

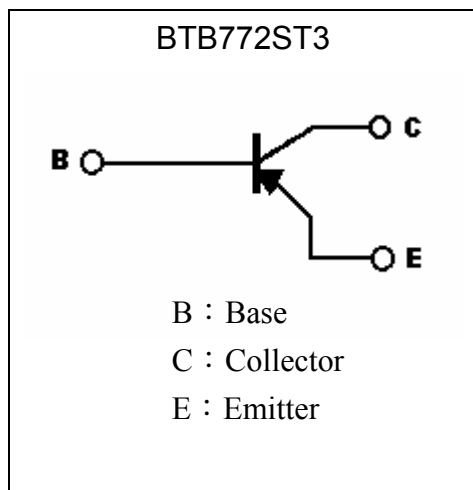
Low Vcesat PNP Epitaxial Planar Transistor

BTB772ST3

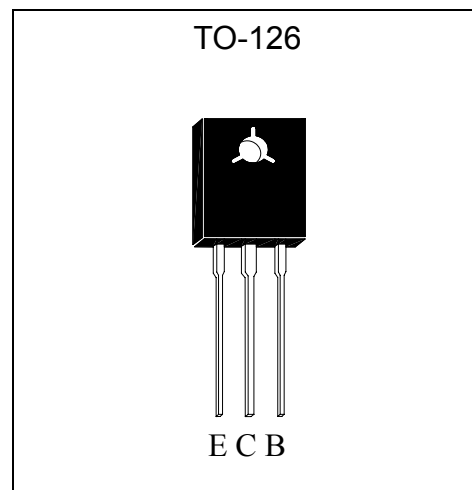
Features

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

Symbol



Outline



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	$P_d(T_a=25^\circ C)$	1	W
	$P_d(T_c=25^\circ C)$	10	
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

Note : *1. Single Pulse $P_w \leq 300\mu s$, Duty $\leq 2\%$.



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 hFE 2

Rank	P
Range	180~390

Ordering Information

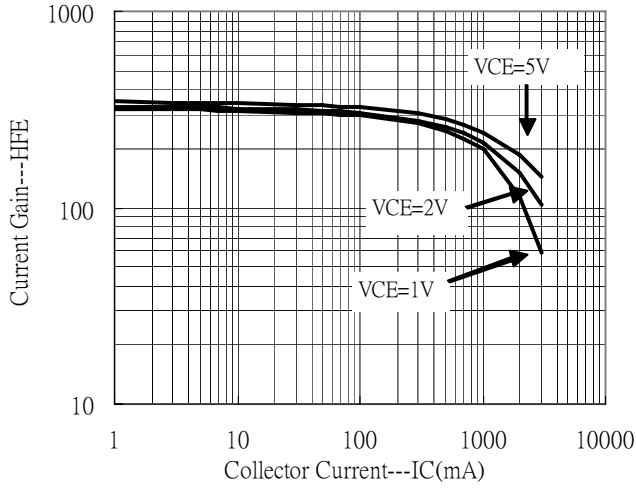
Device	Package	Shipping	Marking
BTB772ST3	TO-126 (Pb-free)	200 pcs / bag, 15 bags/box, 10 boxes/carton	B772

Recommended Storage Condition:

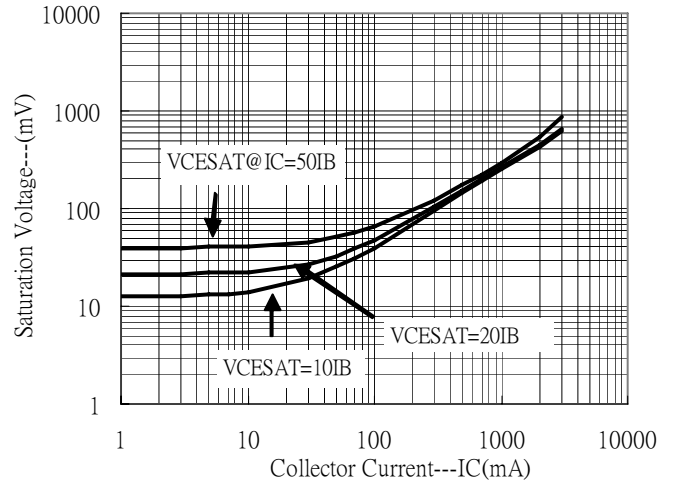
Temperature : 10~ 35 °C
Humidity : 30~ 60% RH

Characteristic Curves

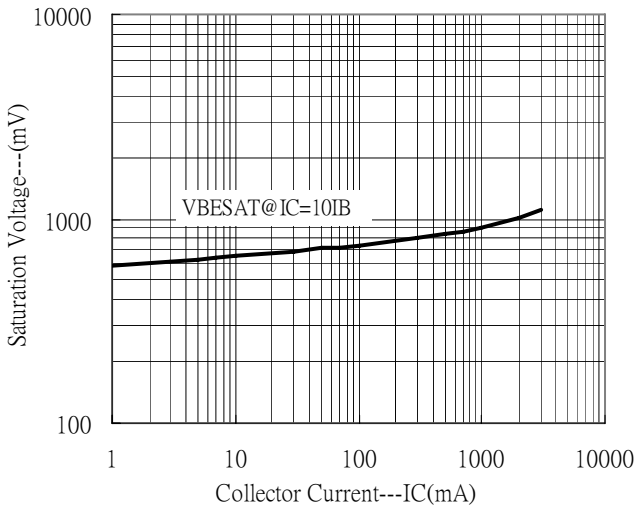
Current Gain vs Collector Current



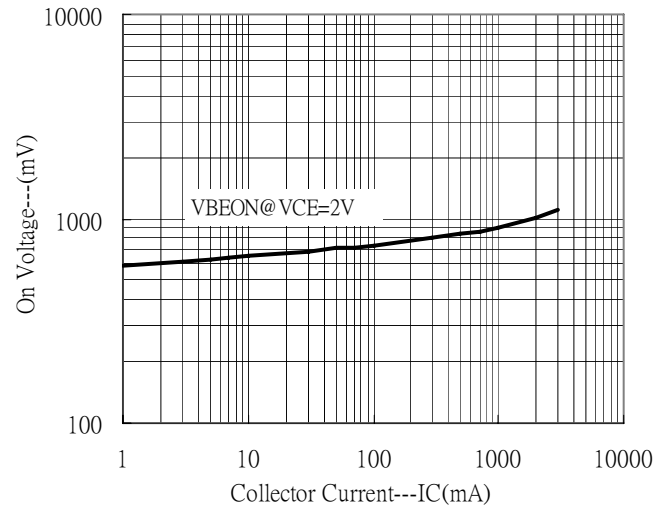
Saturation Voltage vs Collector Current



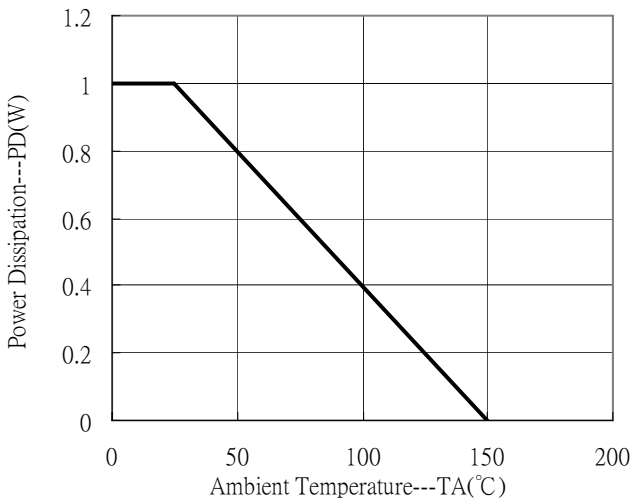
Saturation Voltage vs Collector Current



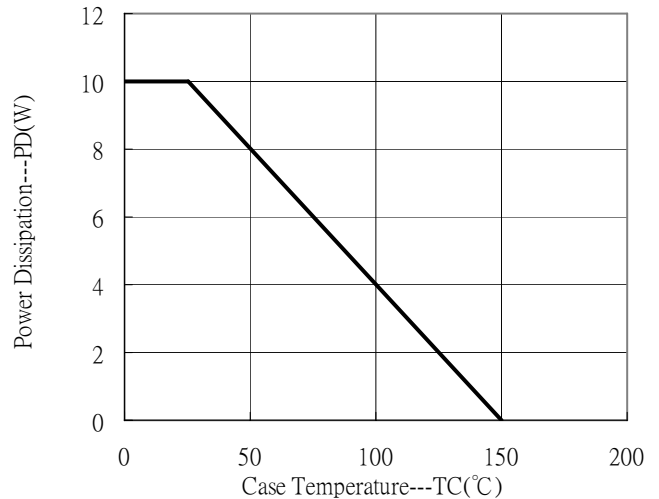
On Voltage vs Collector Current



Power Derating Curve



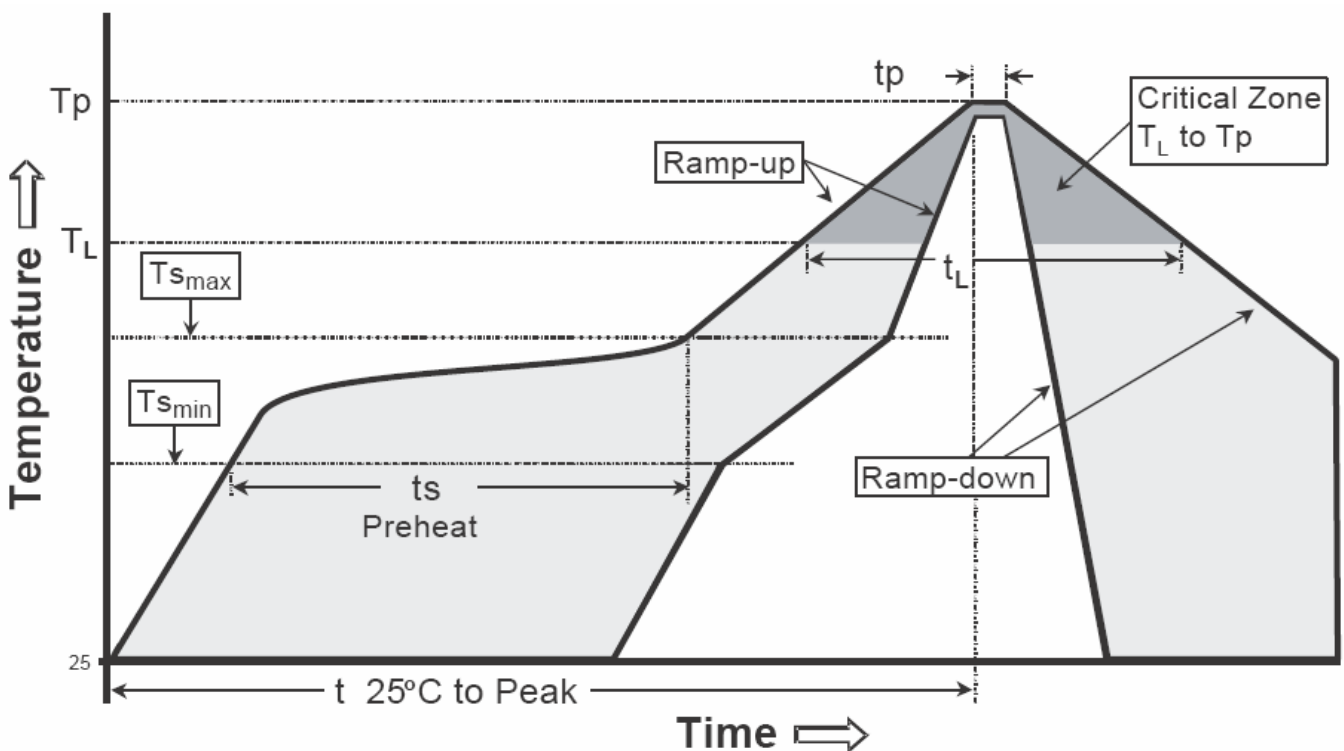
Power Derating Curve



Recommended wave soldering condition

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

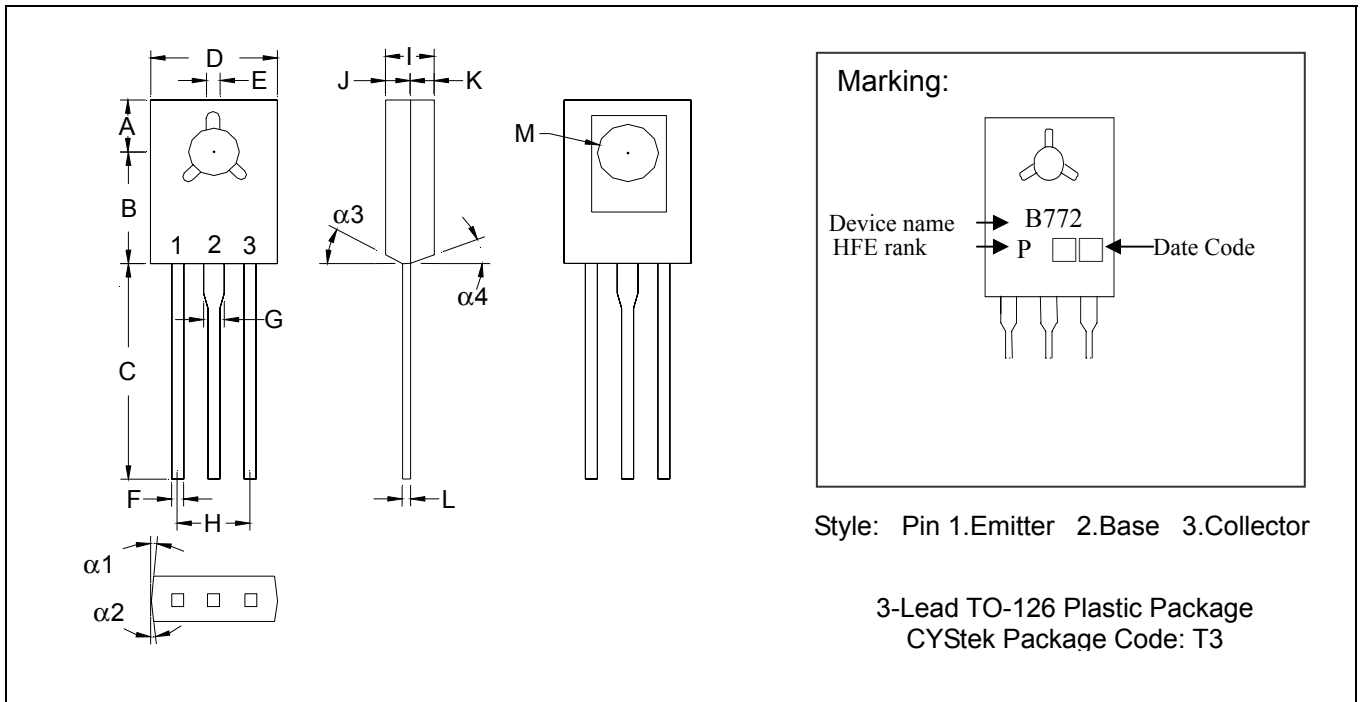
Recommended temperature profile for IR reflow



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-126 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
$\alpha 1$	-	*3°	-	*3°	F	0.0280	0.0319	0.71	0.81
$\alpha 2$	-	*3°	-	*3°	G	0.0480	0.0520	1.22	1.32
$\alpha 3$	-	*3°	-	*3°	H	0.1709	0.1890	4.34	4.80
$\alpha 4$	-	*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

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