

General Purpose PNP Epitaxial Planar Transistor

BTP8550BA3

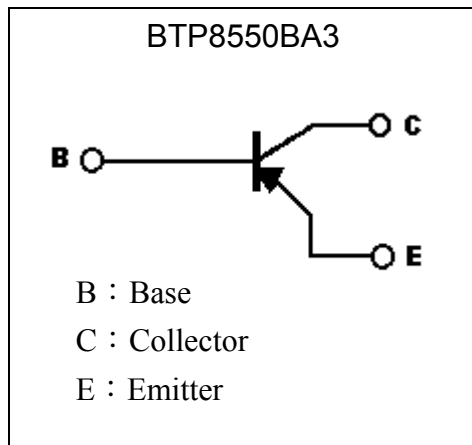
Description

The BTP8550BA3 is designed for use in 2W output amplifier of portable radios in class B push pull operation.

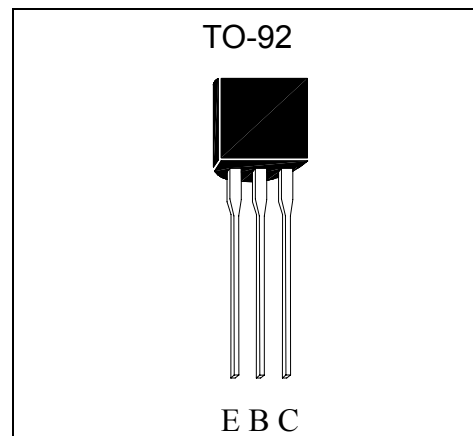
Features

- Large collector current , $I_C = -1.5A$
- Low $V_{CE(sat)}$
- Complementary to BTN8050BA3
- Pb-free & Halogen-free package

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CB0}	-40	V
Collector-Emitter Voltage	V_{CE0}	-25	V
Emitter-Base Voltage	V_{EB0}	-6	V
Collector Current	I_C	-1.5	A
Base Current	I_B	-0.5	A
Total Power Dissipation($T_A=25^\circ C$)	P_d	1	W
Total Power Dissipation($T_C=25^\circ C$)	P_d	2	W
Thermal Resistance, junction to ambient	$R_{\theta JA}$	125	°C/W
Thermal Resistance, junction to case	$R_{\theta JC}$	62.5	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	-40	-	-	V	I _C =-100μA
BV _{CEO}	-25	-	-	V	I _C =-2mA
BV _{EBO}	-6	-	-	V	I _E =-100μA
I _{CBO}	-	-	-100	nA	V _{CB} =-35V
I _{EBO}	-	-	-100	nA	V _{EB} =-6V
*V _{CE(sat)}	-	-	-0.5	V	I _C =-800mA, I _B =-80mA
*V _{BE(sat)}	-	-	-1.2	V	I _C =-800mA, I _B =-80mA
*V _{BE(on)}	-	-	-1	V	V _{CE} =-1V, I _C =-10mA
*h _{FE 1}	45	-	-	-	V _{CE} =-1V, I _C =-5mA
*h _{FE 2}	85	-	500	-	V _{CE} =-1V, I _C =-100mA
*h _{FE 3}	40	-	-	-	V _{CE} =-1V, I _C =-800mA
f _T	100	-	-	MHz	V _{CE} =-10V, I _C =-50mA, f=100MHz
C _{ob}	-	-	20	pF	V _{CB} =-10V, f=1MHz

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

Classification Of h_{FE 2}

Rank	B	C	D	E
Range	85~160	120~200	160~320	250~500

Ordering Information

Device	Package	Shipping	Marking
BTP8550BA3	TO-92 (Pb-free & Halogen-free)	2000 pcs / Tape & Box	8550

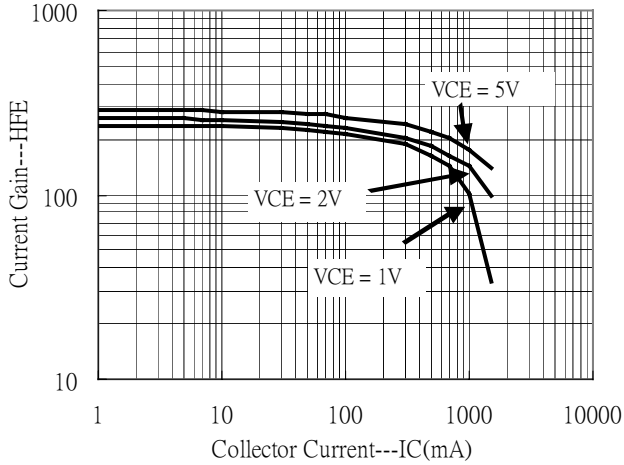
Recommended Storage Condition:

Temperature : 10~ 35 °C

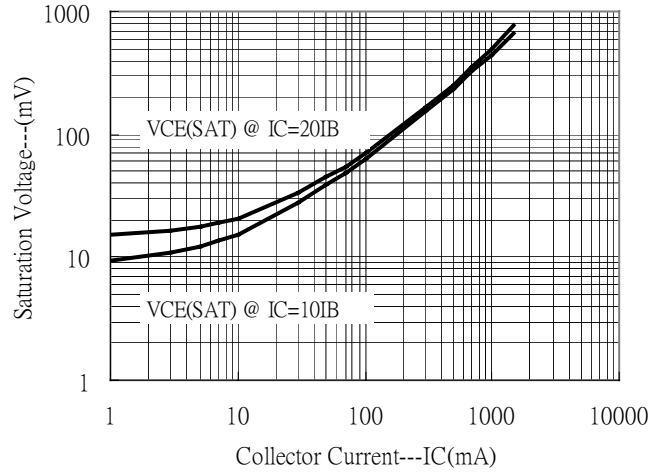
Humidity : 30~ 60% RH

Characteristic Curves

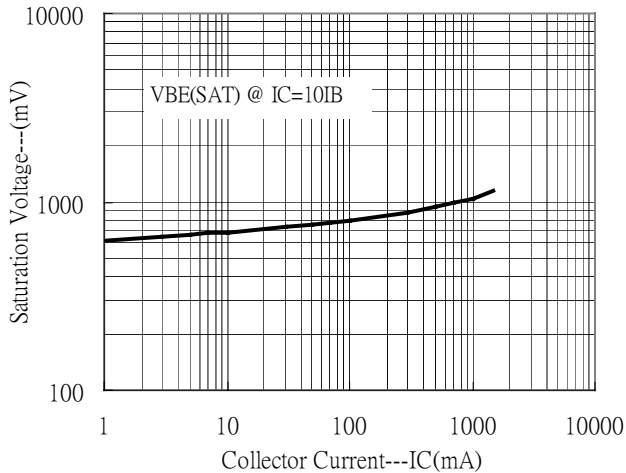
Current Gain vs Collector Current



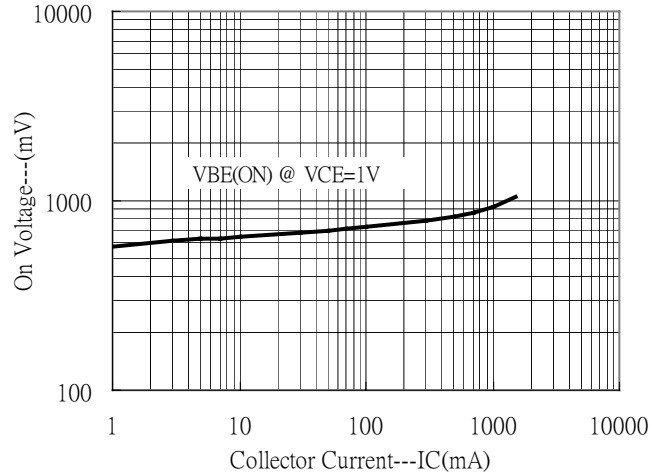
Saturation Voltage vs Collector Current



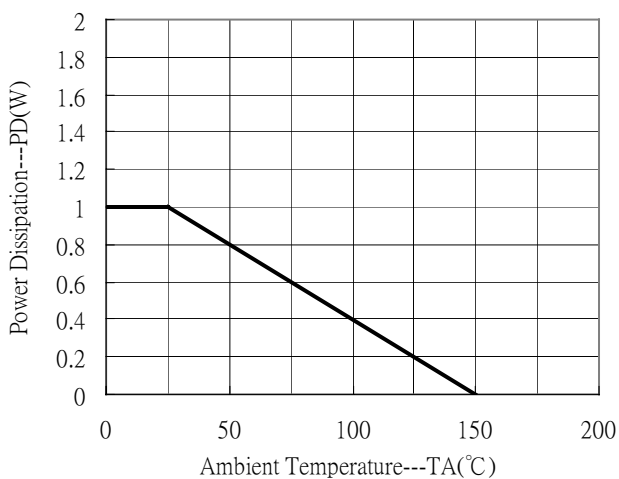
Saturation Voltage vs Collector Current



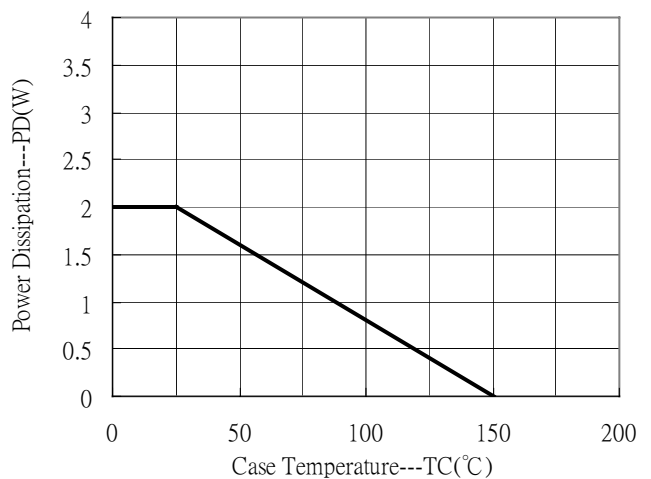
On Voltage vs Collector Current



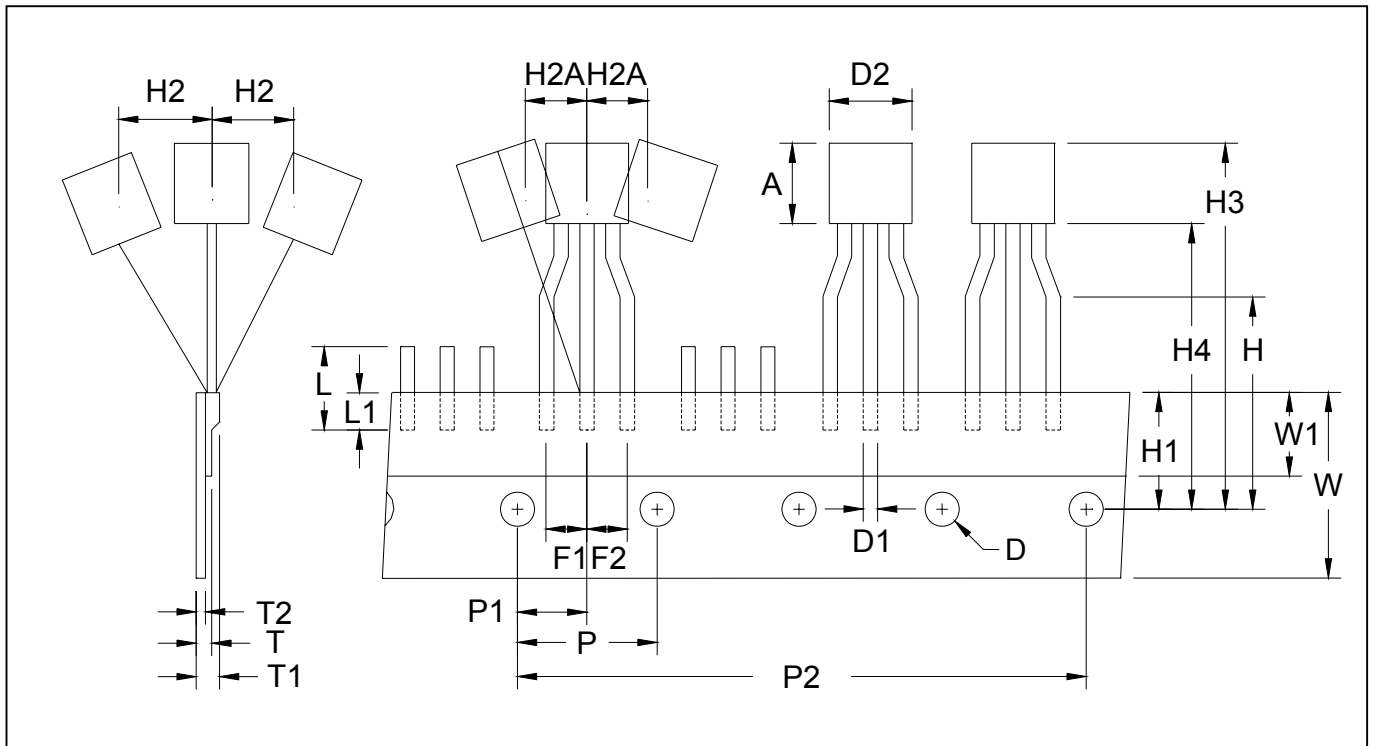
Power Derating Curve



Power Derating Curve



TO-92 Taping Outline

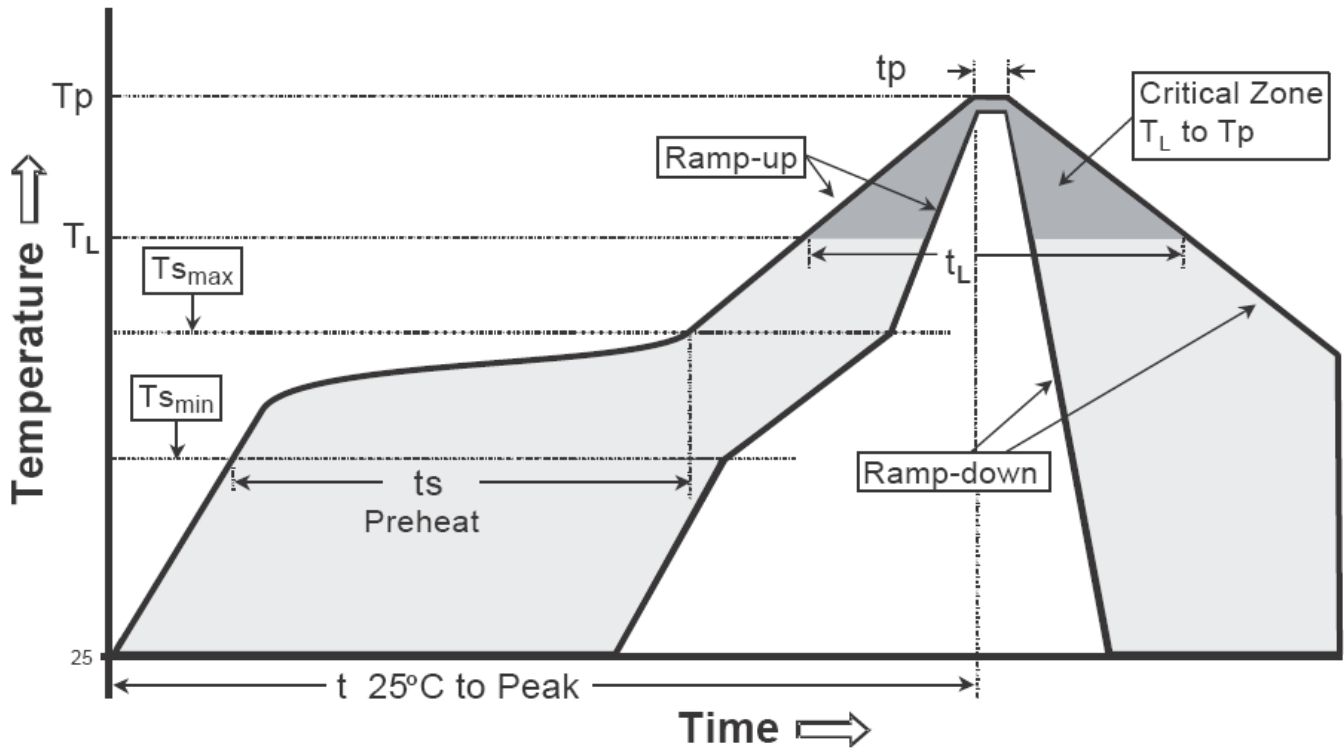


DIM	Item	Millimeters	
		Min.	Max.
A	Component body height	4.33	4.83
D	Tape Feed Diameter	3.80	4.20
D1	Lead Diameter	0.36	0.53
D2	Component Body Diameter	4.33	4.83
F1,F2	Component Lead Pitch	2.40	2.90
F1,F2	F1-F2	-	±0.3
H	Height Of Seating Plane	15.50	16.50
H1	Feed Hole Location	8.50	9.50
H2	Front To Rear Deflection	-	1
H2A	Deflection Left Or Right	-	1
H3	Component Height	-	27
H4	Feed Hole To Bottom Of Component	-	21
L	Lead Length After Component Removal	-	11
L1	Lead Wire Enclosure	2.50	-
P	Feed Hole Pitch	12.50	12.90
P1	Center Of Seating Plane Location	5.95	6.75
P2	4 Feed Hole Pitch	50.30	51.30
T	Over All Tape Thickness	-	0.55
T1	Total Taped Package Thickness	-	1.42
T2	Carrier Tape Thickness	0.36	0.68
W	Tape Width	17.50	19.00
W1	Adhesive Tape Width	5.00	7.00
-	20 pcs Pitch	253	255

Recommended wave soldering condition

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

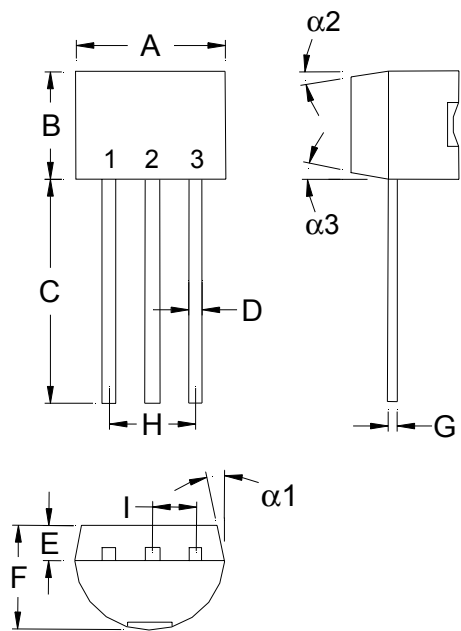
Recommended temperature profile for IR reflow



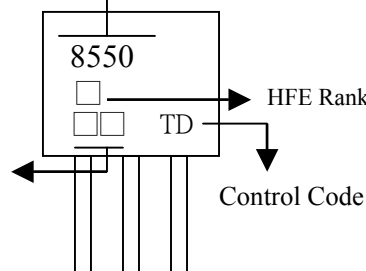
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(Ts min)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (TL)	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.

TO-92 Dimension



Marking:



Product Name

Date Code: Year+Month
 Year: 8→2008, 9→2009
 Month: 1→1, 2→2, . . . ,
 9→9, A→10, B→11, C→12

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

3-Lead TO-92 Plastic Package
 CYStek Package Code: A3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	$\alpha 1$	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	$\alpha 2$	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	$\alpha 3$	-	*2°	-	*2°

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: KFC ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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