Low Vcesat NPN Epitaxial Planar Transistor

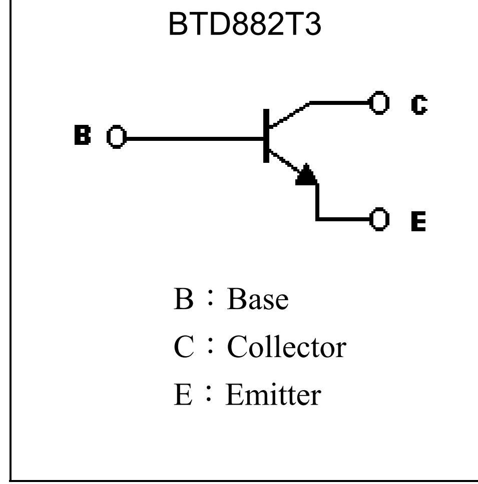
BTD882T3

BV_{CEO}	50V
I_C	3A

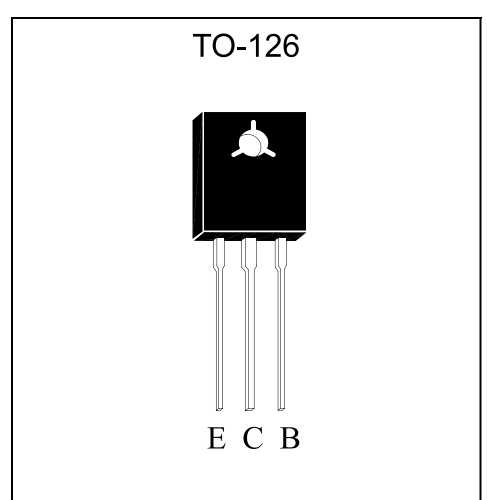
Features

- Low $V_{CE(sat)}$, typically 0.25V at I_C / I_B = 2A / 0.2A
- Excellent current gain characteristics
- Complementary to BTB772T3
- Pb-free lead plating package

Symbol

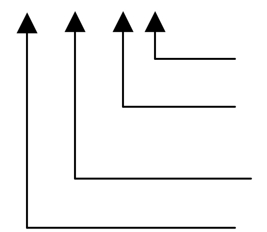


Outline



Ordering Information

Device	Package	Shipping
BTD882T3-X-BL-X	TO-126 (Pb-free lead plating package)	200 pcs / bag, 3,000 pcs/box , 30,000 pcs/carton



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

Product rank, zero for no rank products

Product name

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C(DC)	3	A
	I_C(Pulse)	7 *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≦350μs,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)

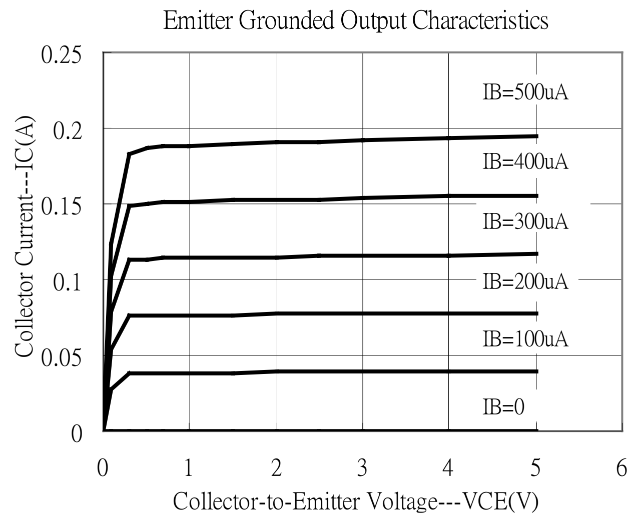
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	50	-	-	V	I_C=50μA, I_E=0
BV_{CEO}	50	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	5	-	-	V	I_E=50μA, I_C=0
I_{CBO}	-	-	1	μA	V_{CB}=40V, I_E=0
I_{EBO}	-	-	1	μA	V_{EB}=5V, I_C=0
*$V_{CE(sat)}$	-	0.25	0.5	V	I_C=2A, I_B=0.2A
*$V_{BE(sat)}$	-	-	2	V	I_C=2A, I_B=0.2A
*$h_{FE}1$	150	-	-	-	V_{CE}=2V, I_C=20mA
*$h_{FE}2$	180	-	560	-	V_{CE}=2V, I_C=1A
f_T	-	90	-	MHz	V_{CE}=5V, I_C=0.1A, f=100MHz
Cob	-	45	-	pF	V_{CB}=10V, f=1MHz

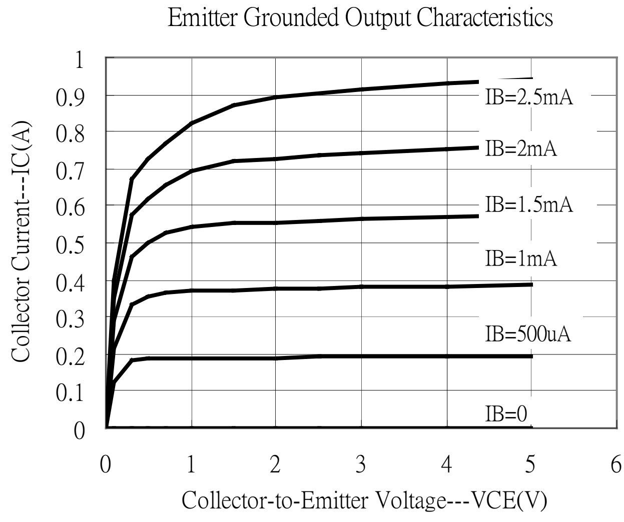
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

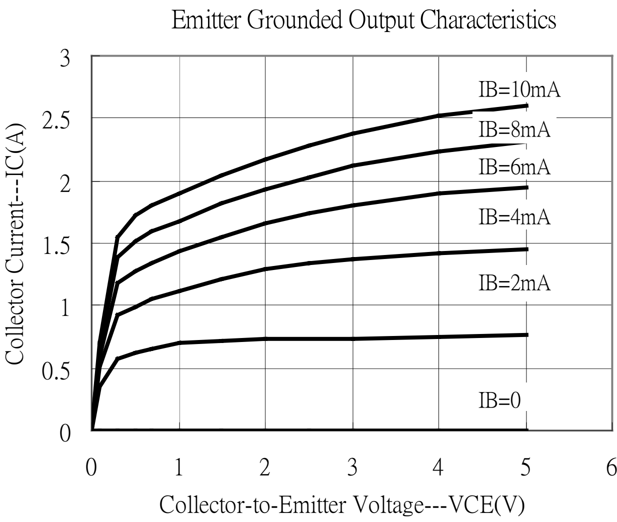
Classification Of h_{FE} 2

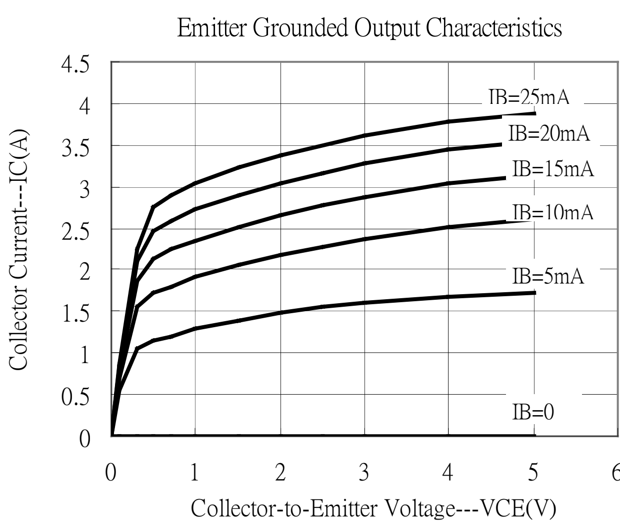
Rank	P	E
Range	180~390	270~560

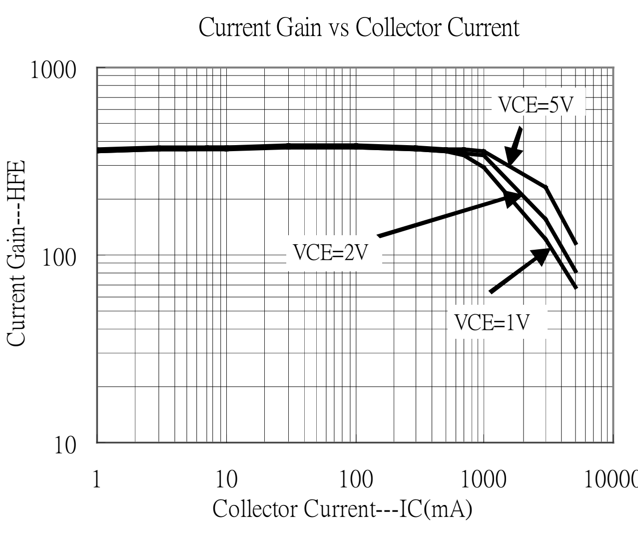
Characteristic Curves

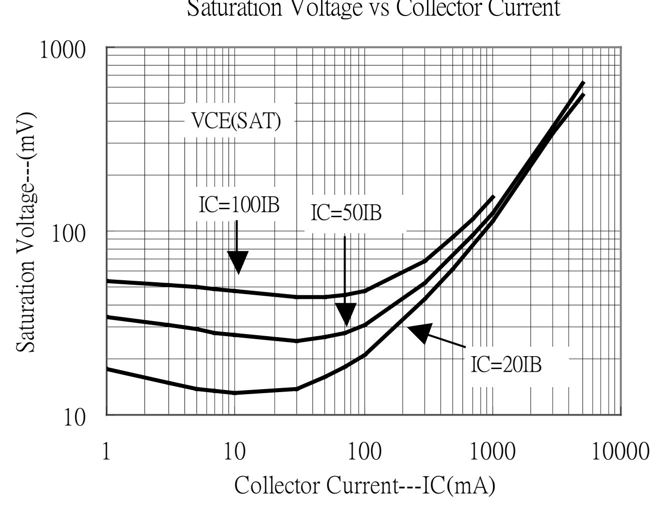




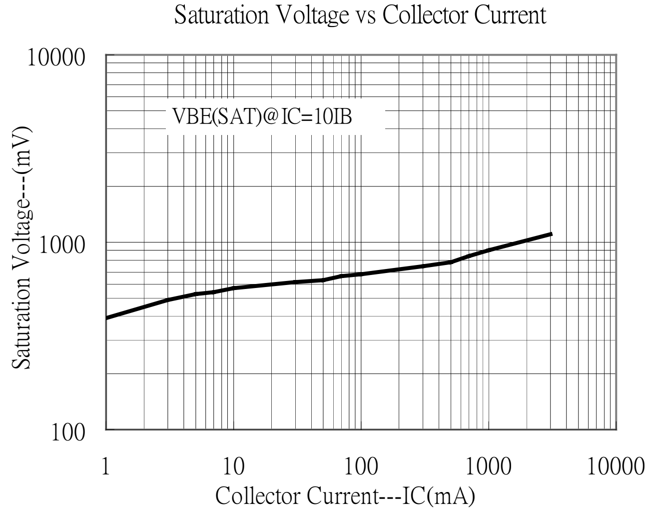


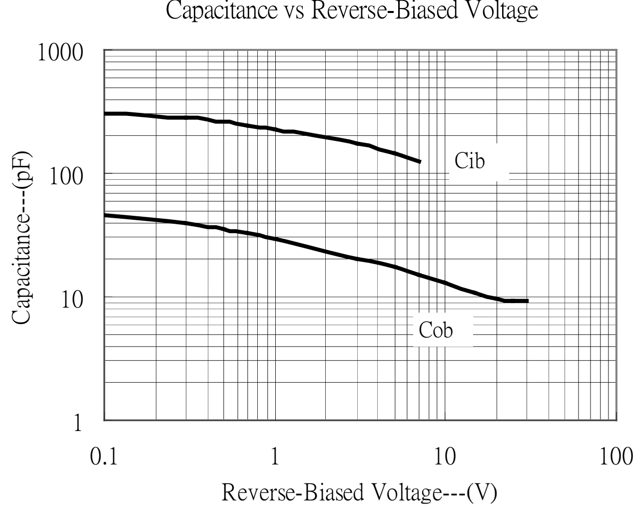


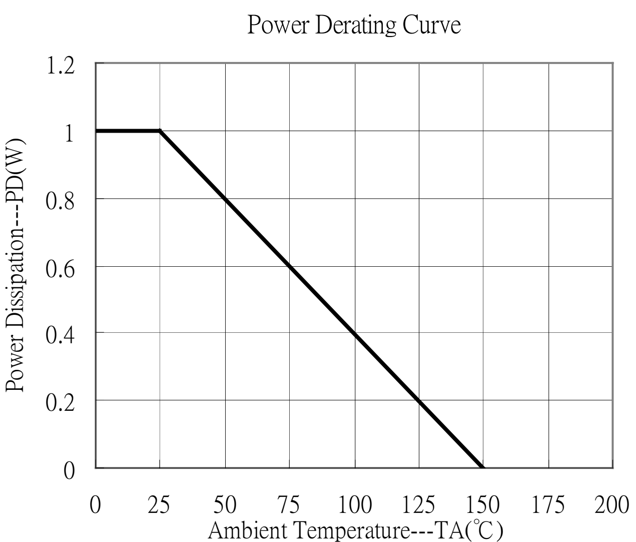


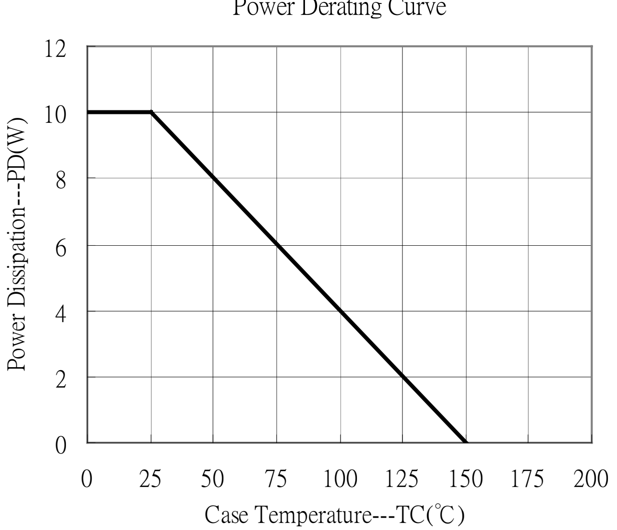


Characteristic Curves(Cont.)





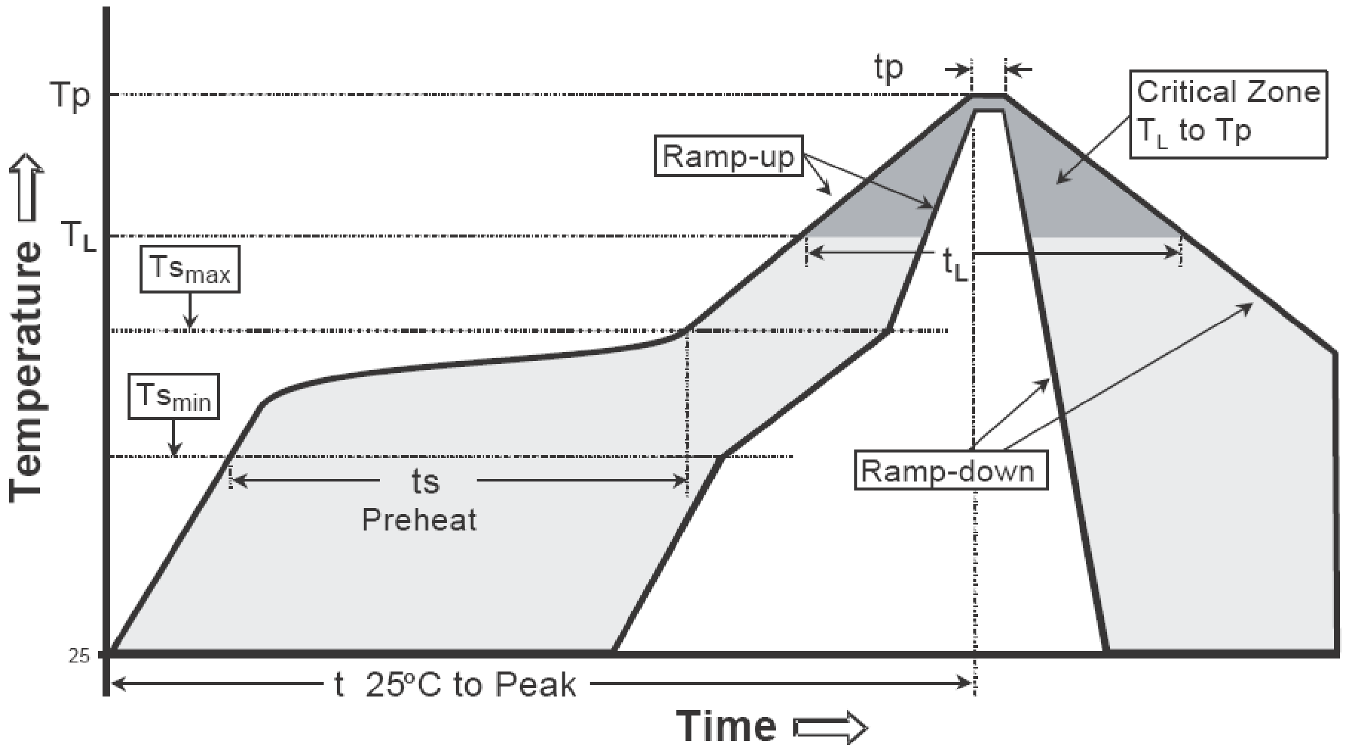




Recommended wave soldering condition

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

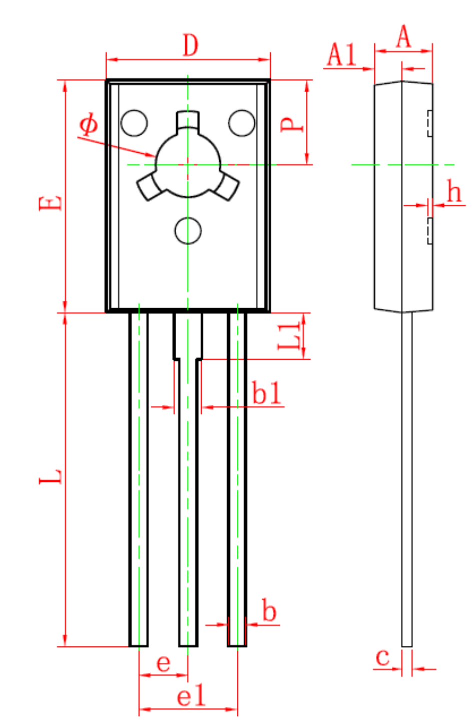
Recommended temperature profile for IR reflow



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.

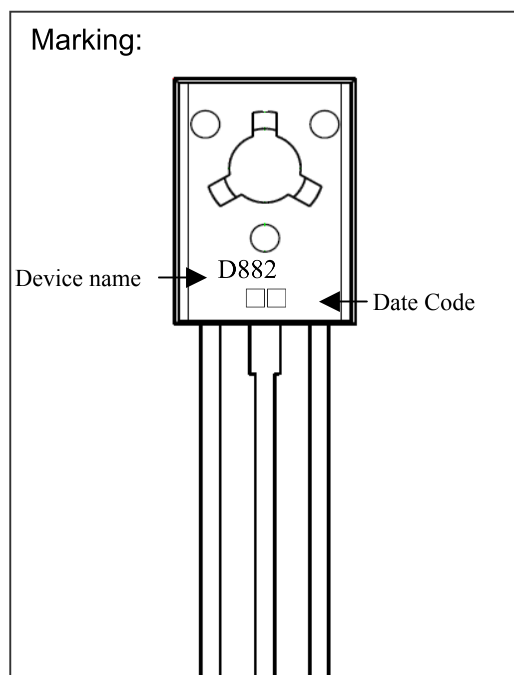
TO-126 Dimension



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

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

Marking:



Date Code : Year Code + Month Code
Year Code : 2011→1, 2012→2,…, 2020→0,
2021→1, 2022→2, …, etc
Month Code : Jan →1, Feb → 2,…, Sep→9,
Oct→A, Nov→B, Dec→C

*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	2.500	2.900	0.098	0.114	e	*2.290		*0.090	
A1	1.100	1.500	0.043	0.059	e1	4.480	4.680	0.176	0.184
b	0.660	0.860	0.026	0.034	h	0.000	0.300	0.000	0.012
b1	1.170	1.370	0.046	0.054	L	15.300	15.700	0.602	0.618
c	0.450	0.600	0.018	0.024	L1	2.100	2.300	0.083	0.091
D	7.400	7.800	0.291	0.307	P	3.900	4.100	0.154	0.161
E	10.600	11.000	0.417	0.433	Φ	3.000	3.200	0.118	0.126

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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