Low Vcesat PNP Epitaxial Planar Transistor

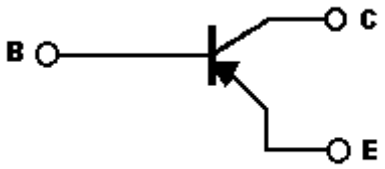
BTB772ST3

Features

- Low V_{CE}(sat), typically -0.45 V at I_C / I_B = -2A / -0.2A
- Excellent current gain characteristics
- Pb-free lead plating and halogen-free package

Symbol

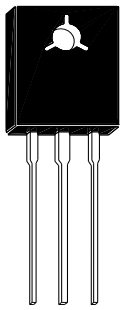
BTB772ST3



B：Base
C：Collector
E：Emitter

Outline

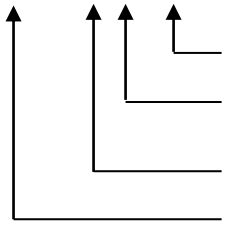
TO-126



E C B

Ordering Information

Device	Package	Shipping
BTB772ST3-P-BL-X	TO-126 (Pb-free lead plating and halogen-free package)	200 pcs / bag, 3,000 pcs/box 30,000 pcs/carton
BTB772ST3-P-UH-X		60 pcs/ tube, 40 tubes/box



Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

Packing spec, BL: bulk, 200 pcs/bag, 15 bags/box, 10 boxes/carton ; UH : tube, 60 pcs/tube, 40 tubes/box

Product rank, zero for no rank products

Product name

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C(DC)	-2	A
	I_C(pulse)	-5 *1	A
Power Dissipation	Pd(Ta=25℃)	1	W
	Pd(Tc=25℃)	10	
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

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

Thermal Data

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

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-40	-	-	V	I_C=-50μA, I_E=0
BV_{CEO}	-30	-	-	V	I_C=-1mA, I_B=0
BV_{EBO}	-5	-	-	V	I_E=-50μA, I_C=0
I_{CBO}	-	-	-1	μA	V_{CB}=-30V, I_E=0
I_{EBO}	-	-	-1	μA	V_{EB}=-5V, I_C=0
*$V_{CE(sat)}$	-	-0.45	-0.6	V	I_C=-2A, I_B=-0.2A
*$V_{BE(sat)}$	-	-1	-1.5	V	I_C=-2A, I_B=-0.2A
*h_{FE} 1	120	-	-	-	V_{CE}=-2V, I_C=-20mA
*h_{FE} 2	180	-	390	-	V_{CE}=-2V, I_C=-500mA
f_T	-	80	-	MHz	V_{CE}=-5V, I_E=-0.1A, f=100MHz
Cob	-	55	-	pF	V_{CB}=-10V, f=1MHz

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

Classification Of h_{FE} 2

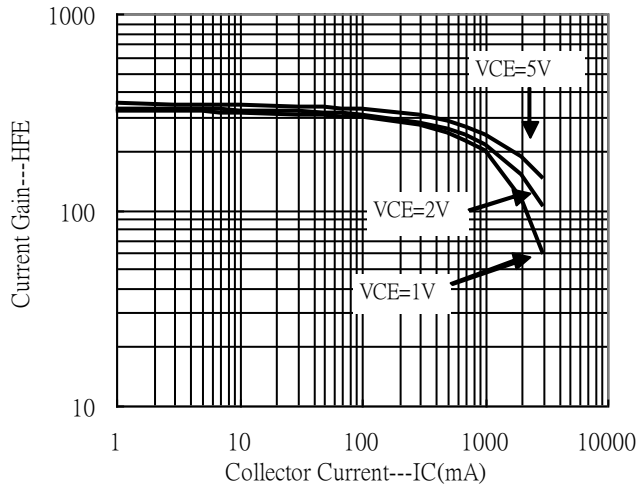
Rank	P
Range	180~390

Recommended Storage Condition:

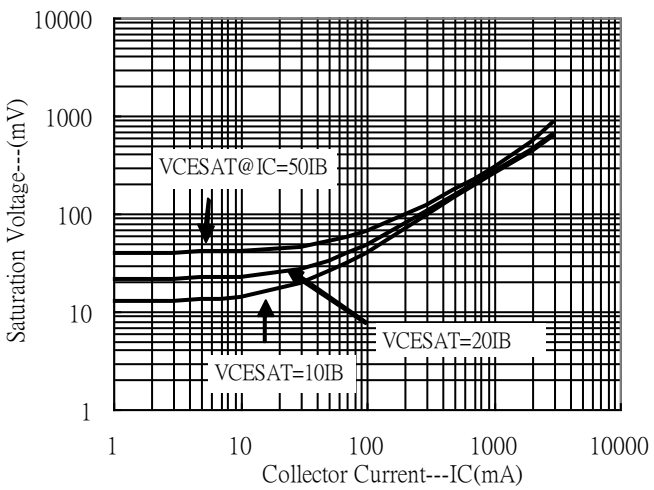
Temperature : 10~ 35 °C
Humidity : 30~ 60% RH

Typical Characteristics

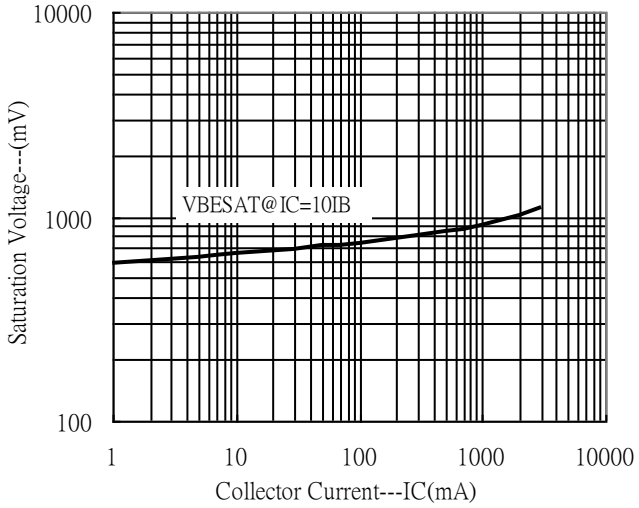
Current Gain vs Collector Current



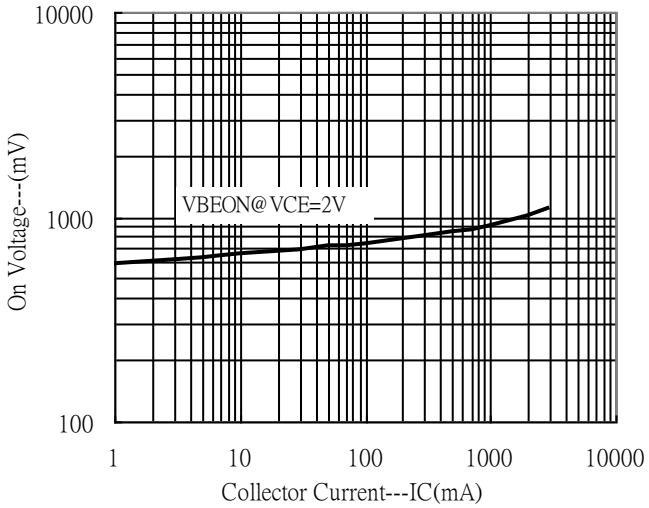
Saturation Voltage vs Collector Current



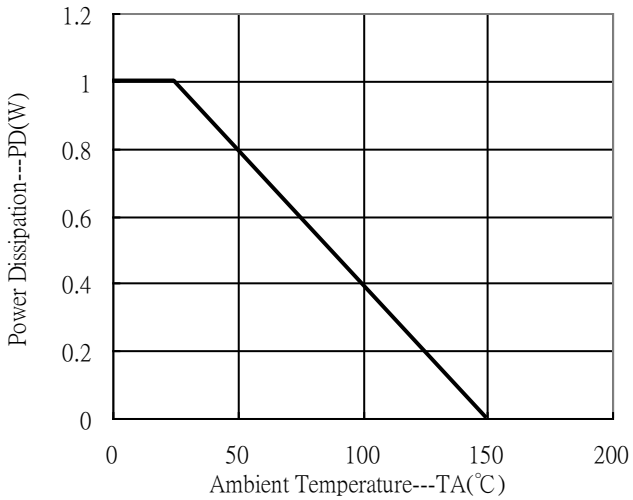
Saturation Voltage vs Collector Current



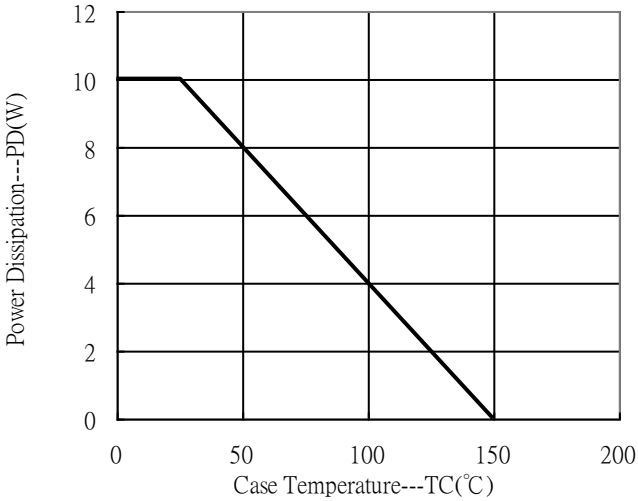
On Voltage vs Collector Current



Power Derating Curve



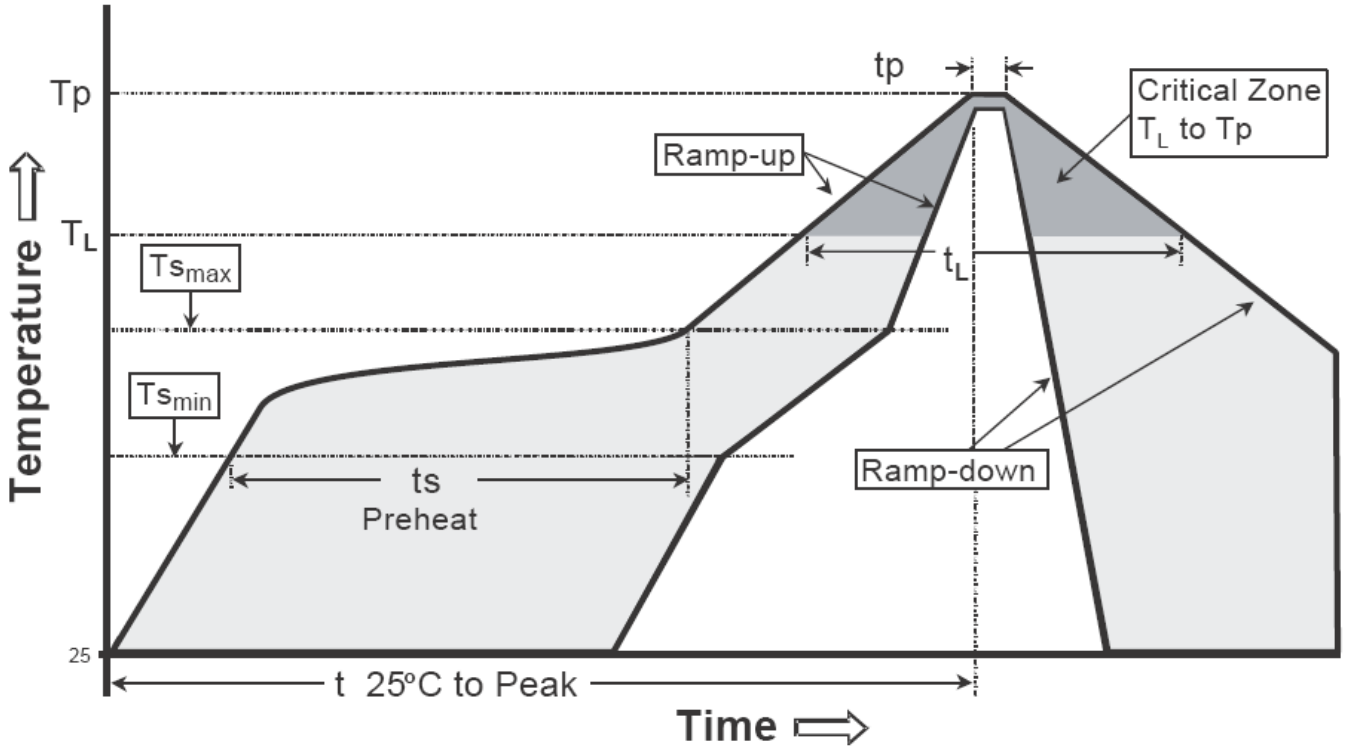
Power Derating Curve



Recommended wave soldering condition

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

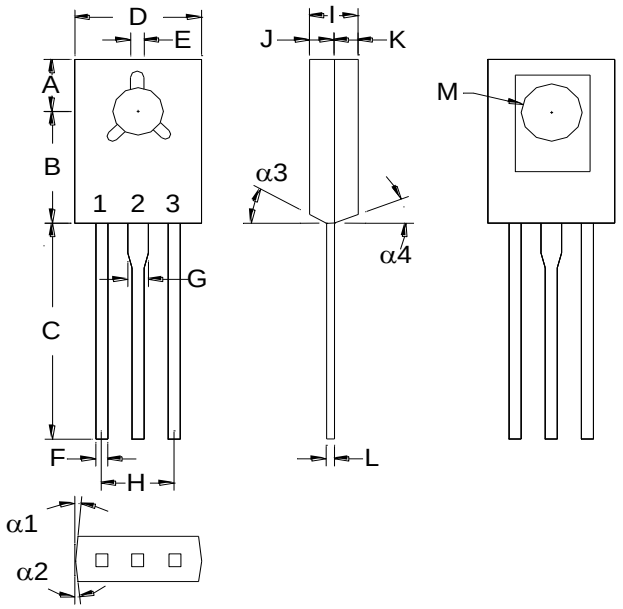
Recommended temperature profile for IR reflow

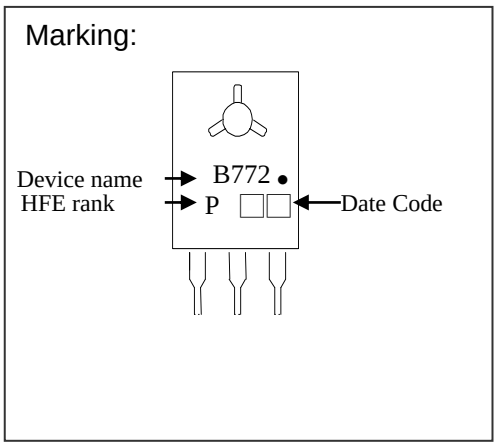


Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(Ts min) −Temperature Max(Ts max) −Time(ts min to ts max)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (TL) − Time (tL)	 183°C 60-150 seconds	 217°C 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-126 Dimension





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

3-Lead TO-126 Plastic Package
CYStek Package Code: T3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
α1	-	*3°	-	*3°	F	0.0280	0.0319	0.71	0.81
α2	-	*3°	-	*3°	G	0.0480	0.0520	1.22	1.32
α3	-	*3°	-	*3°	H	0.1709	0.1890	4.34	4.80
α4	-	*3°	-	*3°	I	0.0950	0.1050	2.41	2.66
A	0.1500	0.1539	3.81	3.91	J	0.0450	0.0550	1.14	1.39
B	0.2752	0.2791	6.99	7.09	K	0.0450	0.0550	1.14	1.39
C	0.5315	0.6102	13.50	15.50	L	-	*0.0217	-	*0.55
D	0.2854	0.3039	7.52	7.72	M	0.1378	0.1520	3.50	3.86
E	0.0374	0.0413	0.95	1.05					

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