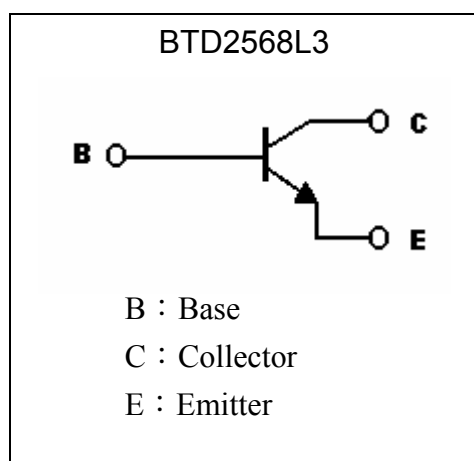
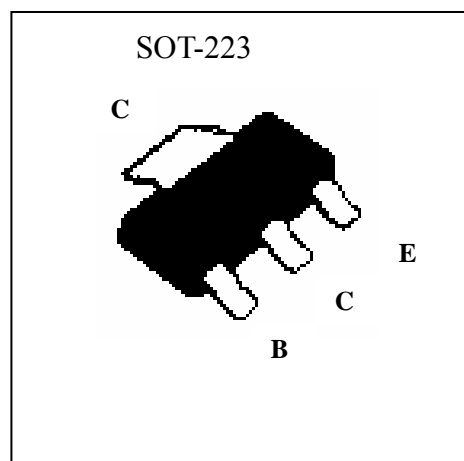


High Voltage NPN Epitaxial Planar Transistor

BTD2568L3

Features

- High BV_{CEO} , 400V minimum
- High BV_{CBO} , 550V minimum
- Pb-free lead plating package

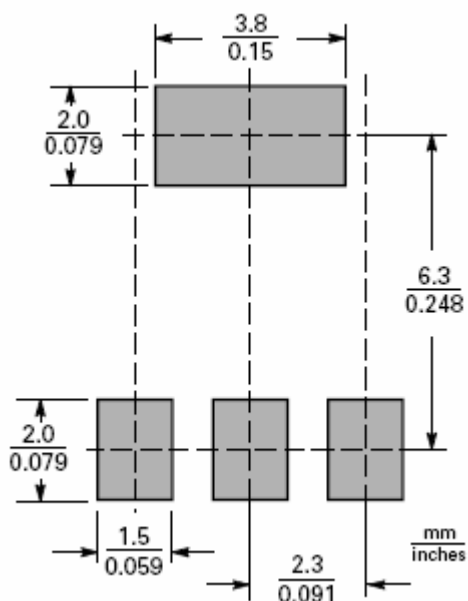
Symbol

Outline

Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	550	V
Collector-Emitter Voltage	V_{CES}	500	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current(DC)	I_C	300	mA
Collector Current(Pulse)	I_{CP}	1	A
Base Current	I_B	200	mA
Power Dissipation @ $T_c=25^{\circ}\text{C}$	P_d	5	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^{\circ}\text{C}$

Characteristics (Ta=25°C)

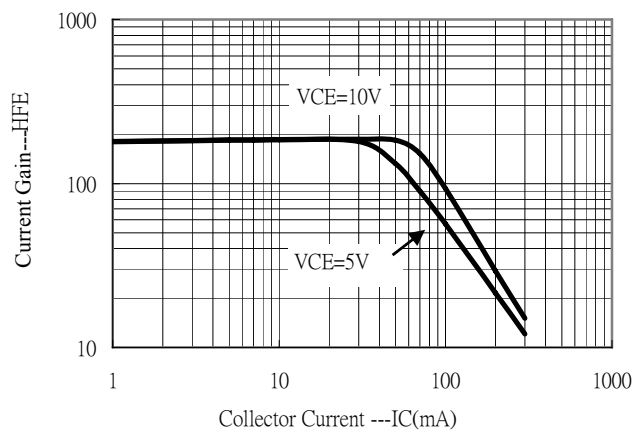
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	550	-	-	V	I _C =100μA
BV _{CES}	500	-	-	V	I _C =100μA, V _{BE} =0V
BV _{CEO}	400	-	-	V	I _C =1mA
BV _{EBO}	6	-	-	V	I _E =10μA
I _{CBO}	-	-	100	nA	V _{CB} =500V
I _{CES}	-	-	100	nA	V _{CE} =450V
I _{EBO}	-	-	100	nA	V _{EB} =5V
*V _{CE(sat)1}	-	-	0.2	V	I _C =20mA, I _B =2mA
*V _{CE(sat)2}	-	-	0.4	V	I _C =50mA, I _B =5mA
*V _{BE(sat)1}	-	-	0.8	V	I _C =10mA, I _B =1mA
*V _{BE(sat)2}	-	-	0.9	V	I _C =50mA, I _B =5mA
*V _{BE(on)}	-	-	0.9	V	V _{CE} =10V, I _C =50mA
h _{FE1}	50	-	-	-	V _{CE} =10V, I _C =1mA
h _{FE2}	100	-	250	-	V _{CE} =10V, I _C =10mA
*h _{FE3}	100	-	250	-	V _{CE} =10V, I _C =50mA
*h _{FE4}	40	-	-	-	V _{CE} =10V, I _C =100mA
f _T	50	-	-	MHz	V _{CE} =10V, I _C =10mA
Cob	-	3.5	-	pF	V _{CB} =20V, I _E =0A, f=1MHz

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

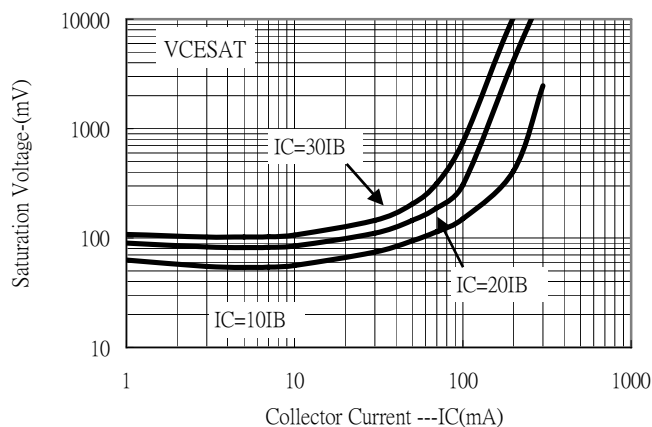
Recommended soldering footprint


Typical Characteristics

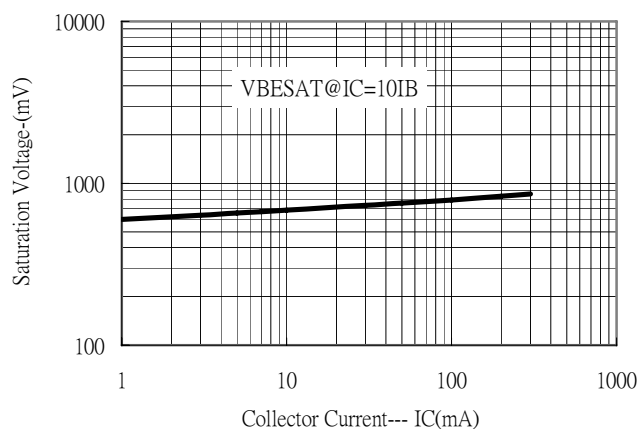
Current Gain vs Collector Current



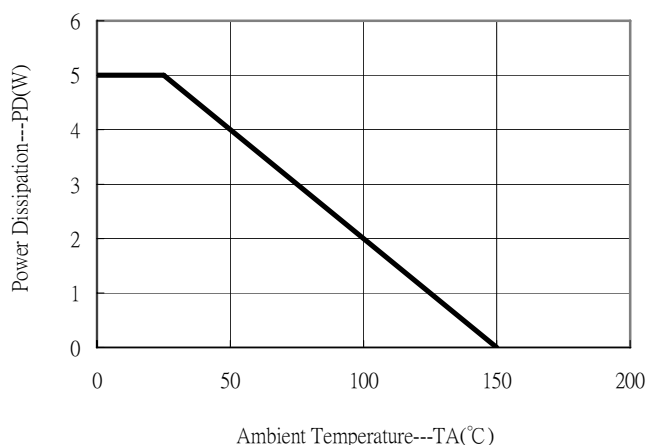
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current



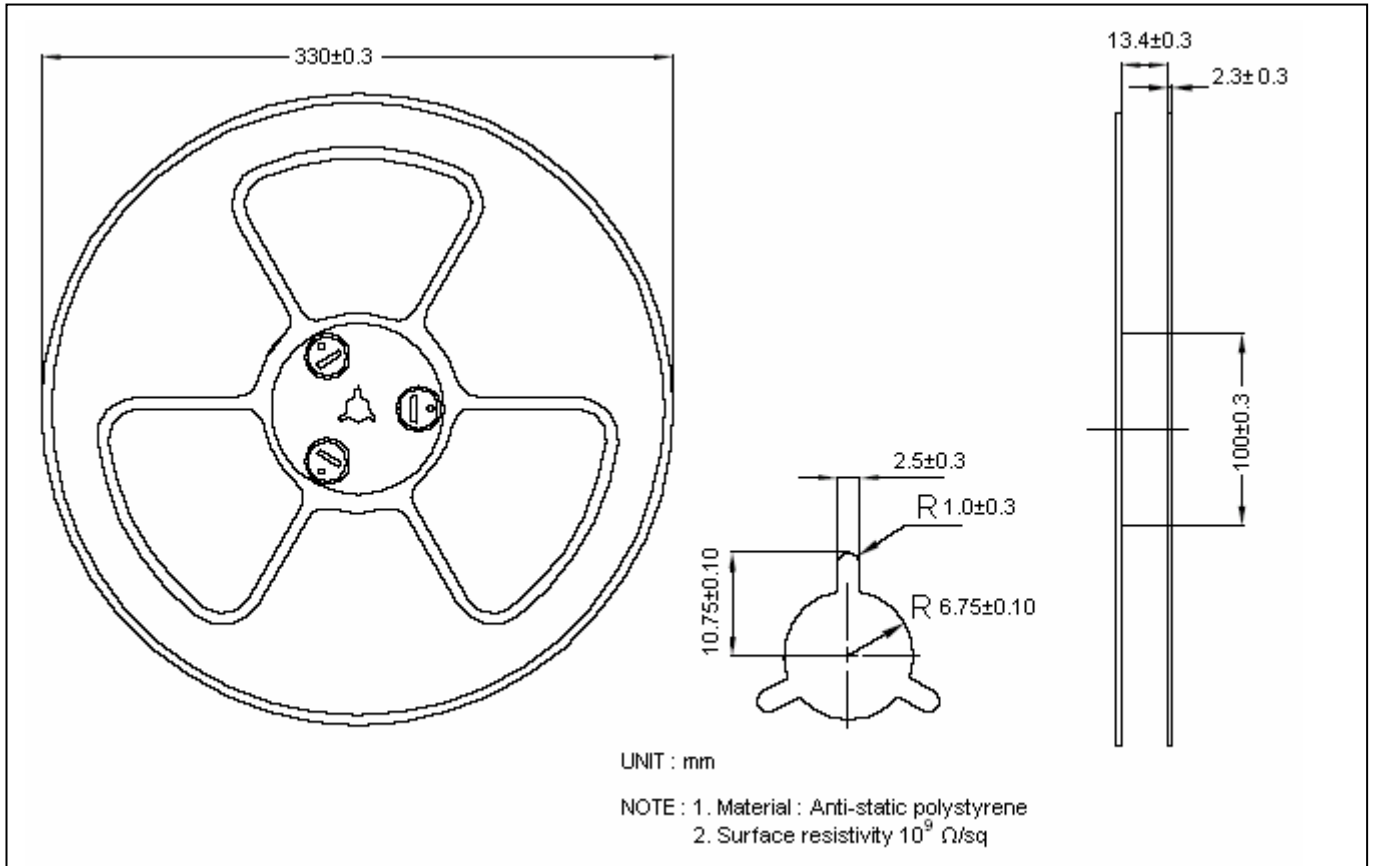
Power Derating Curve



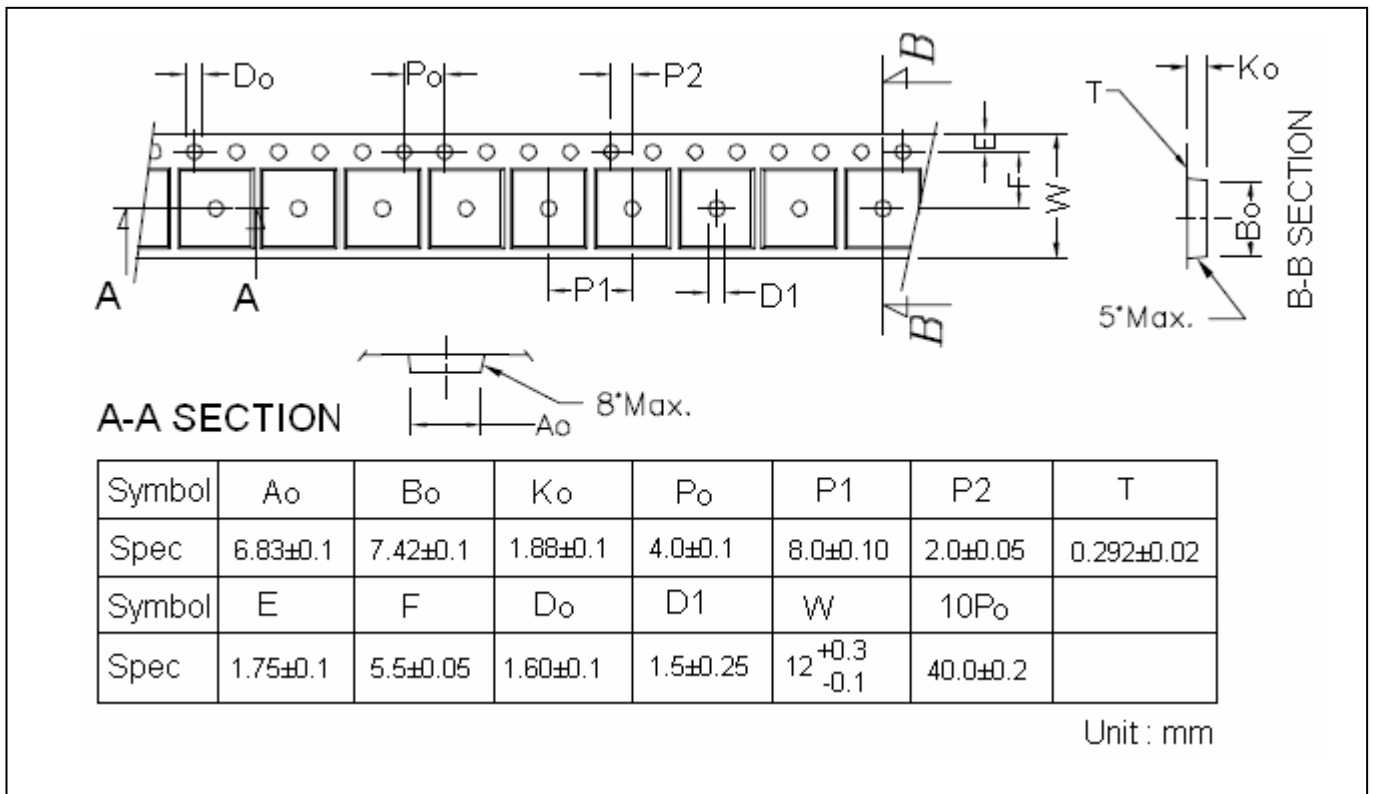
Ordering Information

Device	Package	Shipping
BTD2568L3	SOT-223 (Pb-free lead plating)	2500 pcs / Tape & Reel

Reel Dimension



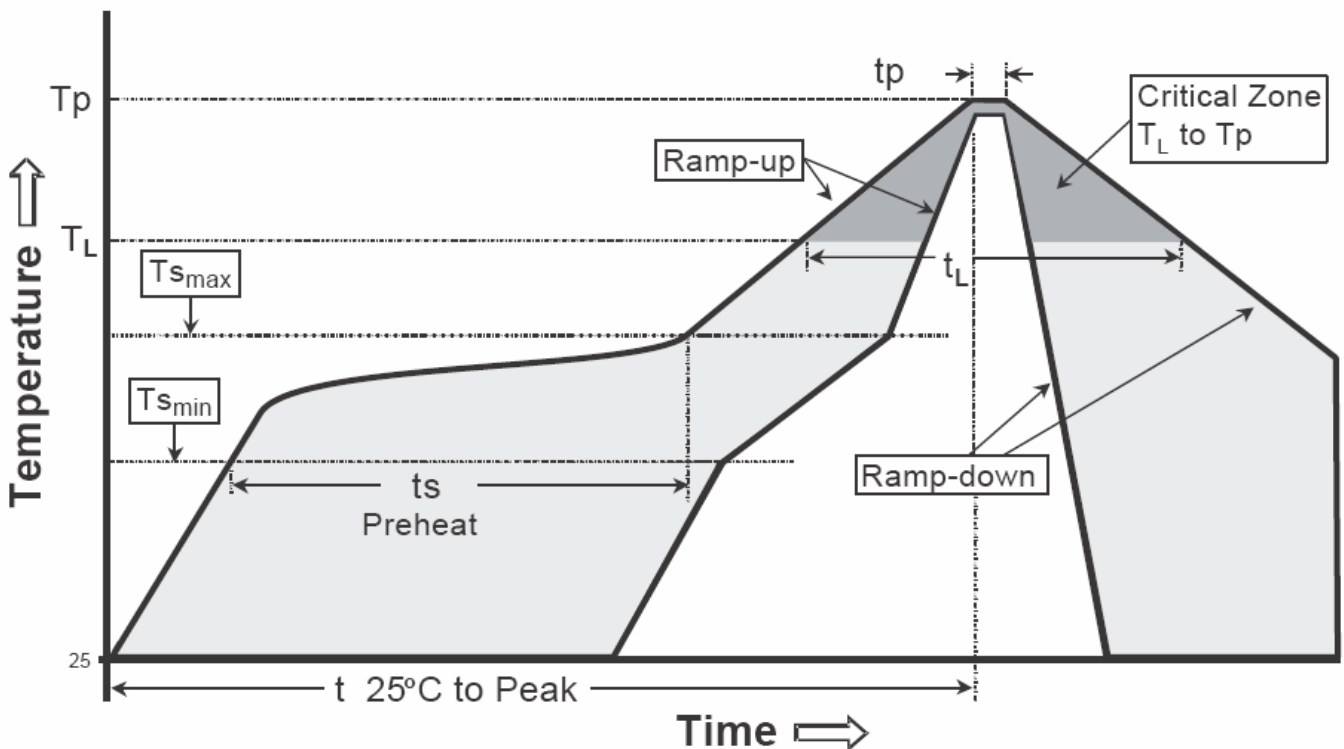
Carrier Tape Dimension



Recommended wave soldering condition

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

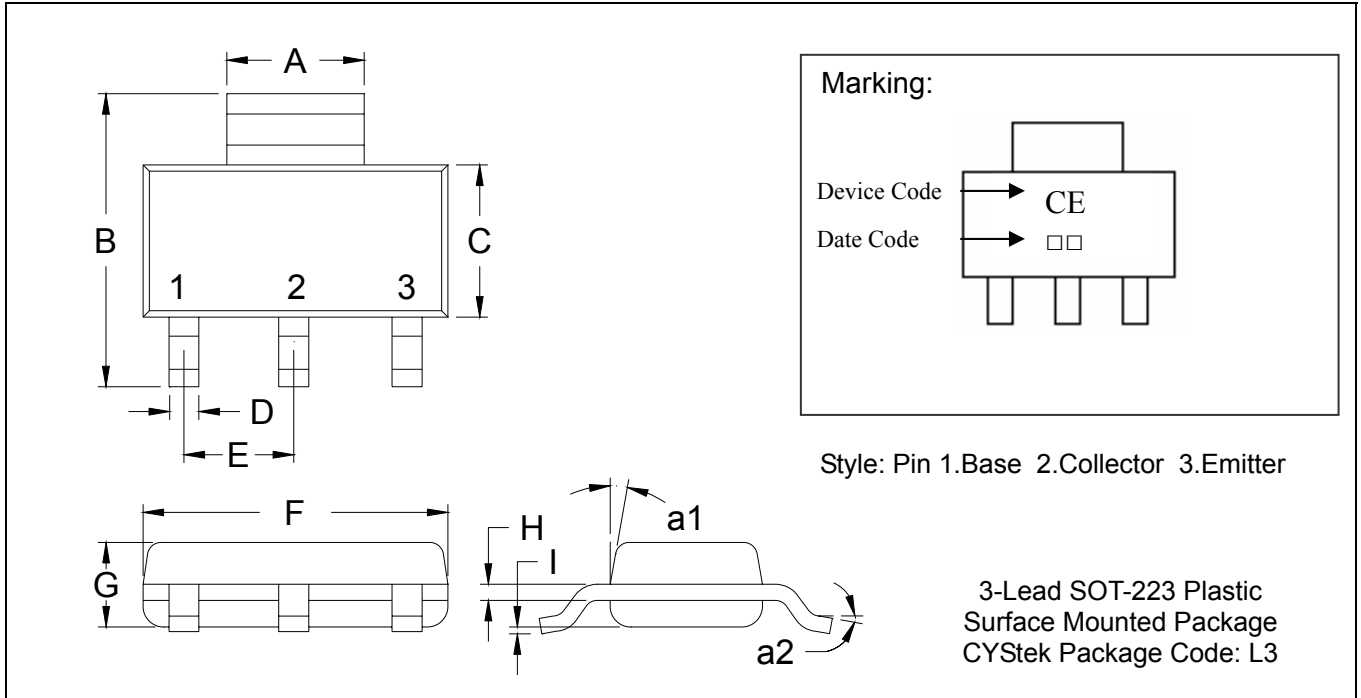
Recommended temperature profile for IR reflow



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-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: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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