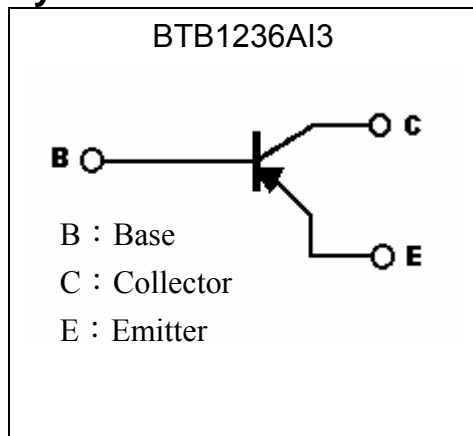
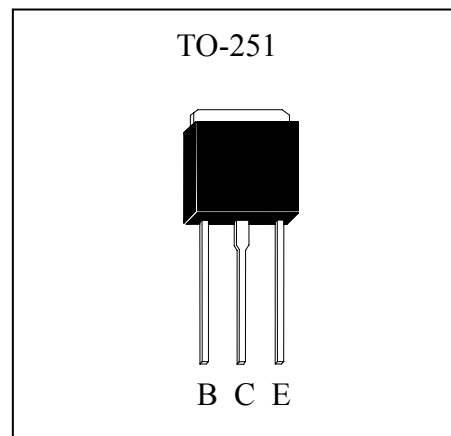


Silicon PNP Epitaxial Planar Transistor

BTB1236AI3

Description

- High BV_{CEO}
- High current capability
- Complementary to BTD1857AI3
- RoHS compliant package

Symbol

Outline

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

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-180	V
Collector-Emitter Voltage	V_{CEO}	-160	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (DC)	I_C	-1.5	A
Collector Current (Pulse)	I_{CP}	-3 (Note)	A
Power Dissipation	P_D	1	W
		10	W
Operating Junction Temperature Range	T_j	-55~+150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~+150	$^\circ\text{C}$

 Note : Single Pulse $P_w \leq 350\mu\text{s}$, Duty $\leq 2\%$.

**Thermal Data**

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	$R_{th,j-c}$	12.5	$^{\circ}C/W$
Thermal Resistance, Junction-to-ambient, max	$R_{th,j-a}$	125	$^{\circ}C/W$

Characteristics (Ta=25°C)

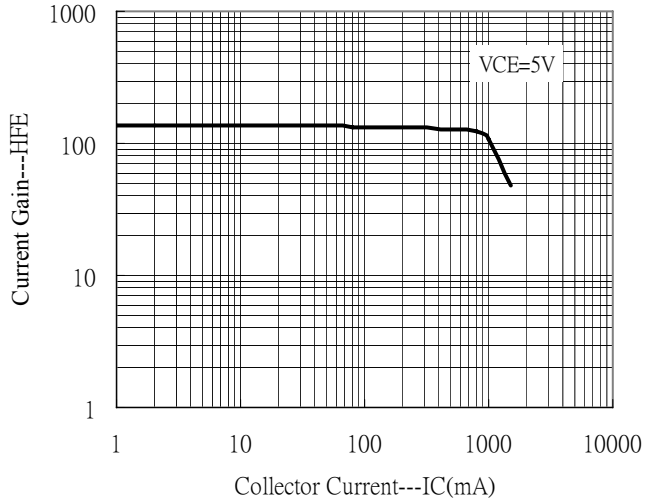
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-180	-	-	V	$I_C=-50\mu A, I_E=0$
BV_{CEO}	-160	-	-	V	$I_C=-1mA, I_B=0$
BV_{EBO}	-5	-	-	V	$I_E=-50\mu A, I_C=0$
I_{CBO}	-	-	-1	μA	$V_{CB}=-160V, I_E=0$
I_{EBO}	-	-	-1	μA	$V_{EB}=-4V, I_C=0$
* $V_{CE(sat)}$	-	-	-0.6	V	$I_C=-1A, I_B=-100mA$
* $V_{BE(on)}$	-	-	-1.5	V	$V_{CE}=-5V, I_C=-150mA$
h_{FE1}	180	-	390	-	$V_{CE}=-5V, I_C=-100mA$
h_{FE2}	80	-	-	-	$V_{CE}=-5V, I_C=-500mA$
f_T	-	180	-	MHz	$V_{CE}=-5V, I_C=-150mA$
Cob	-	24	-	pF	$V_{CB}=-10V, I_E=0, f=1MHz$

*Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$ **Ordering Information**

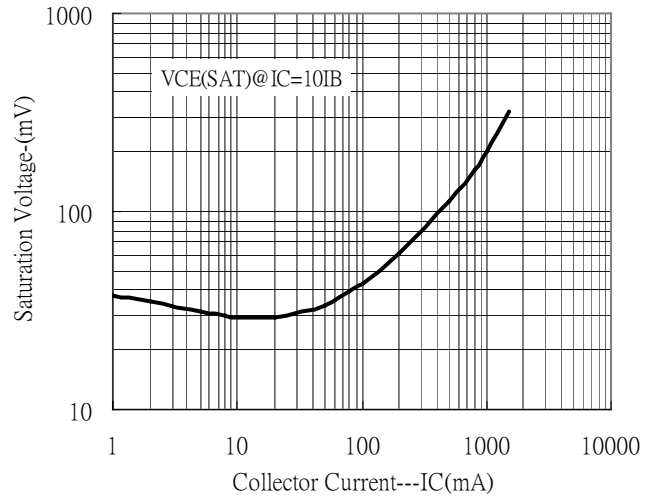
Device	Package	Shipping	Marking
BTB1236AI3	TO-251 (RoHS compliant)	80 pcs / tube, 50 tubes / box	B1236A

Typical Characteristics

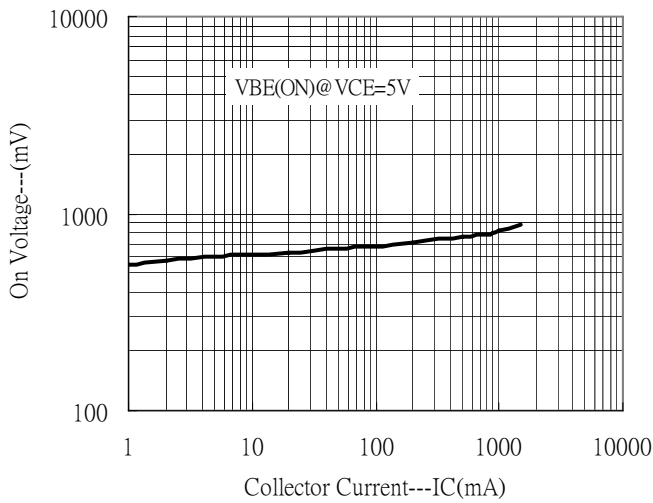
Current Gain vs Collector Current



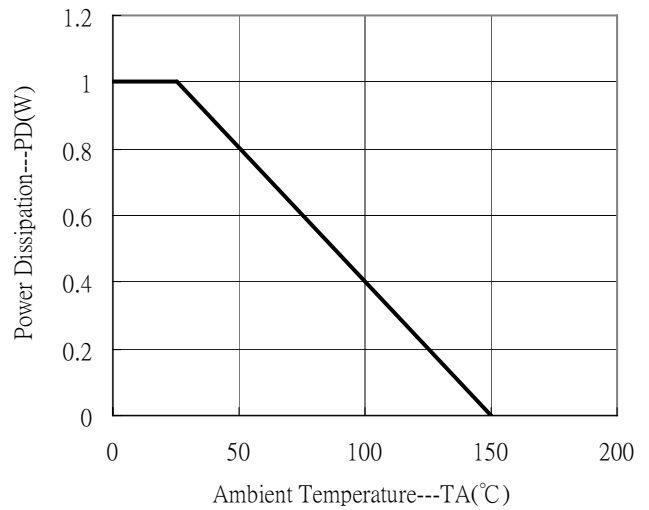
Saturation Voltage vs Collector Current



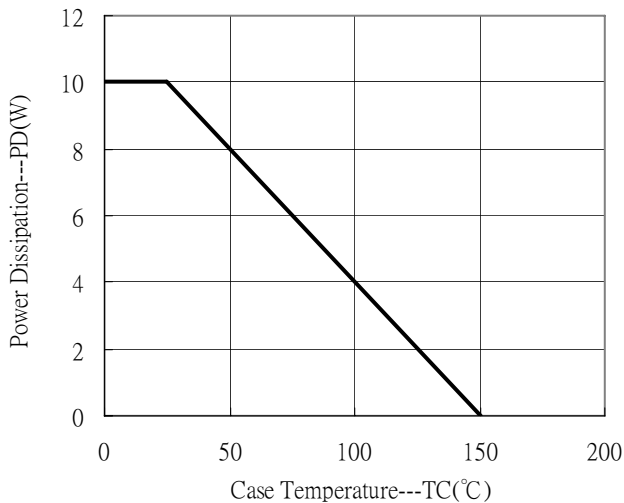
On Voltage vs Collector Current



Power Derating Curve



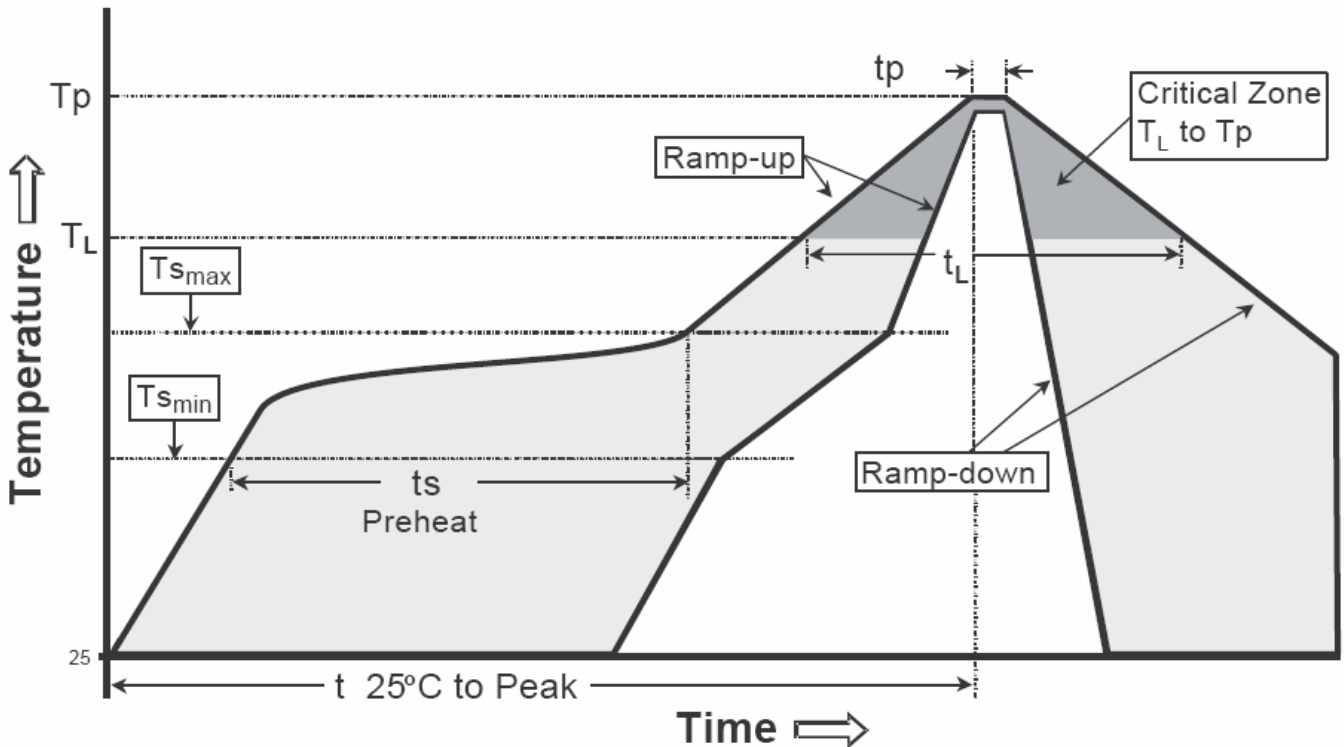
Power Derating Curve



Recommended wave soldering condition

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

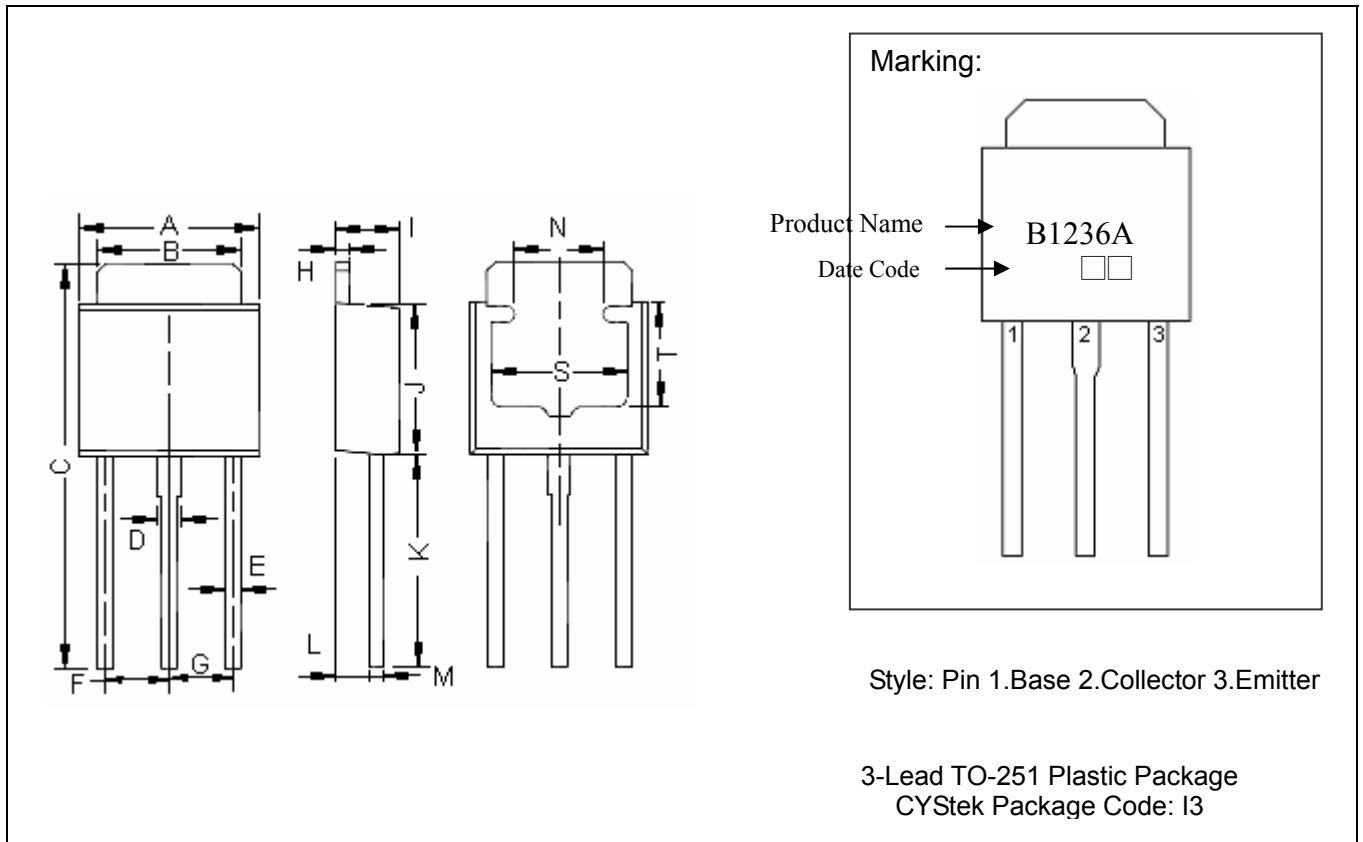
Recommended temperature profile for IR reflow



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.

TO-251 Dimension



Marking:
 Product Name → B1236A
 Date Code → □ □
 1 2 3

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

3-Lead TO-251 Plastic Package
 CYStek Package Code: I3

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.250	0.262	6.350	6.650	I	0.087	0.094	2.200	2.400
B	0.205	0.213	5.200	5.400	J	0.213	0.224	5.400	5.700
C	0.571	0.587	14.500	14.900	K	0.295	0.311	7.500	7.900
D	0.028	0.035	0.700	0.900	L	0.042	0.054	1.050	1.350
E	0.020	0.028	0.500	0.700	M	0.017	0.023	0.430	0.580
F	0.091 TYP		2.300 TYP		N	0.118	REF	3.000	REF
G	0.091 TYP		2.300 TYP		S	0.197	REF	5.000	REF
H	0.017	0.023	0.430	0.580	T	0.150	REF	3.800	REF

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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