

**Fast Switching Diodes**

# BAS21SH


**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

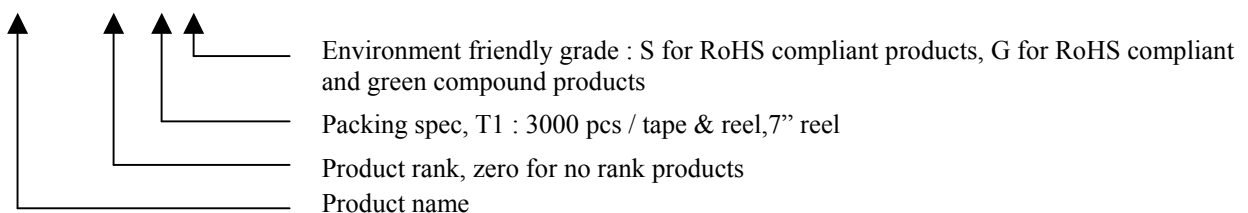
**Maximum Ratings and Electrical Characteristics**

(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 @	$I_{FSM}$	$t=1ms$	A
		$t=1s$	
Repetitive peak forward current	$I_{FRM}$	625	mA
Power dissipation	$P_D$	500	mW
Thermal resistance, Junction to ambient	$R_{\theta JA}$	250	°C/W
Operating and storage temperature range	$T_J; T_{STG}$	-65 ~ +150	°C

**Ordering Information**

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



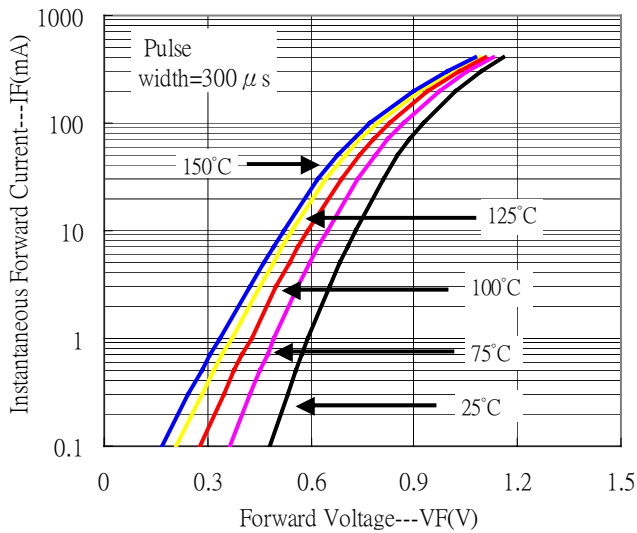


**Electrical Characteristics @  $T_A=25^\circ\text{C}$  unless otherwise specified**

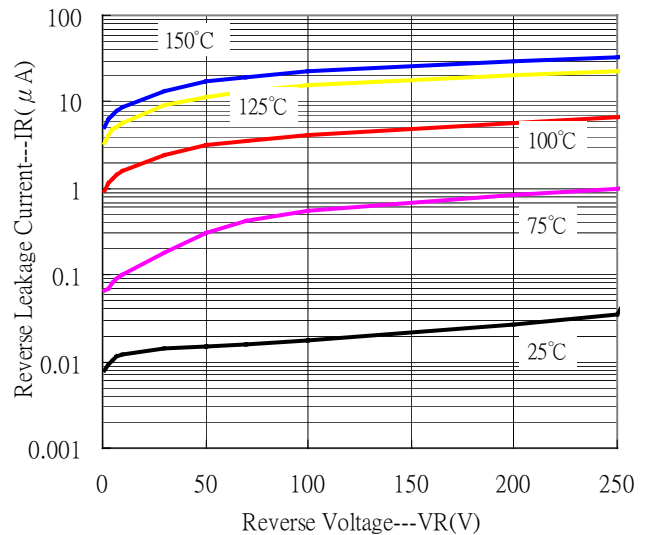
Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Forward voltage	$V_F$	$I_F=100\text{mA}$ $I_F=200\text{mA}$	-	-	1 1.25	V
Reverse current	$I_R$	$V_R=200\text{V}$	-	-	100	nA
Junction Capacitance	$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$	-	-	5	pF
Reverse recovery time	$t_{rr}$	$I_F=I_R=30\text{mA}$ , $I_{rr}=0.1 \times I_R$ , $R_L=100\Omega$	-	-	50	ns

**Typical Characteristics**

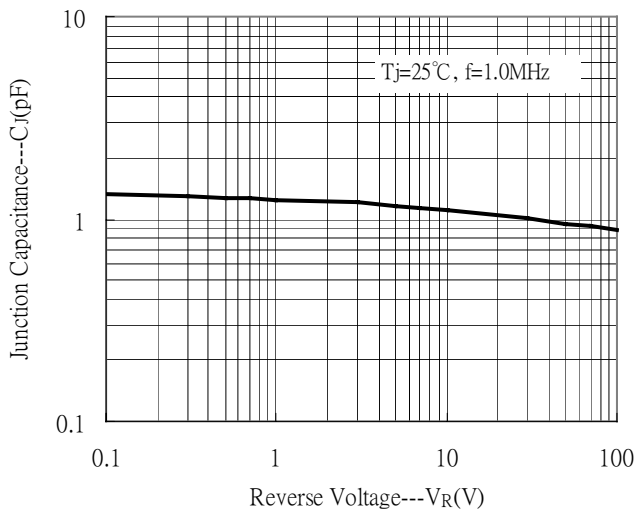
Forward Current vs Forward Voltage



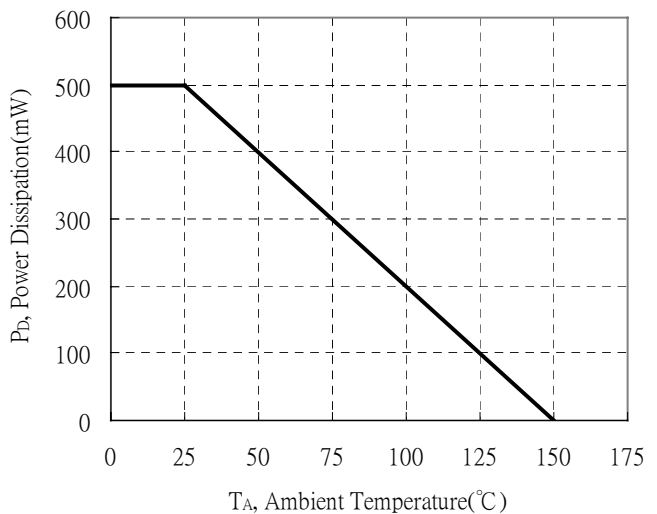
Reverse Leakage Current vs Reverse Voltage



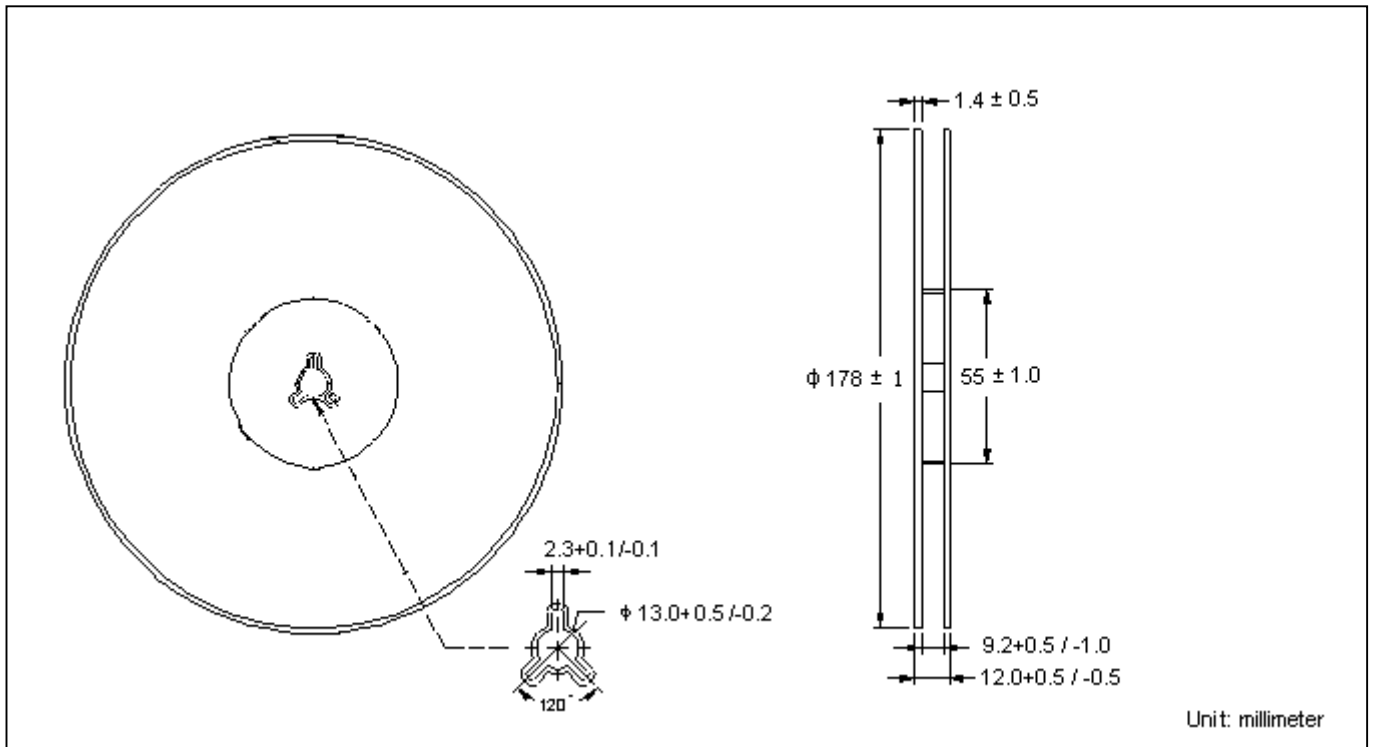
Junction Capacitance vs Reverse Voltage



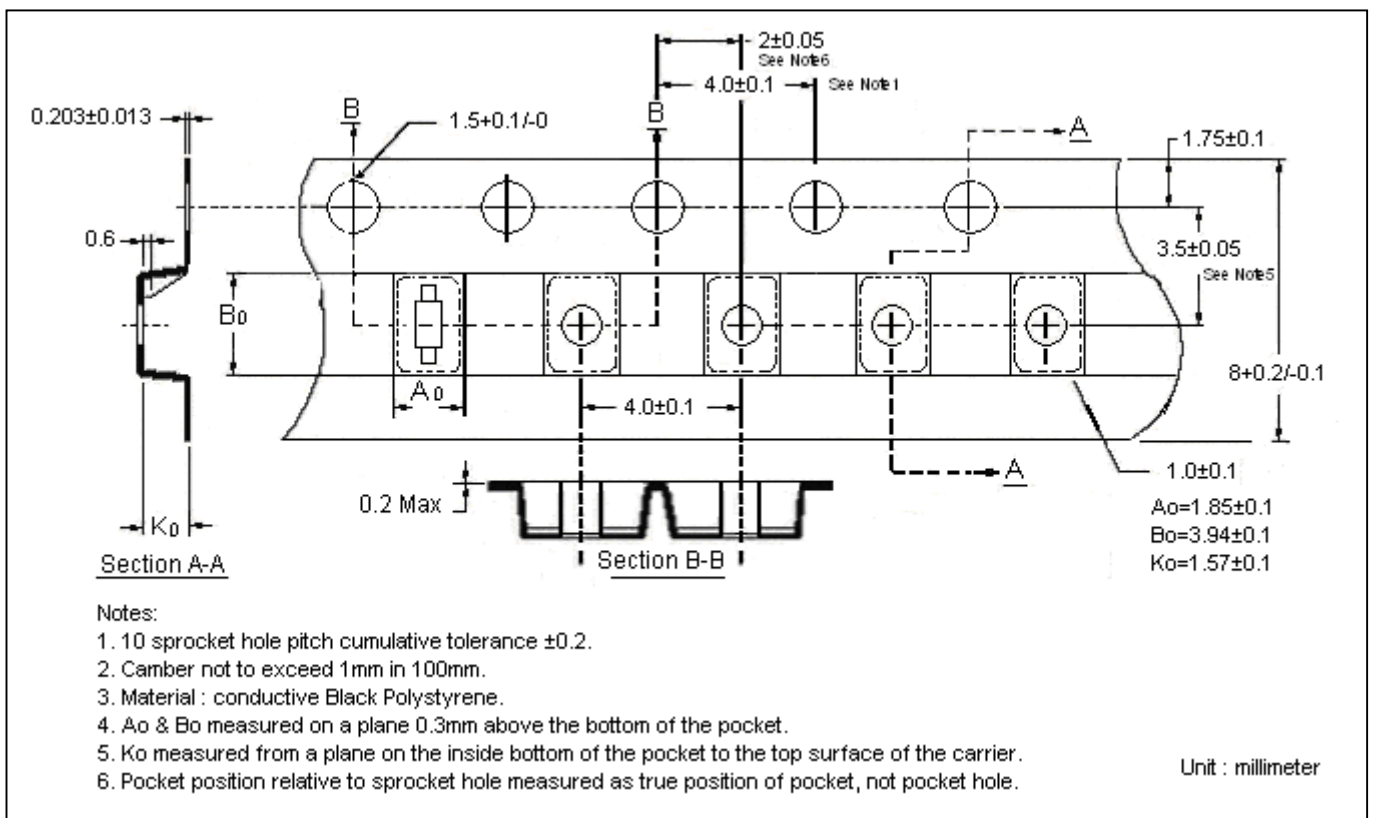
Power Derating Curve



**Reel Dimension**

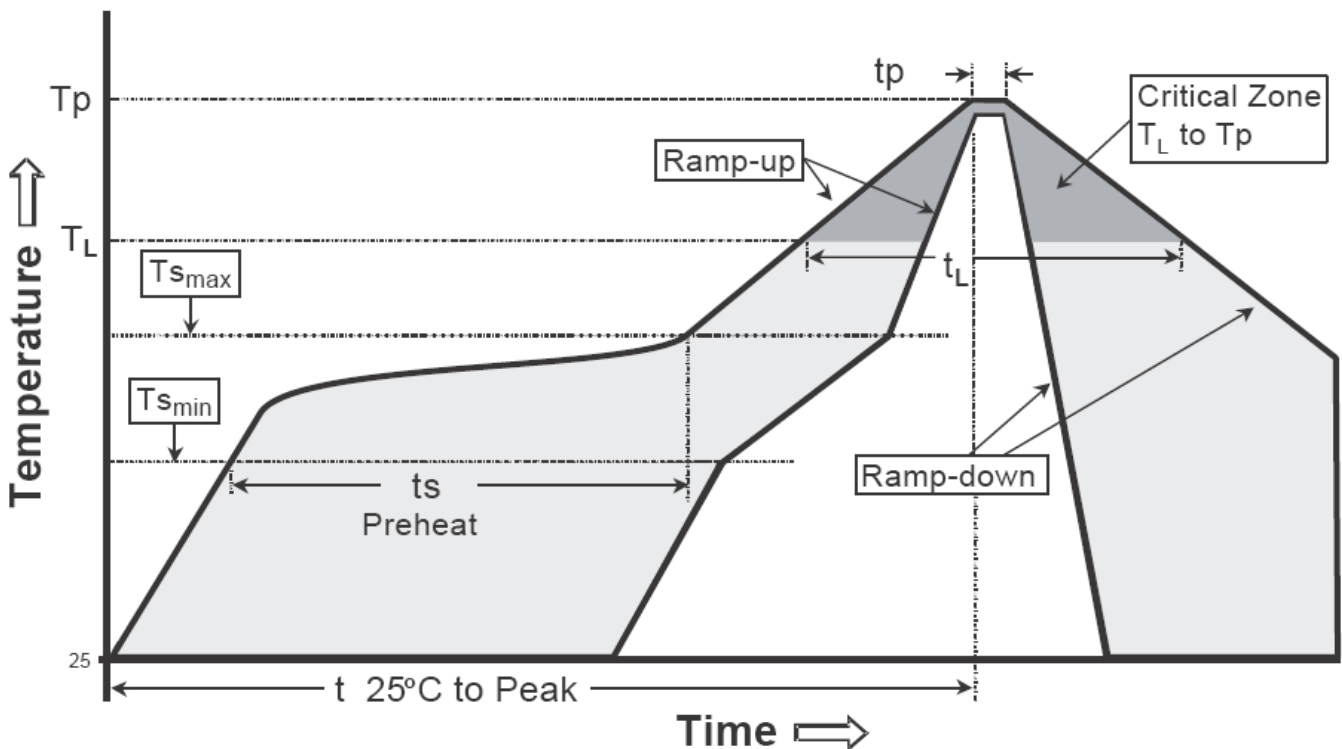


**Carrier Tape Dimension**



**Recommended wave soldering condition**

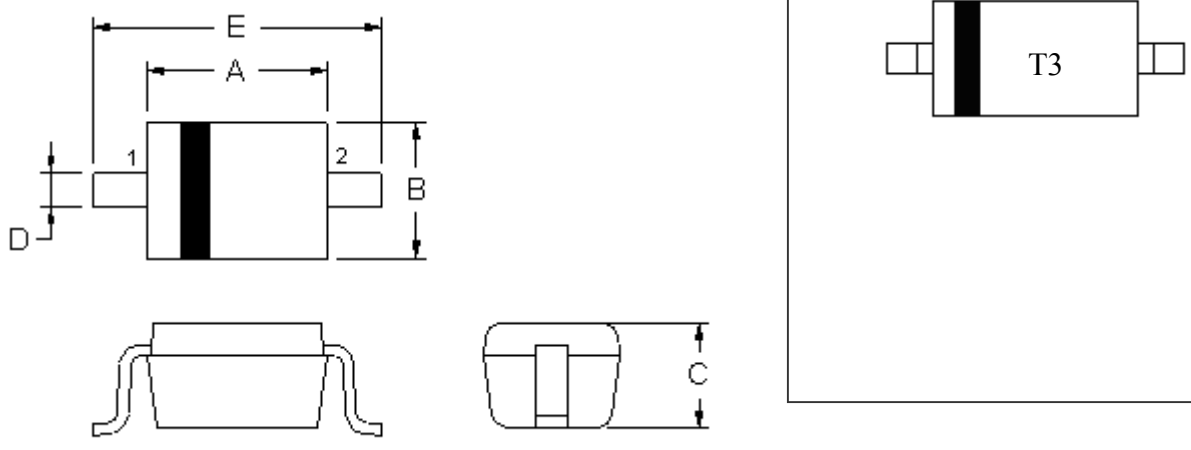
Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**


Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T <sub>s min</sub> )	100°C	150°C
-Temperature Max(T <sub>s max</sub> )	150°C	200°C
-Time(t <sub>s min</sub> to t <sub>s max</sub> )	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T <sub>L</sub> )	183°C	217°C
- Time (t <sub>L</sub> )	60-150 seconds	60-150 seconds
Peak Temperature(T <sub>P</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t <sub>p</sub> )	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**



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.

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