

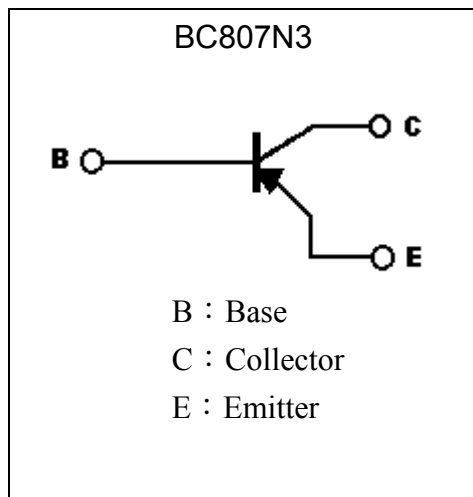
General Purpose PNP Epitaxial Planar Transistor

BC807N3

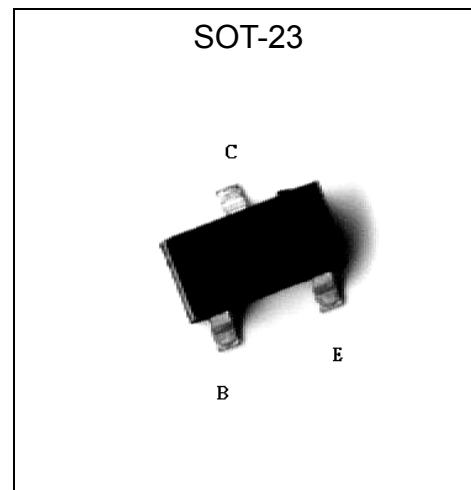
Description

- The BC807N3 is designed for general purpose switching and amplification applications. It is housed in the SOT-23/SC-59 package which is designed for low power surface mount applications.
- Low $V_{CE(sat)}$
- High switching speed.
- Complementary to BC817N3
- Pb-free lead-free and halogen-free package

Symbol

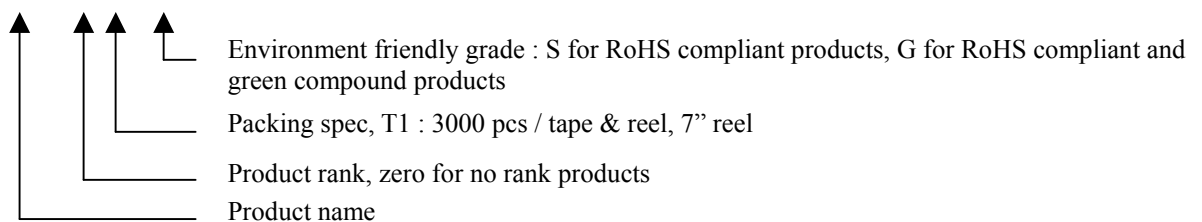


Outline



Ordering Information

Device	Package	Shipping
BC807N3-XX-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}	-50	V
Collector-Emitter Voltage	V _{CEO}	-45	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current	I _C	-500	mA
Power Dissipation @T _A =25°C	P _d	225 (Note 1)	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	556 (Note 1)	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

Note 1:When mounted on a FR-5 board with area measuring 1.0x0.75x0.062 in.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	-50	-	-	V	I _C =-10μA
*BV _{CEO}	-45	-	-	V	I _C =-10mA
BV _{EBO}	-5	-	-	V	I _E =-10μA
IC _{B0}	-	-	-100	nA	V _{CB} =-20V
IE _{B0}	-	-	-100	nA	V _{EB} =-5V
*V _{CE(sat)}	-	-0.5	-0.7	V	I _C =-500mA, I _B =-50mA
*V _{BE(on)}	-	-	-1.2	V	V _{CE} =-1V, I _C =-500mA
*h _{FE 1}	100	-	600	-	V _{CE} =-1V, I _C =-100mA
*h _{FE}	40	-	-	-	V _{CE} =-1V, I _C =-500mA
f _T	80	-	-	MHz	V _{CE} =-5V, I _C =-10mA, f=100MHz
C _{ob}	-	9	-	pF	V _{CB} =-10V, I _E =0A, f=1MHz

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

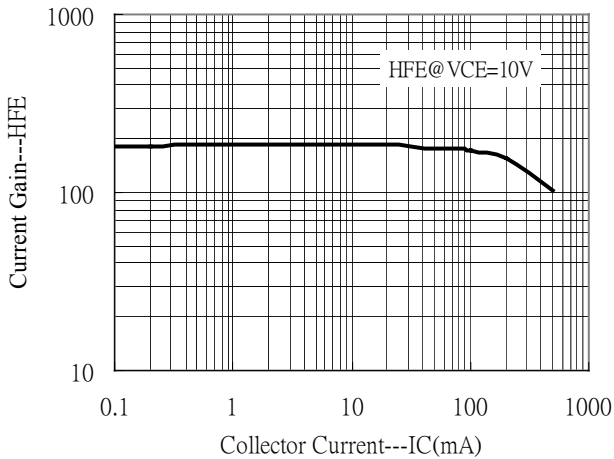
Classification of hFE 1:

Rank	16	25	40
Range	100--250	160--400	250--600

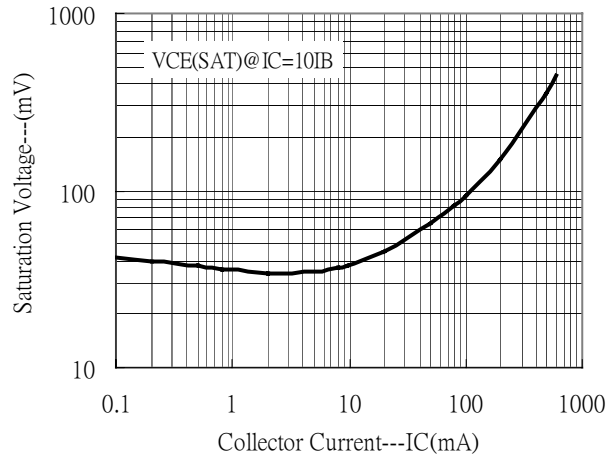


Typical Characteristics

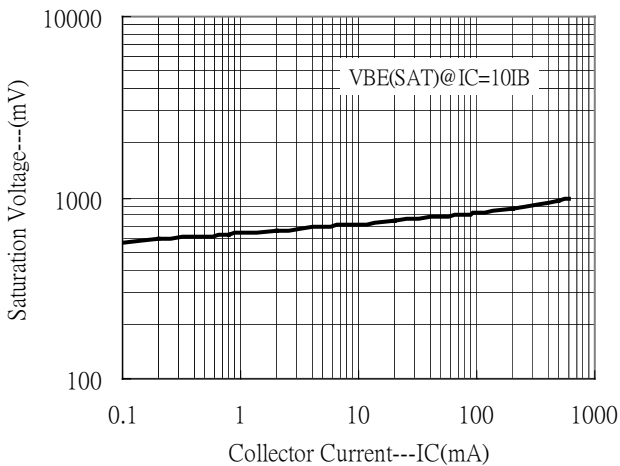
Current Gain vs Collector Current



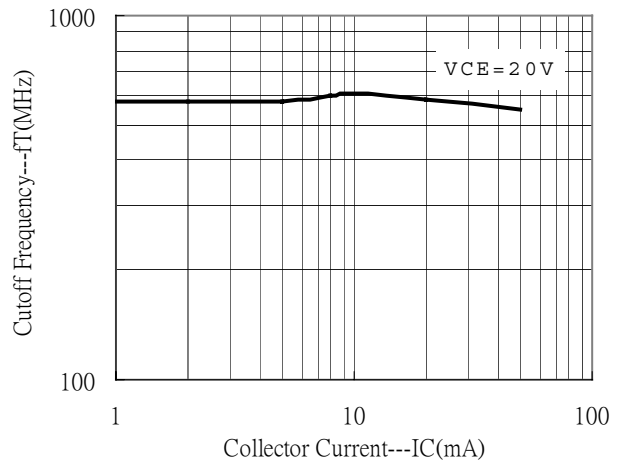
Saturation Voltage vs Collector Current



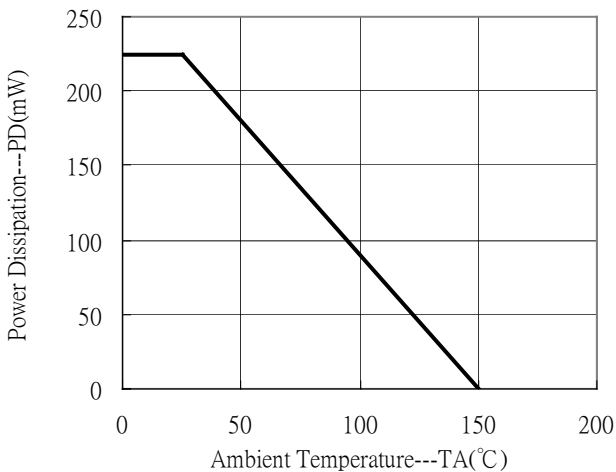
Saturation Voltage vs Collector Current



Cutoff Frequency vs Collector Current

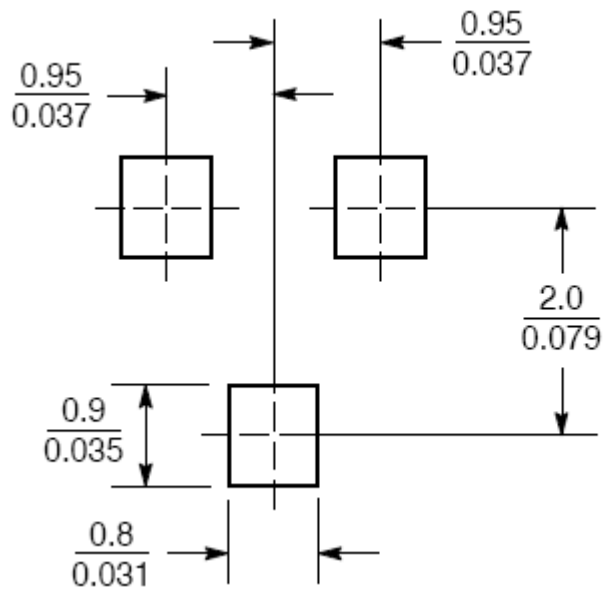


Power Derating Curve



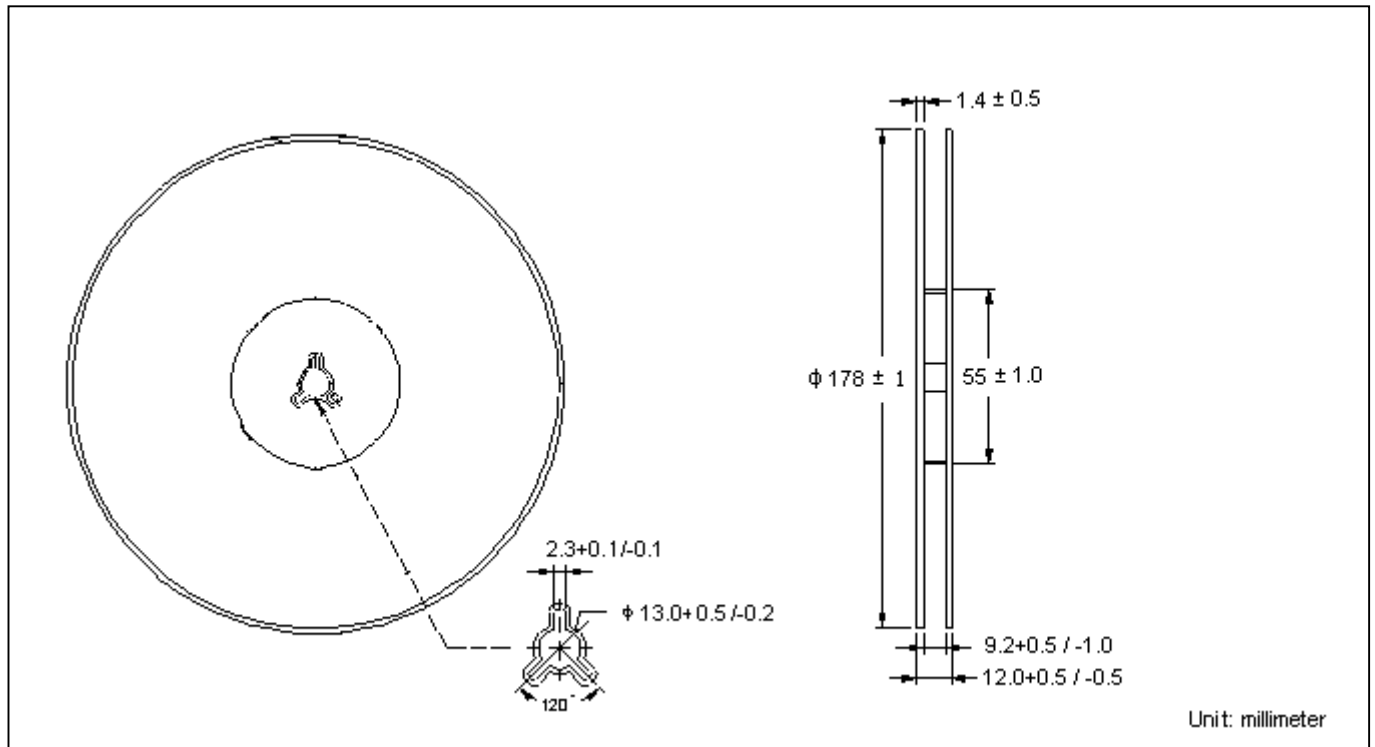


Recommended Soldering Footprint

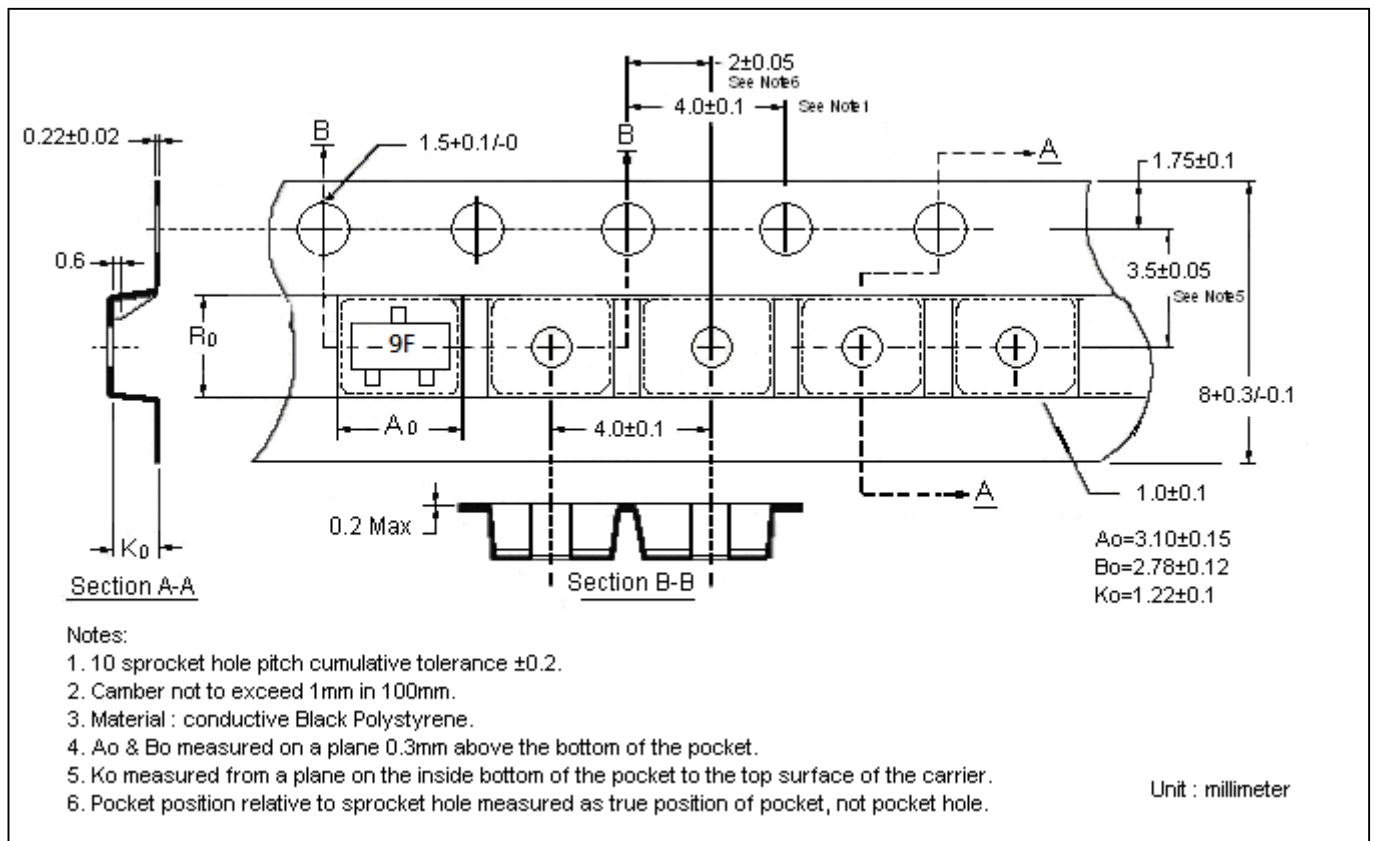


Unit : $\frac{\text{mm}}{\text{inches}}$

Reel Dimension



Carrier Tape Dimension

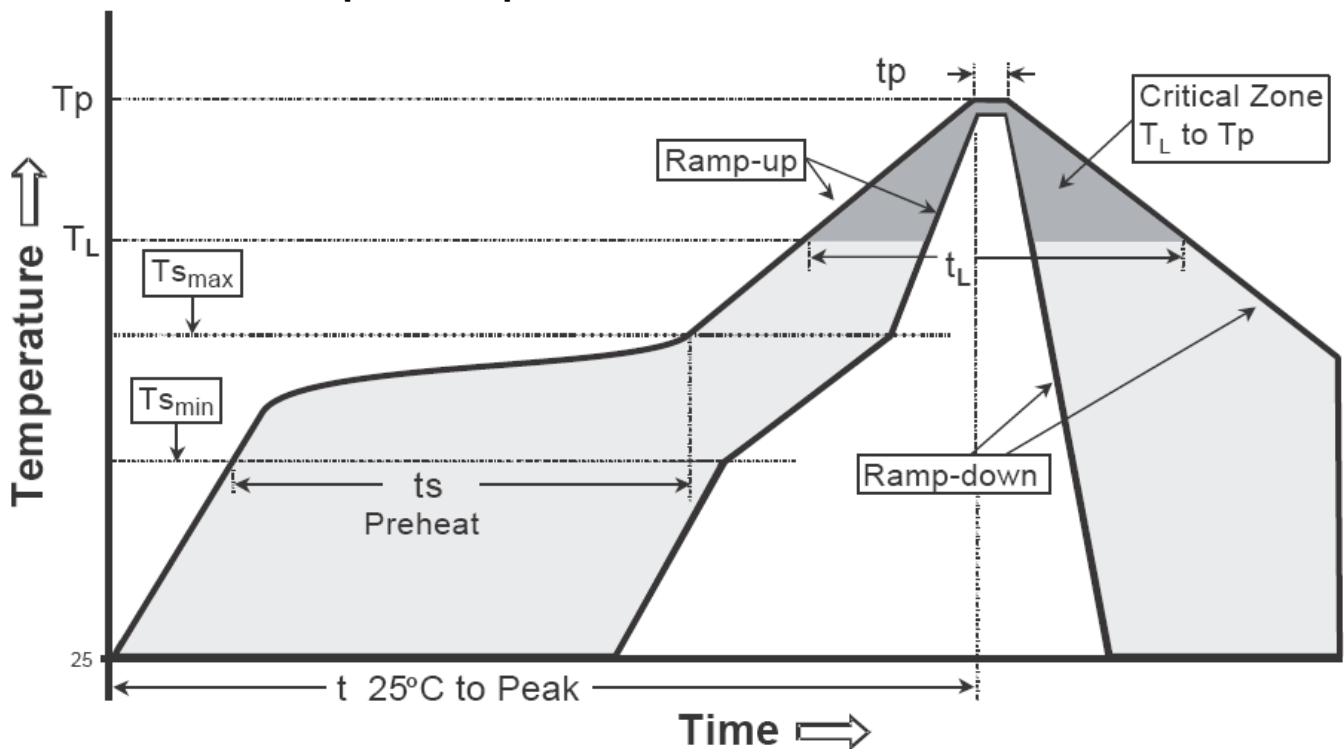




Recommended wave soldering condition

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

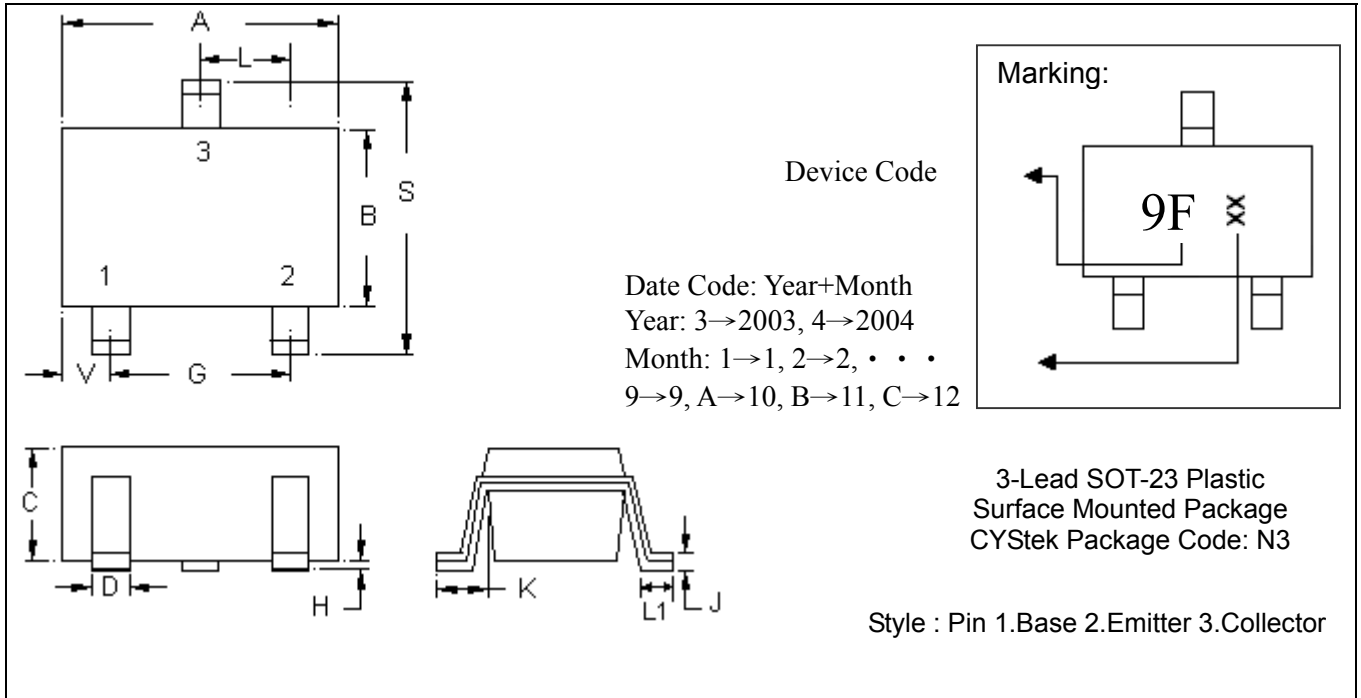
Recommended temperature profile for IR reflow



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)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (TL)	183°C	217°C
- Time (tL)	60-150 seconds	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.

SOT-23 Dimension



*:Typical

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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