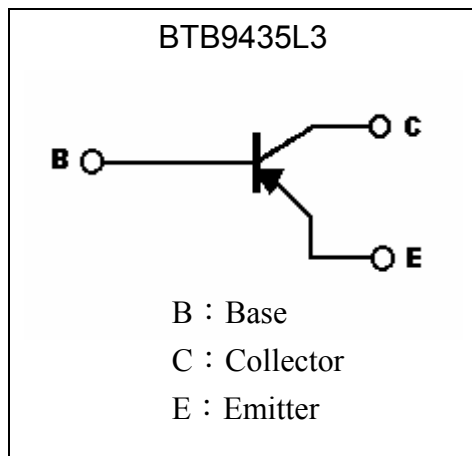
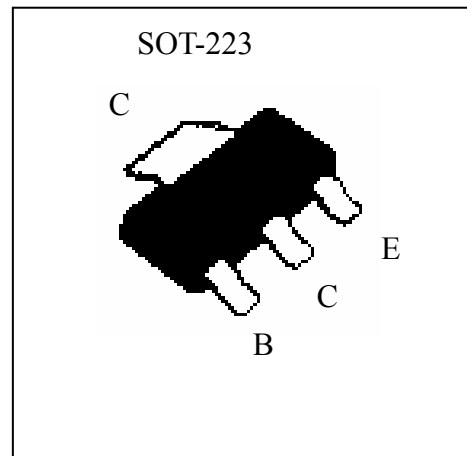


**Low Vcesat PNP Epitaxial Planar Transistor**

# BTB9435L3

**Features**

- Low VCE(sat)
- Excellent current gain characteristics
- RoHS compliant package

**Symbol**

**Outline**

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-40	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-30	V
Emitter-Base Voltage	V <sub>EB0</sub>	-6	V
Collector Current	I <sub>C</sub> (DC)	-3	A
	I <sub>C</sub> (pulse)	-5 (Note 1)	A
Power Dissipation	P <sub>d</sub> (Ta=25°C)	1.56 (Note 2)	W
	P <sub>d</sub> (Tc=25°C)	3	
Thermal Resistance, junction to ambient	R <sub>θJA</sub>	80	°C/W
Thermal Resistance, junction to case	R <sub>θJC</sub>	42	
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C

Note : 1. Single Pulse Pw ≤ 300μs, Duty ≤ 2%.

2. When the collector of device is mounted on a FR-4 board with area of 1" sq(645 sq mm)

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CBO</sub>	-40	-	-	V	I <sub>C</sub> =-100μA, I <sub>E</sub> =0
BV <sub>CEO</sub>	-30	-	-	V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
BV <sub>EBO</sub>	-6	-	-	V	I <sub>E</sub> =-50μA, I <sub>C</sub> =0
I <sub>CBO</sub>	-	-	-100	nA	V <sub>CB</sub> =-40V, I <sub>E</sub> =0
I <sub>EBO</sub>	-	-	-100	nA	V <sub>EB</sub> =-5V, I <sub>C</sub> =0
*V <sub>CE(sat)</sub>	-	-	-0.4	V	I <sub>C</sub> =-800mA, I <sub>B</sub> =-20mA
*V <sub>CE(sat)</sub>	-	-	-0.5	V	I <sub>C</sub> =-1.2A, I <sub>B</sub> =-20mA
*V <sub>CE(sat)</sub>	-	-	-0.8	V	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA
*V <sub>BE(sat)</sub>	-	-	-1.5	V	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA
*V <sub>BE(on)</sub>	-	-	-1.2	V	I <sub>C</sub> =-1.2A, V <sub>CE</sub> =-4V
*h <sub>FE 1</sub>	180	-	390	-	V <sub>CE</sub> =-1V, I <sub>C</sub> =-800mA
*h <sub>FE 2</sub>	160	-	-	-	V <sub>CE</sub> =-1V, I <sub>C</sub> =-1.2A
*h <sub>FE 3</sub>	50	-	-	-	V <sub>CE</sub> =-1V, I <sub>C</sub> =-3A
f <sub>T</sub>	-	130	-	MHz	V <sub>CE</sub> =-5V, I <sub>E</sub> =-0.5A, f=100MHz
C <sub>ob</sub>	-	17	-	pF	V <sub>CB</sub> =-10V, f=1MHz

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

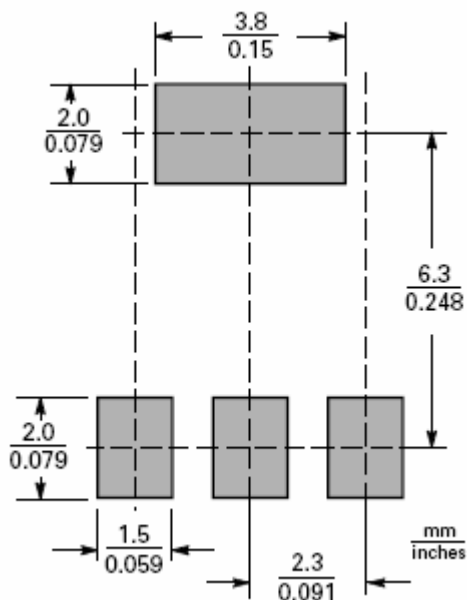
**Ordering Information**

Device	Package	Shipping	Marking
BTB9435L3	SOT-223 (RoHS compliant package)	2500 pcs / Tape & Reel	B9435

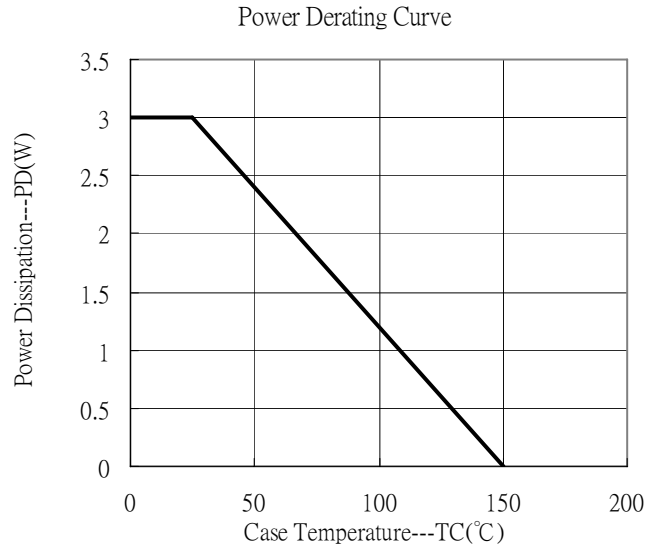
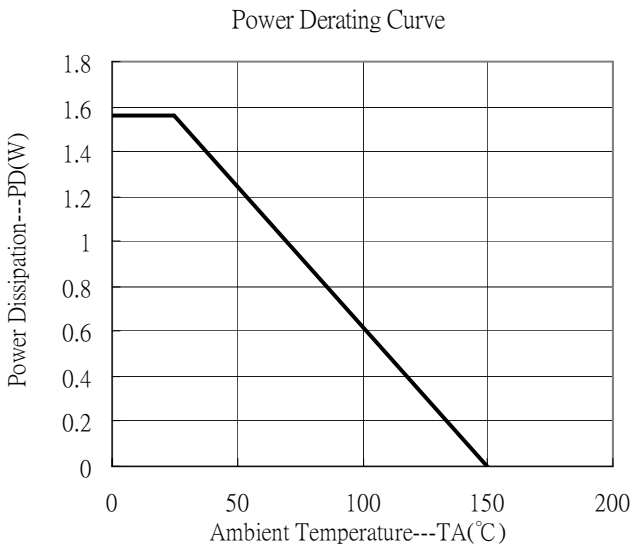
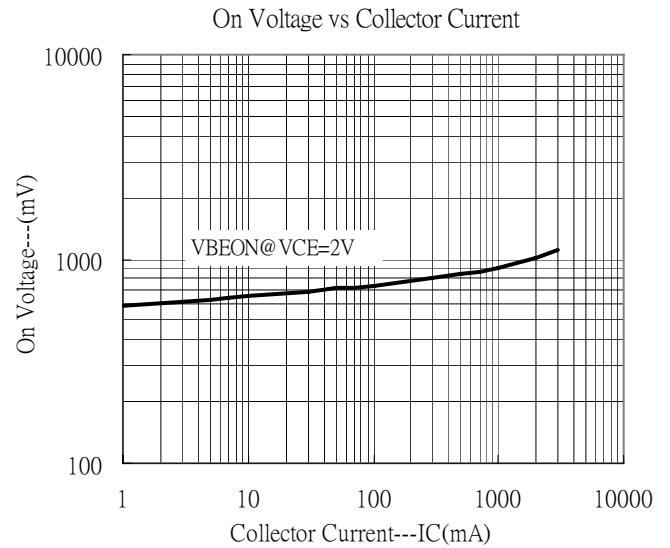
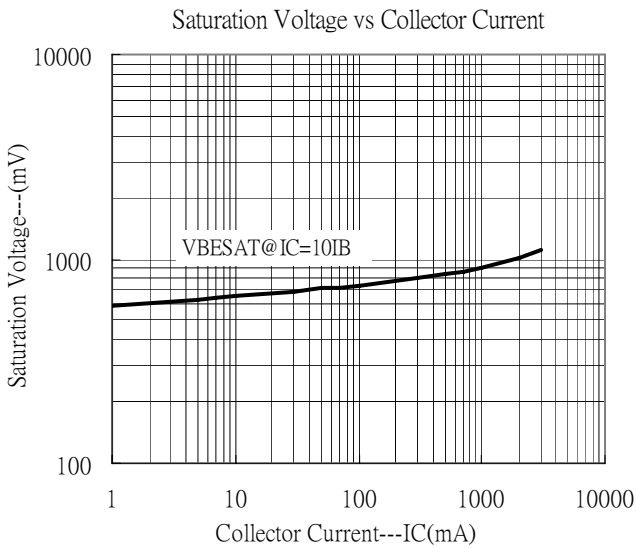
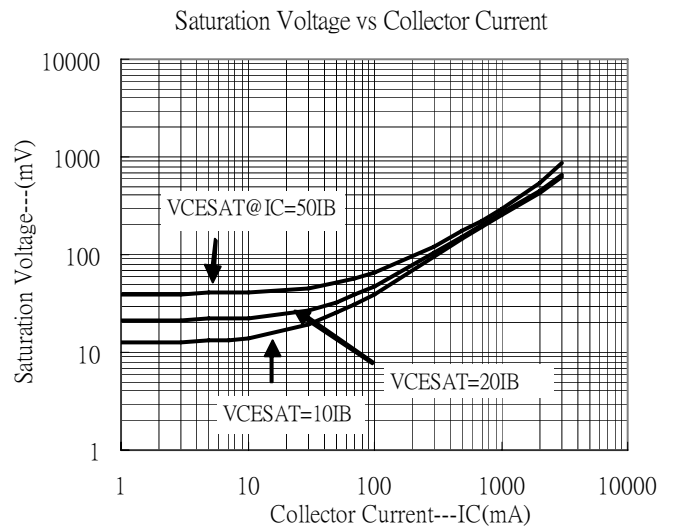
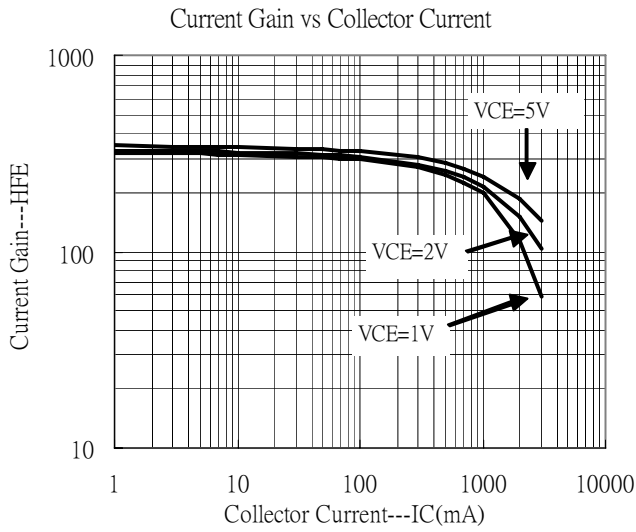
**Recommended Storage Condition:**

Temperature : 10~ 35 °C

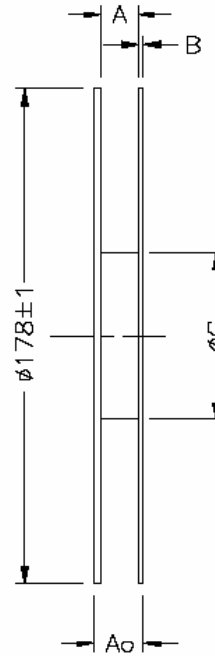
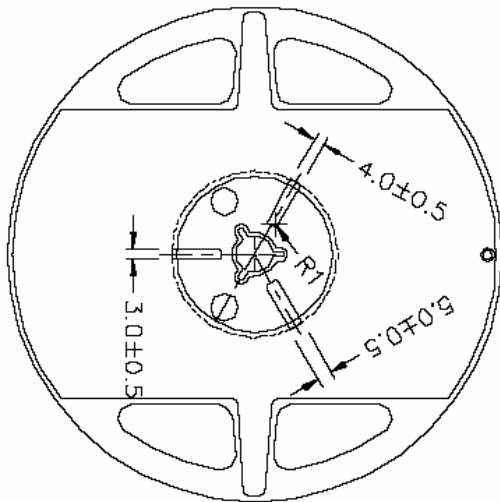
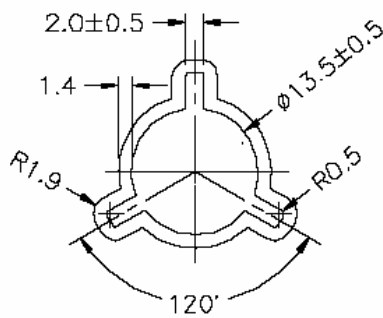
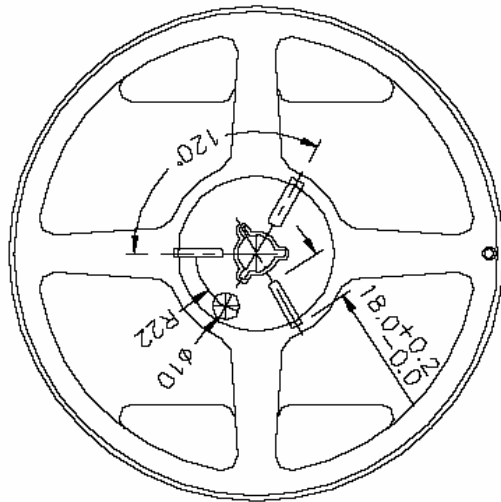
Humidity : 30~ 60% RH

**Recommended soldering footprint**


**Characteristic Curves**



**Reel Dimension**



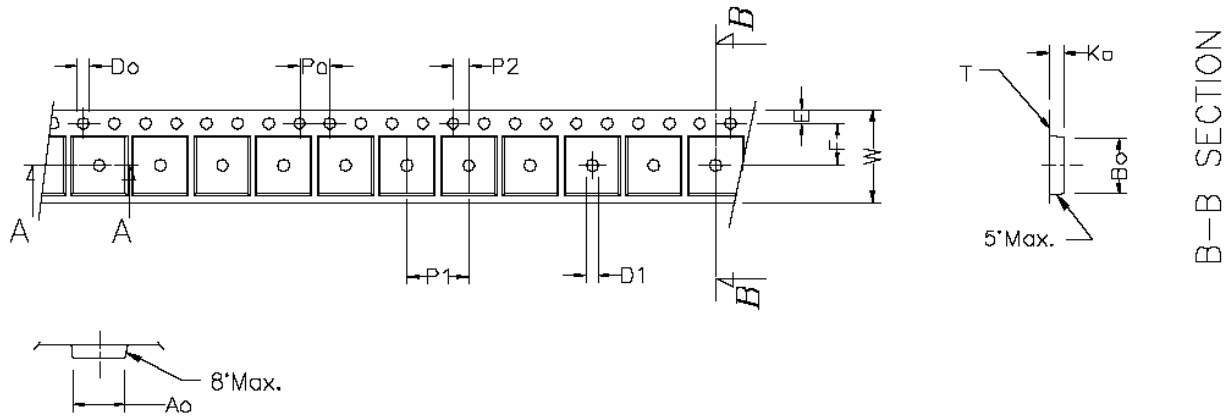
Width of carrier tape	8	12	16
A±0.05	9.0	13.0	17.0
Ao±0.05	12.0	16.0	20.0
B	1.5	1.5	1.5
øC ± <sub>0</sub> <sup>+1</sup>	60	60	60

**NOTE :**

1. Material : Anti-static polystyrene.
2. Surface resistivity 10<sup>8</sup> ohm/square

**UNIT : millimeter**

**Carrier Tape Dimension**



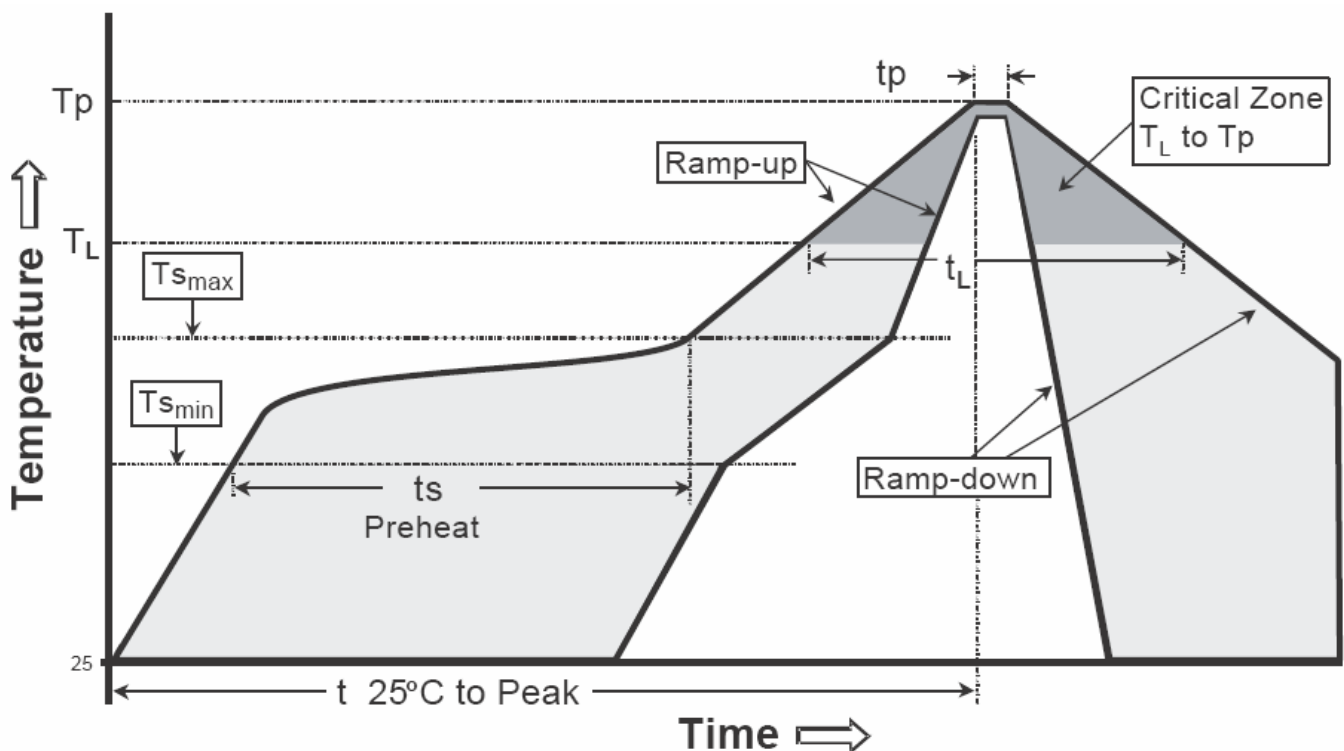
A-A SECTION

symbol	$A_o$	$B_o$	$K_o$	$P_o$	$P_1$	$P_2$	$T$
Spec	$6.83 \pm 0.1$	$7.42 \pm 0.1$	$1.88 \pm 0.1$	$4.0 \pm 0.1$	$8.0 \pm 0.10$	$2.0 \pm 0.05$	$0.292 \pm 0.02$
symbol	$E$	$F$	$D_o$	$D_1$	$W$	$10P_o$	
Spec	$1.75 \pm 0.1$	$5.5 \pm 0.05$	$1.60 \pm 0.1$	$1.5 \pm 0.25$	$12.0^{+0.3}_{-0.1}$	$40.0 \pm 0.2$	

**Recommended wave soldering condition**

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

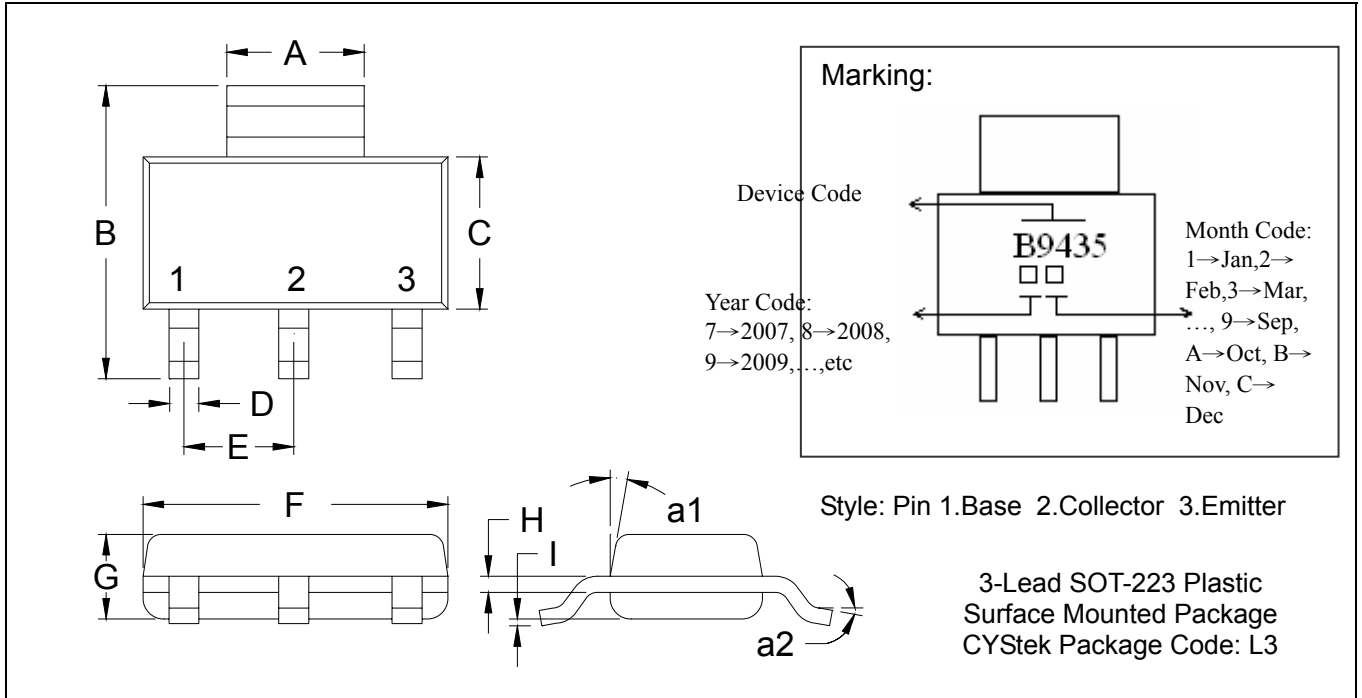
**Recommended temperature profile for IR reflow**



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(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-223 Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1142	0.1220	2.90	3.10	G	0.0551	0.0709	1.40	1.80
B	0.2638	0.2874	6.70	7.30	H	0.0098	0.0138	0.25	0.35
C	0.1299	0.1457	3.30	3.70	I	0.0008	0.0039	0.02	0.10
D	0.0236	0.0315	0.60	0.80	a1	*13°	-	*13°	-
E	*0.0906	-	*2.30	-	a2	0°	10°	0°	10°
F	0.2480	0.2638	6.30	6.70					

**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: A194; pure tin plated
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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