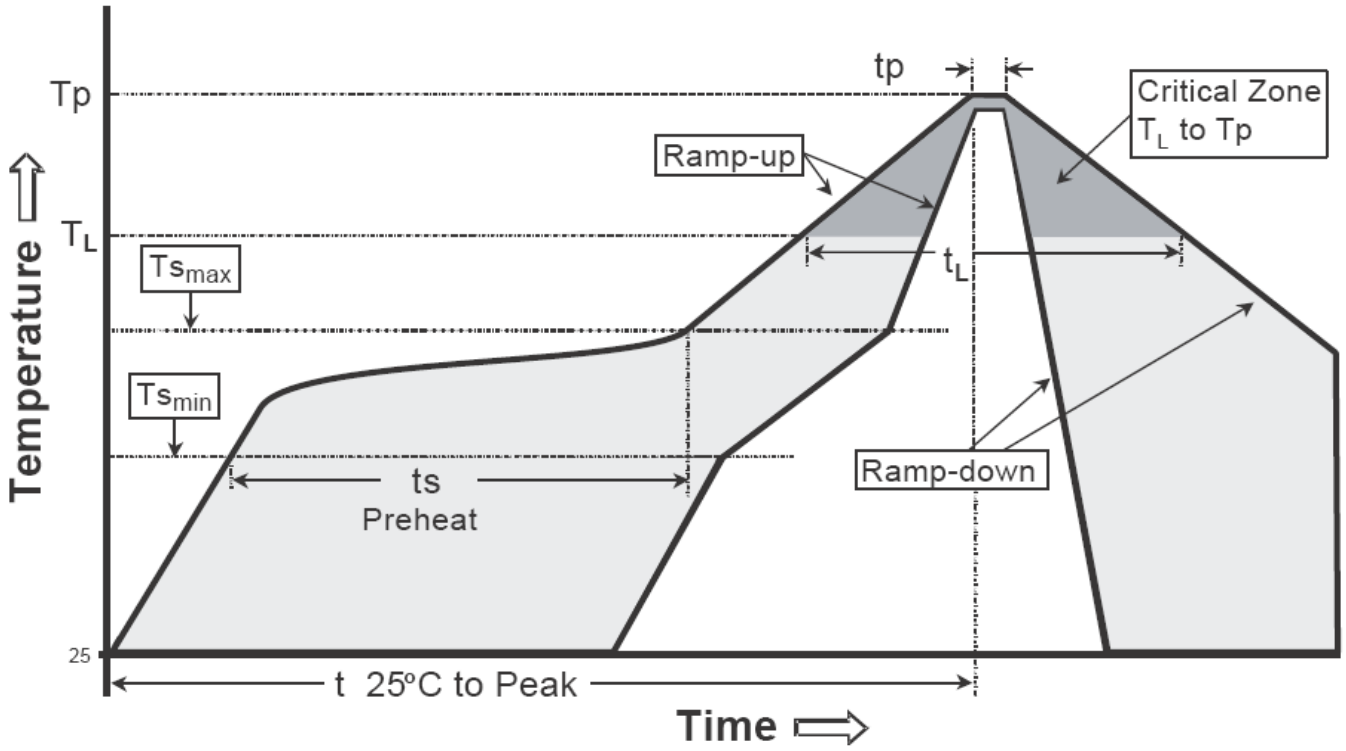
Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

Recommended wave soldering condition

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

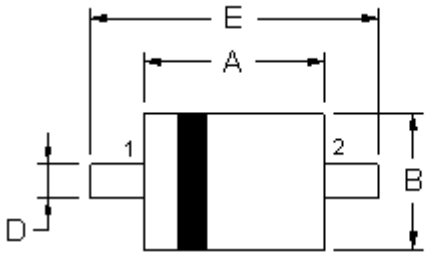
Recommended temperature profile for IR reflow



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 (TL) − Time (tL)	 183°C 60-150 seconds	 217°C 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.

SOD-123 Dimension



Marking:

2-Lead SOD-123 Plastic
Surface Mounted Package
CYStek Package Code: SH

Style: Pin 1.Cathode 2.Anode

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.102	0.110	2.600	2.800	D	0.018	0.026	0.450	0.650
B	0.059	0.067	1.500	1.700	E	0.140	0.152	3.550	3.850
C	0.041	0.049	1.050	1.250					

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.