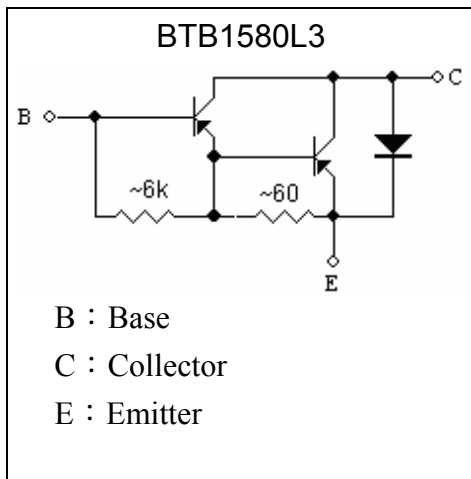
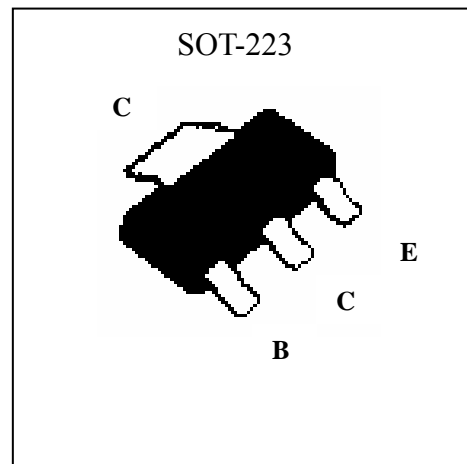


PNP Epitaxial Planar Transistor

BTB1580L3

Description

The BTB1580L3 is a PNP Darlington transistor, designed for use in general purpose amplifier and low speed switching application. Pb-free package process is adopted.

Equivalent Circuit

Outline

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	-120	V
Collector-Emitter Voltage	V _{CEO}	-120	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current (DC)	I _C	-4	A
Collector Current (Pulse)	I _{CP}	-6	A
Power Dissipation(Tc=25°C)	P _d	5	W
Thermal Resistance, Junction to Case	R _{θJC}	25	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

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

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CEO}	-120	-	-	V	I _C =-1mA, I _B =0
BV _{CBO}	-120	-	-	V	I _C =-100μA, I _E =0
I _{CBO}	-	-	-1	mA	V _{CB} =-100V, I _E =0
I _{CEO}	-	-	-2	mA	V _{CE} =-50V, I _B =0
I _{EBO}	-	-	-2	mA	V _{EB} =-5V, I _C =0
*V _{CE(sat)}	-	-	-2	V	I _C =-2A, I _B =-2mA
*V _{BE(on)}			-2.8	V	V _{CE} =-4V, I _C =-2A
*h _{FE1}	1000	-	-	-	V _{CE} =-4V, I _C =-1A
*h _{FE2}	500	-	-	-	V _{CE} =-4V, I _C =-2A
Cob	-		200	pF	V _{CB} =-10V, I _E =0A, f=1MHz

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

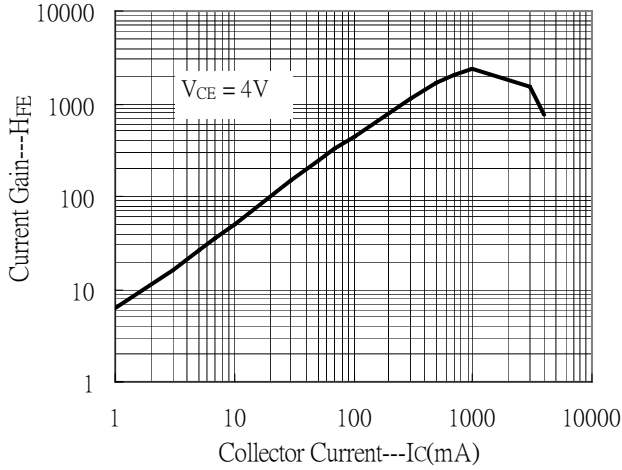
Ordering Information

Device	Package	Shipping	Marking
BTB1580L3	SOT-223 (Pb-free)	2500 pcs / Tape & Reel	B1580

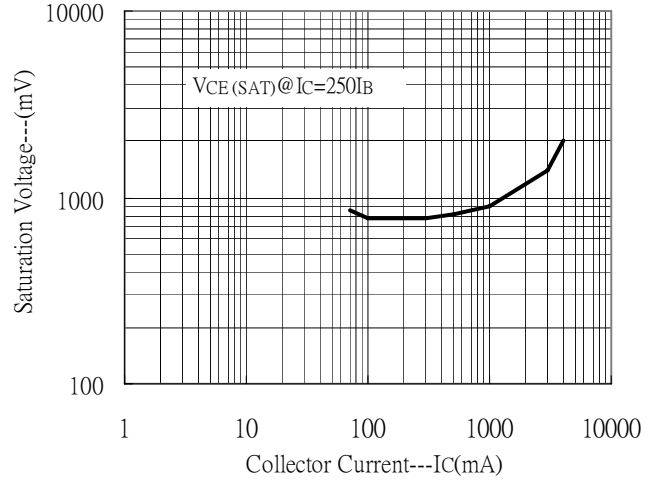


Typical Characteristics

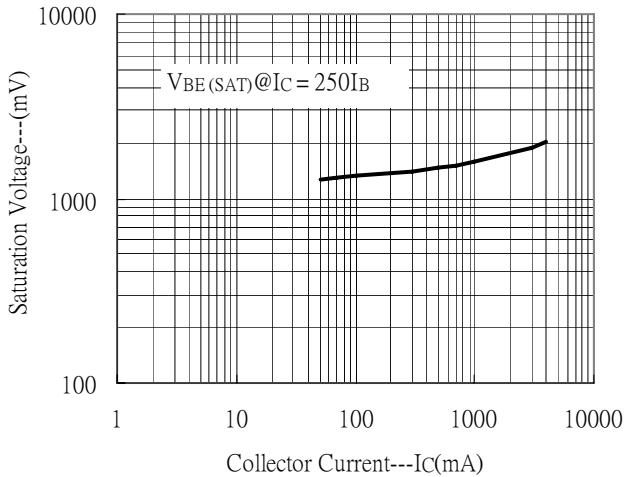
Current Gain vs Collector Current



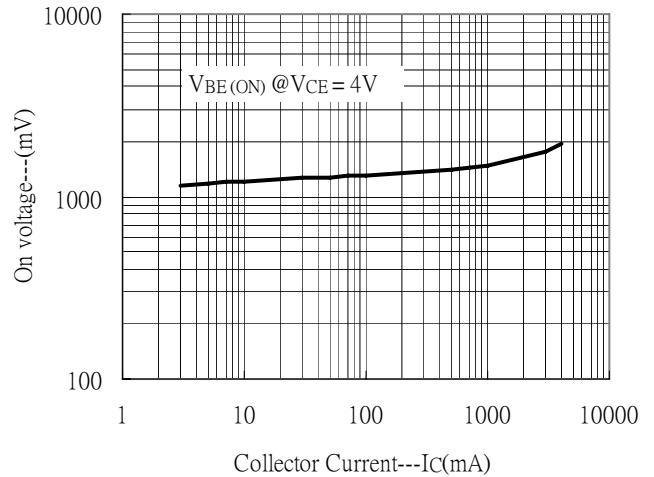
Saturation Voltage vs Collector Current



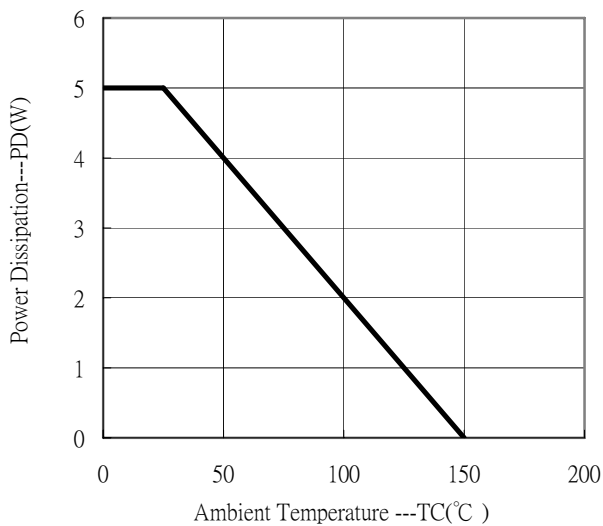
Saturation Voltage vs Collector Current



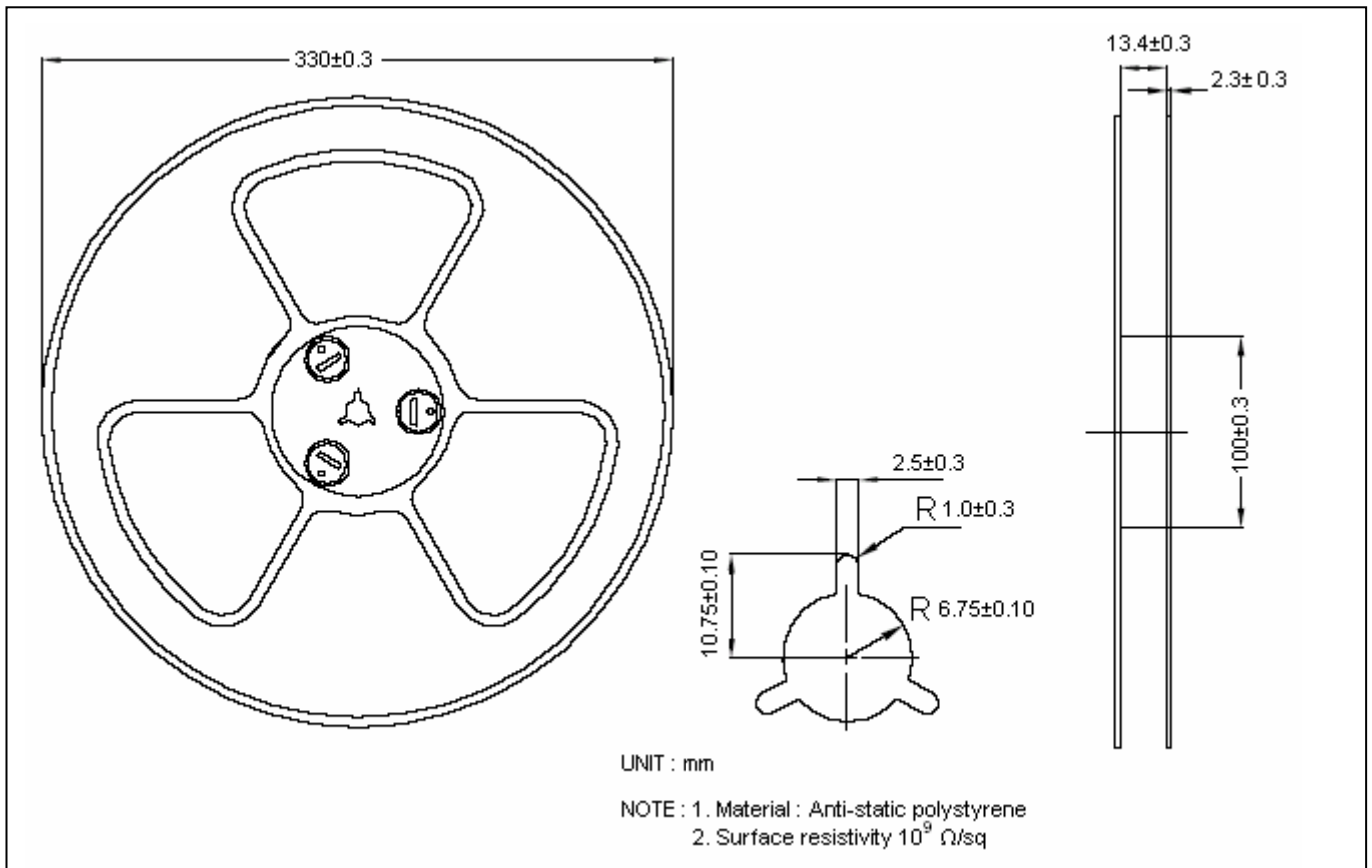
On voltage vs Collector Current



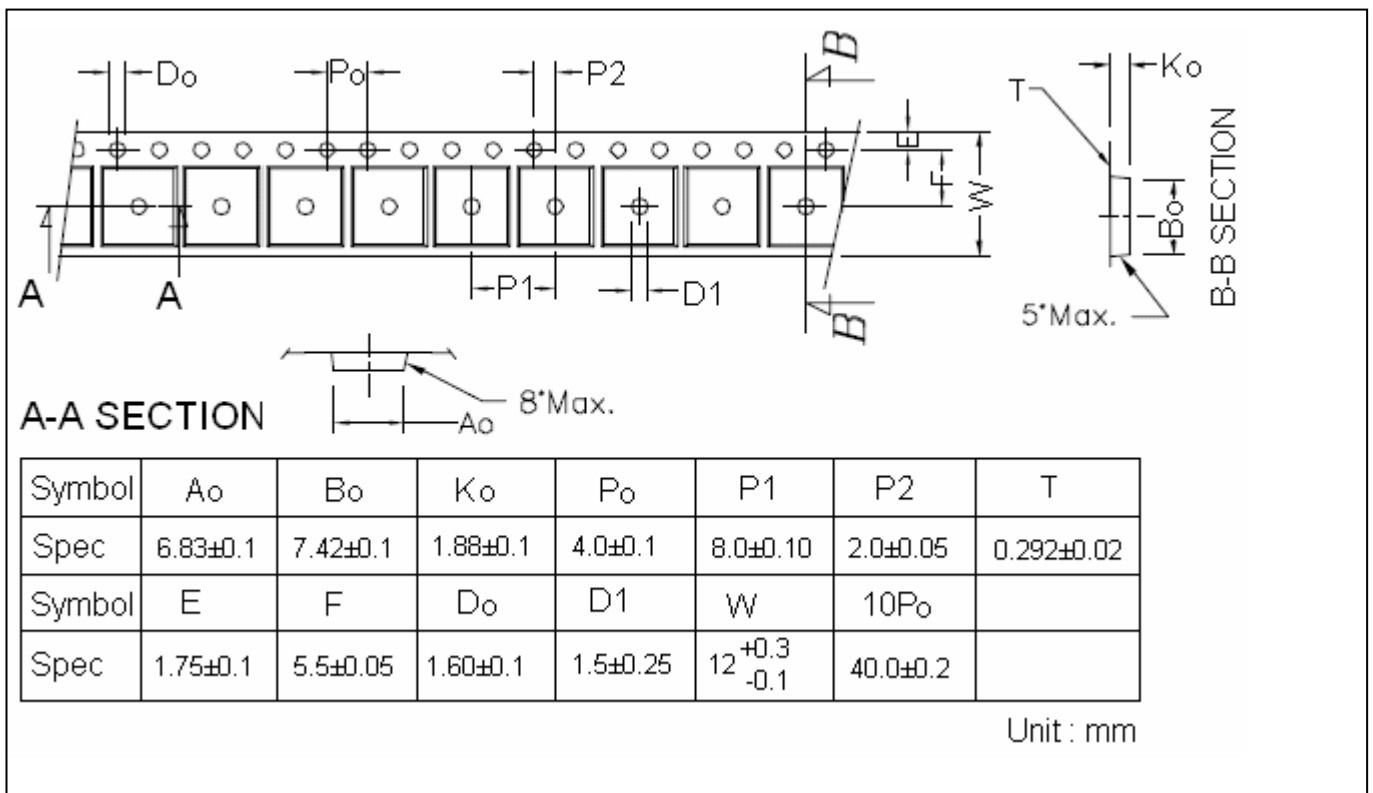
Power Derating Curve



Reel Dimension

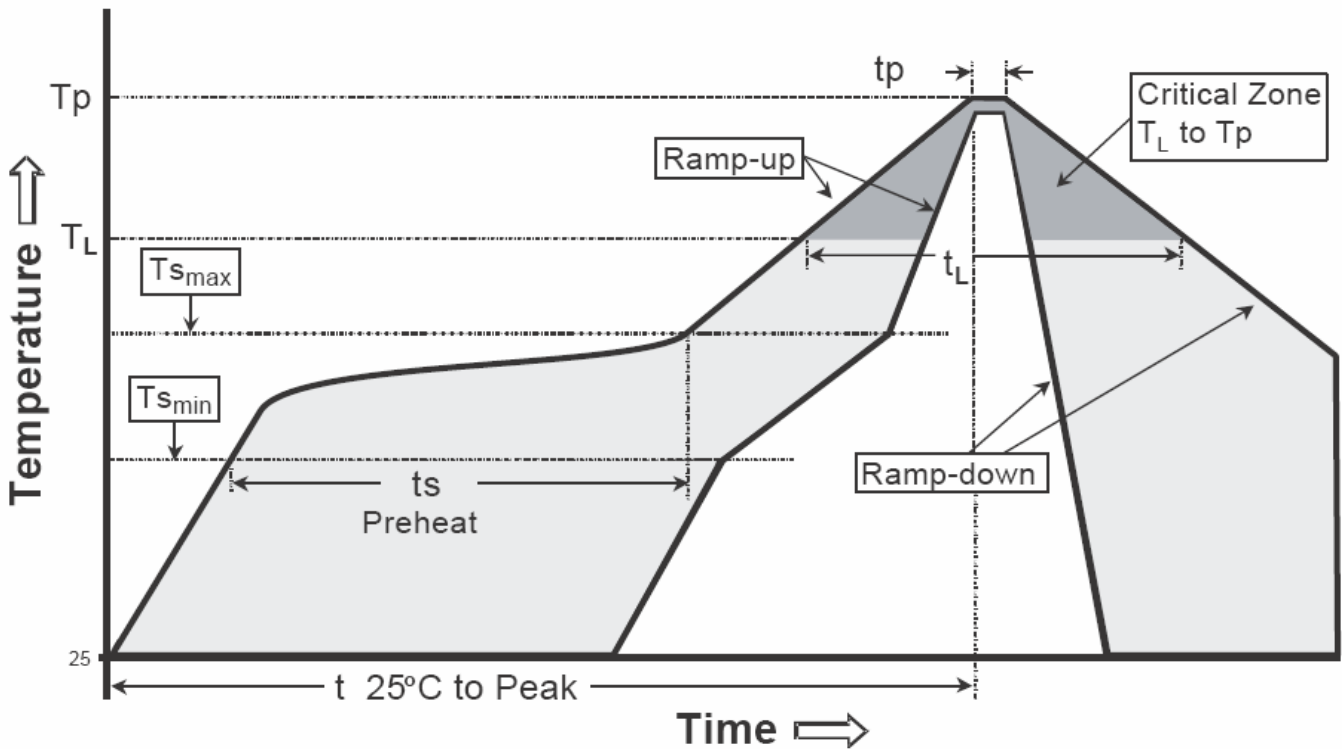


Carrier Tape Dimension



Recommended wave soldering condition

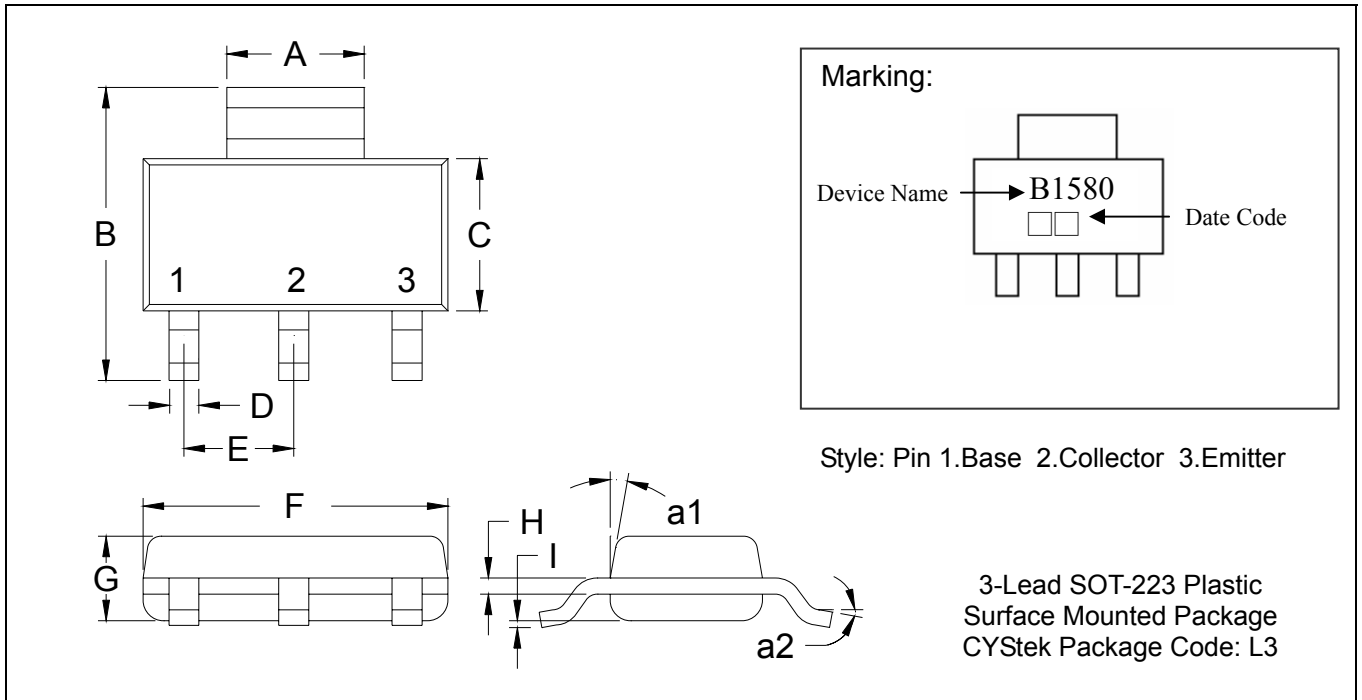
Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow


Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (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-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: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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