

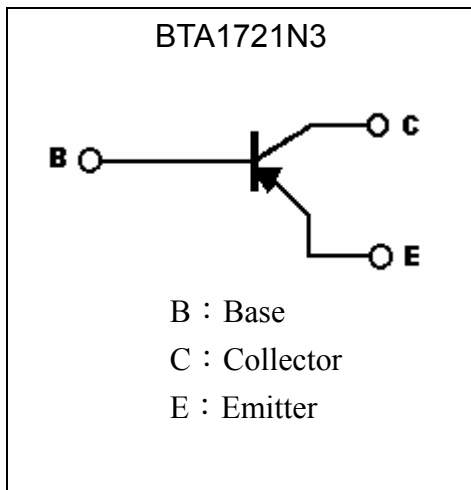
General Purpose PNP Epitaxial Planar Transistor

BTA1721N3

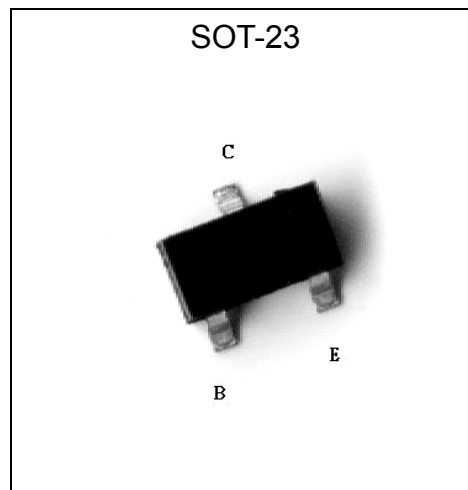
Description

- High breakdown voltage.
- Low collector output capacitance.
- Ideal for chroma circuit.
- Pb-free lead plating and halogen-free package

Symbol

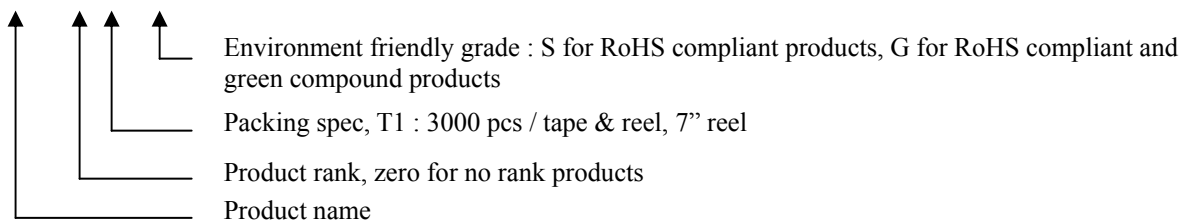


Outline



Ordering Information

Device	Package	Shipping
BTA1721N3-X-T1-G	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel





Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	-300	V
Collector-Emitter Voltage	V _{CEO}	-300	V
Emitter-Base Voltage	V _{EB0}	-5	V
Collector Current	I _C	-500	mA
Power Dissipation	P _d	225	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
R _{th,j-c}	thermal resistance from junction to case		223	°C/W
R _{th, j-a}	thermal resistance from junction to ambient	(Note)	556	°C/W

Note : Free air condition

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	-300	-	-	V	I _C =-100μA
BV _{CEO}	-300	-	-	V	I _C =-1mA
BV _{EB0}	-5	-	-	V	I _E =-100μA
I _{CB0}	-	-	-0.1	μA	V _{CB} =-200V
I _{EB0}	-	-	-0.1	μA	V _{EB} =-4V
*V _{CE(sat)}	-	-	-0.5	V	I _C =-20mA, I _B =-2mA
*V _{BE(sat)}	-	-	-0.9	V	I _C =-20mA, I _B =-2mA
*h _{FE}	90	-	-	-	V _{CE} =-10V, I _C =-1mA
*h _{FE}	100	-	270	-	V _{CE} =-10V, I _C =-10mA
*h _{FE}	50	-	-	-	V _{CE} =-10V, I _C =-30mA
f _T	50	-	-	MHz	V _{CE} =-20V, I _C =-10mA, f=100MHz
C _{ob}	-	-	6	pF	V _{CB} =-20V, f=1MHz

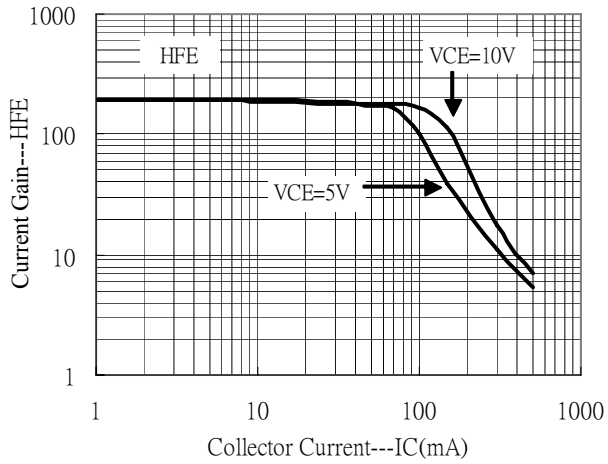
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Classification Of h_{FE}

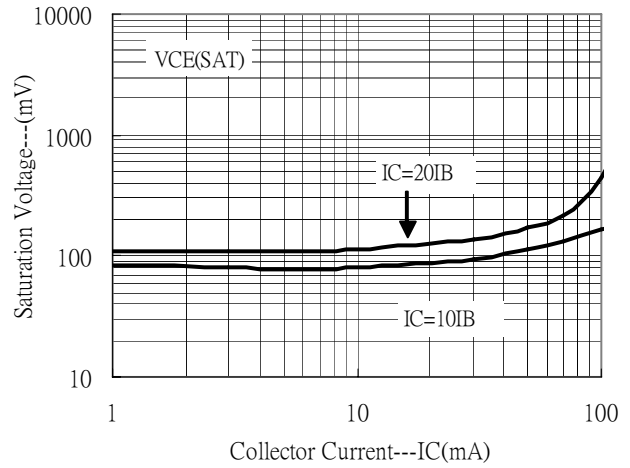
Rank	P	Q
Range	100~180	120~270

Typical Characteristics

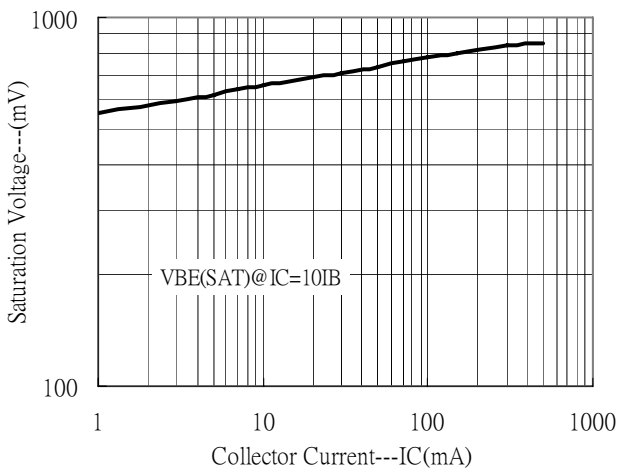
Current Gain vs Collector Current



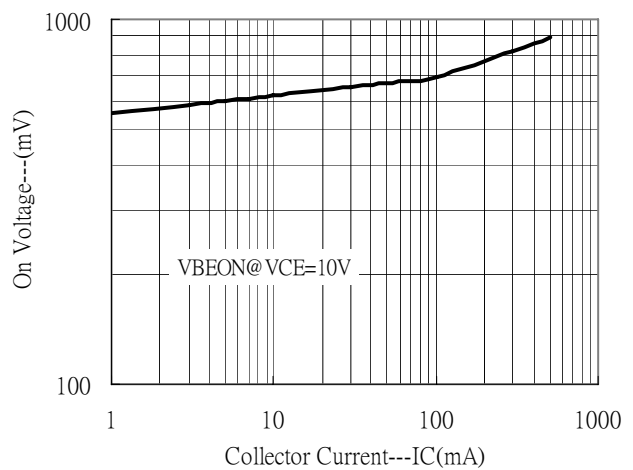
Saturation Voltage vs Collector Current



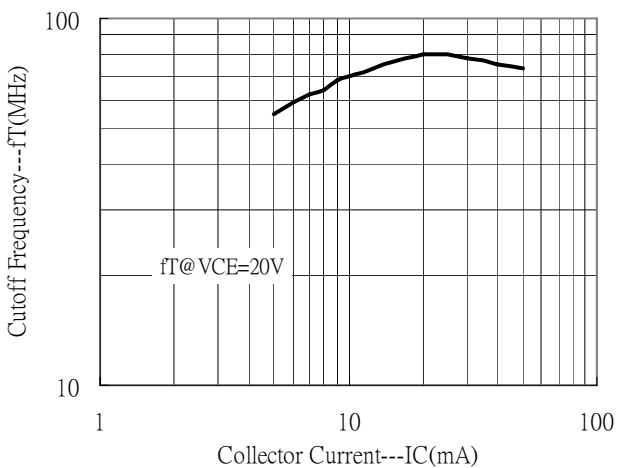
Saturation Voltage vs Collector Current



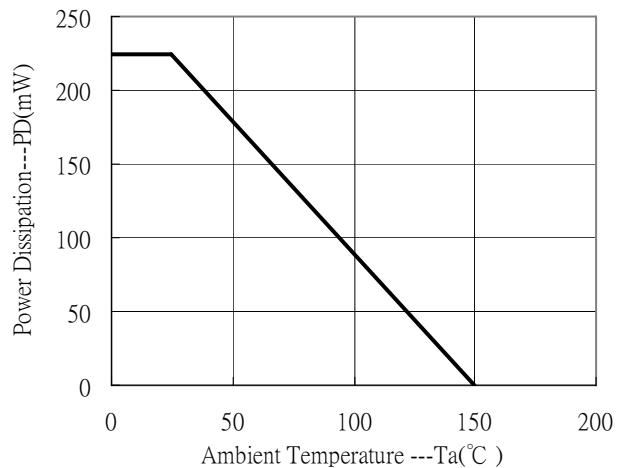
On Voltage vs Collector Current



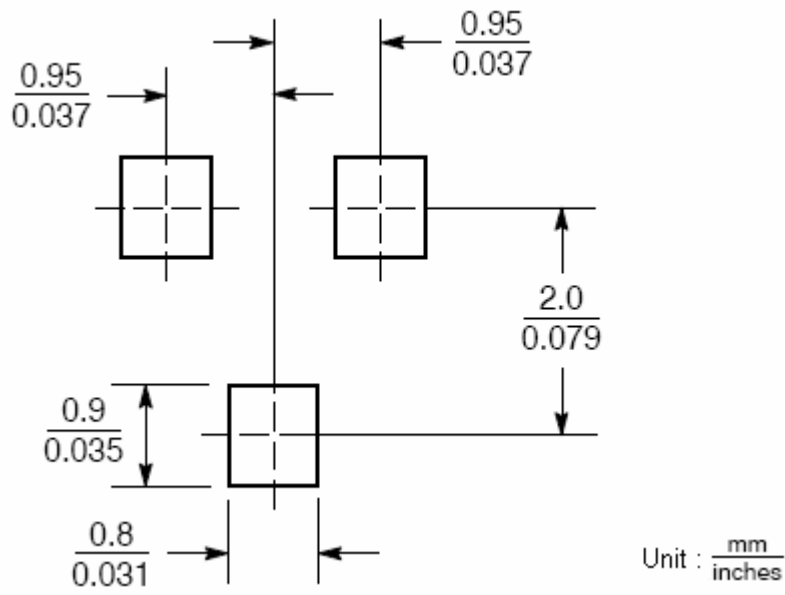
Cutoff Frequency vs Collector Current



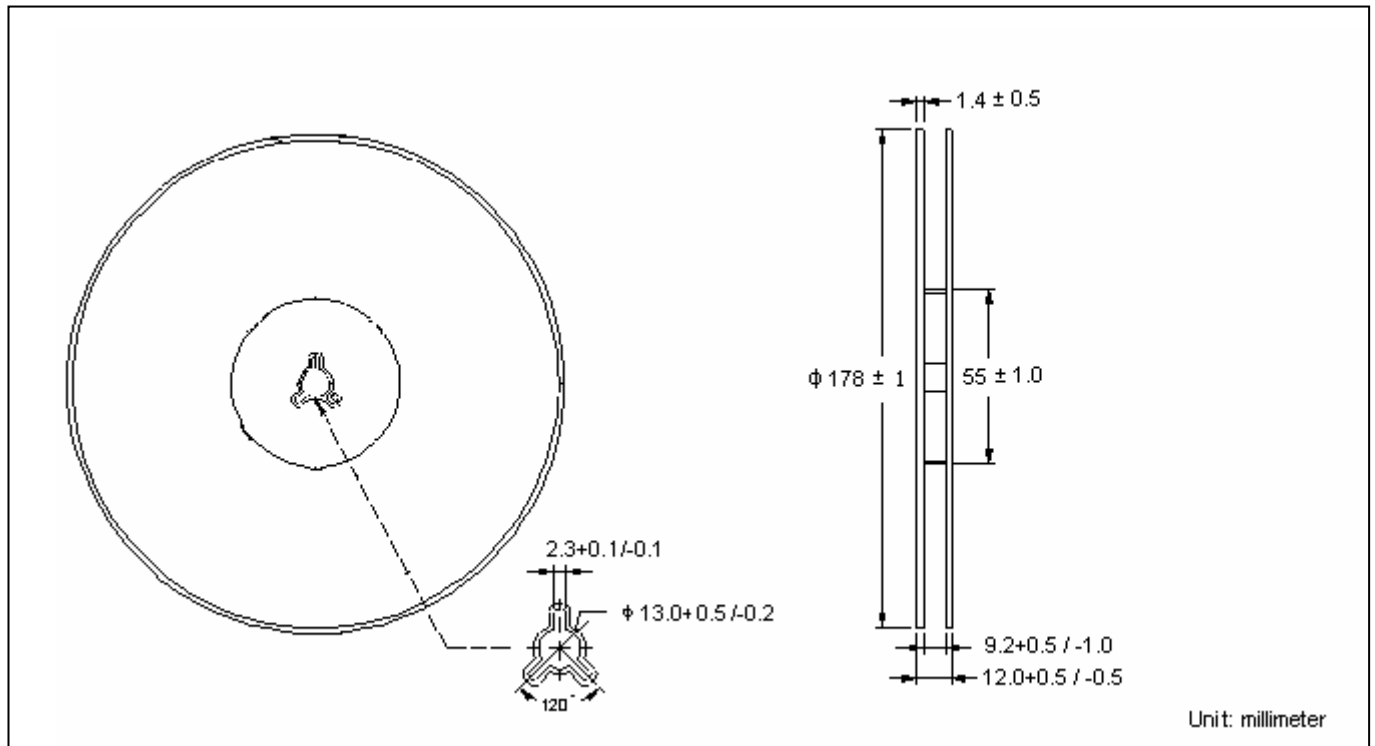
Power Derating Curve



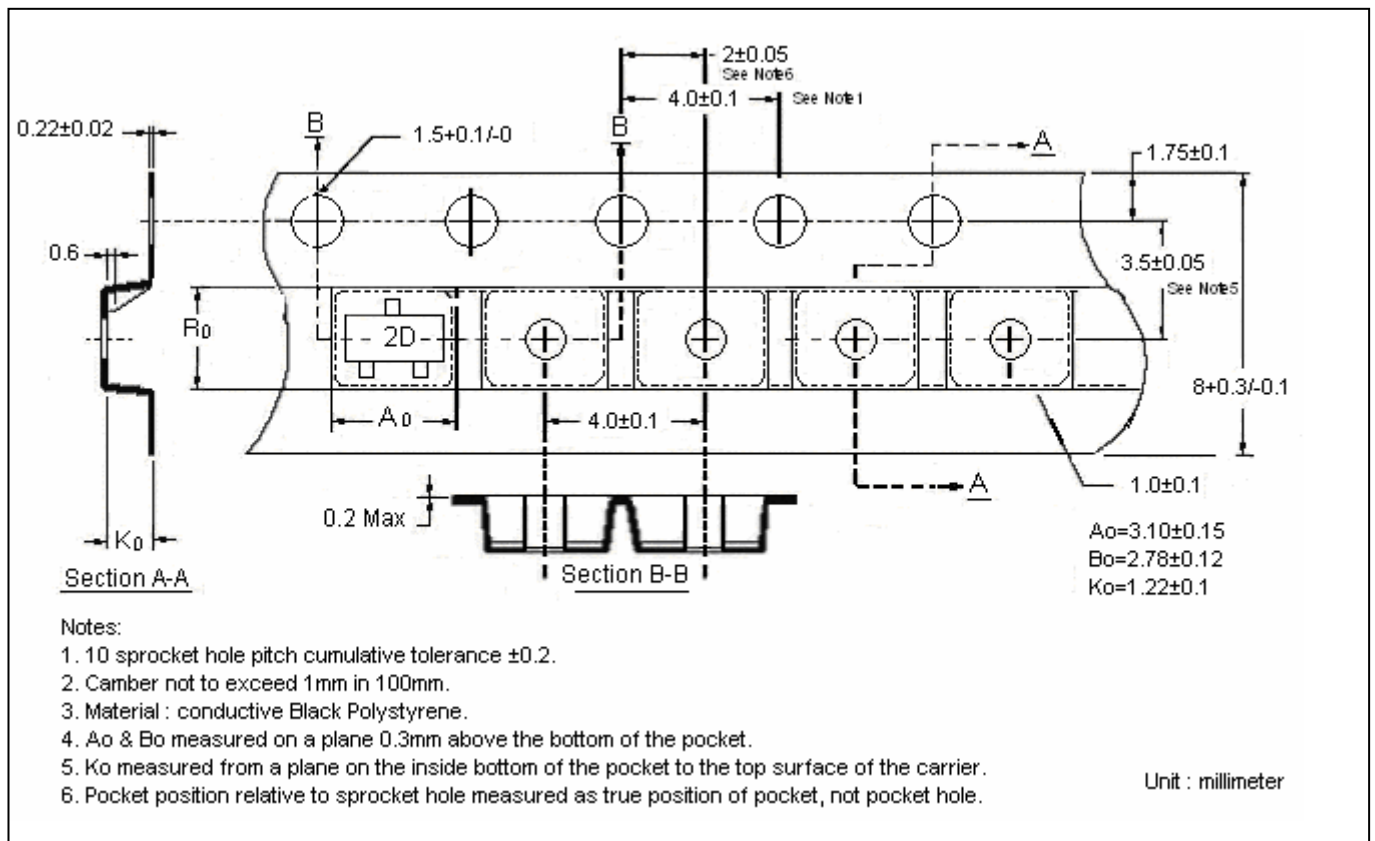
Recommended Soldering Footprint



Reel Dimension



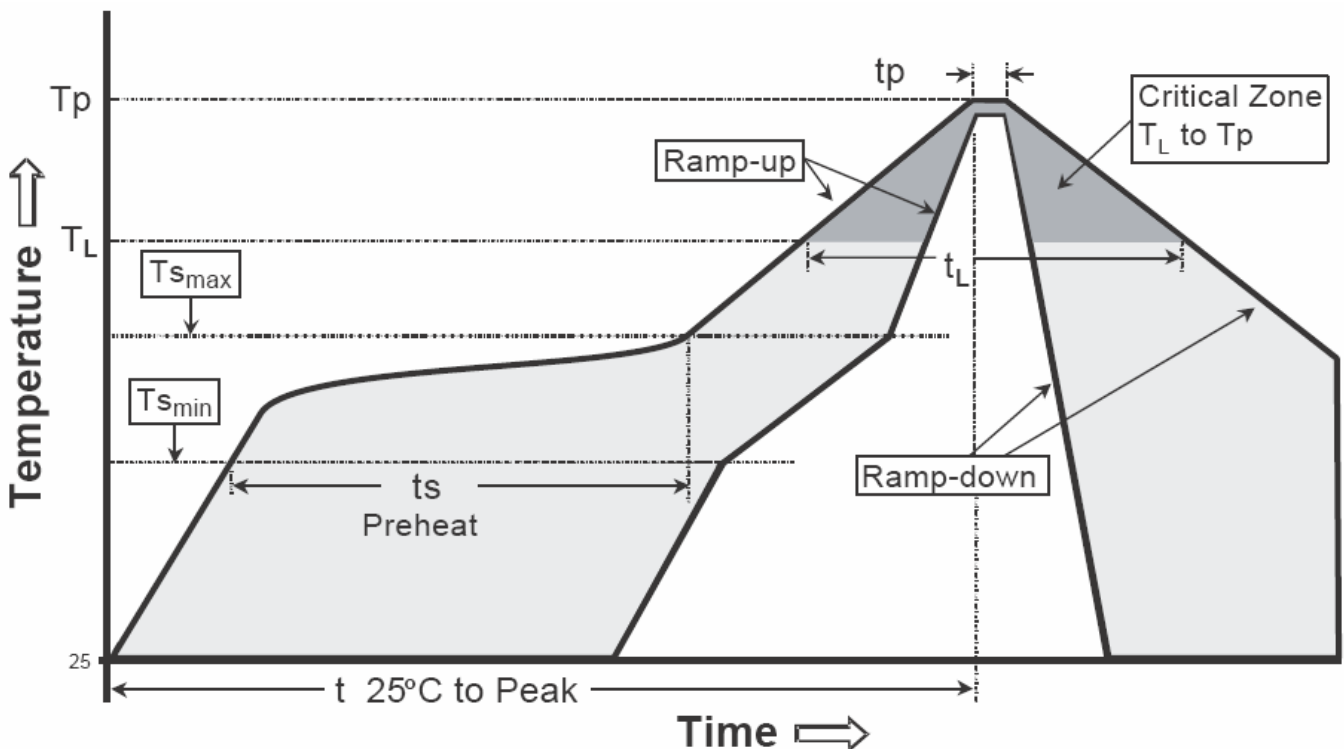
Carrier Tape Dimension



Recommended wave soldering condition

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

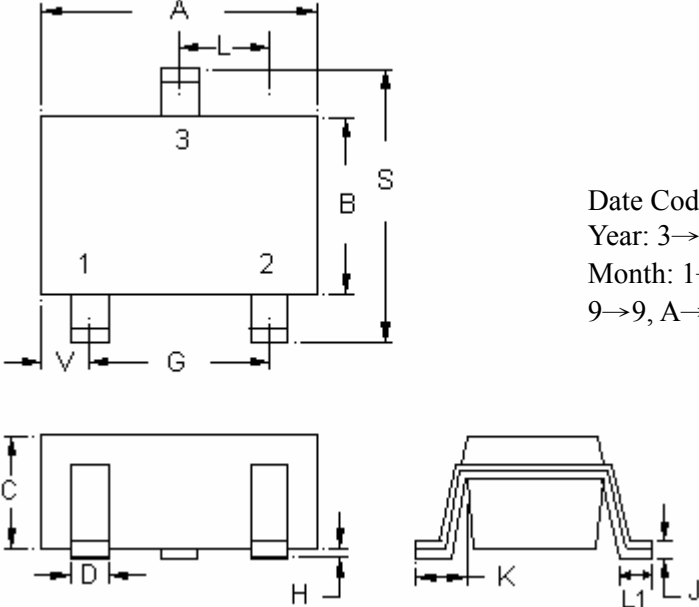
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (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.

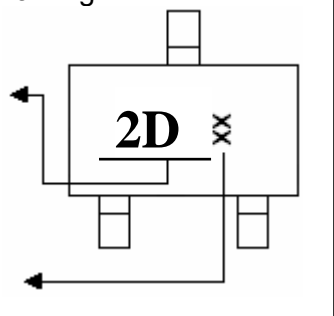
Note : All temperatures refer to topside of the package, measured on the package body surface.

SOT-23 Dimension



The diagram shows four views of the SOT-23 package: a top view with dimensions A, L, B, S, 1, 2, 3, V, and G; a side view with dimensions C, D, and H; a perspective view with dimensions K, L1, and L2; and a bottom view with dimension J.

Marking:



Product Code

Date Code: Year+Month
 Year: 3→2003, 4→2004
 Month: 1→1, 2→2, . . .
 9→9, A→10, B→11, C→12

3-Lead SOT-23 Plastic Surface Mounted Package
 CYStek Package Code: N3

Style : Pin 1.Base 2.Emitter 3.Collector

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0032	0.0079	0.08	0.20
B	0.0472	0.0669	1.20	1.70	K	0.0118	0.0266	0.30	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	0.1161	2.10	2.95
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0000	0.0040	0.00	0.10	L1	0.0118	0.0197	0.30	0.50

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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