Low Vcesat NPN Epitaxial Planar Transistor

BTD882I3

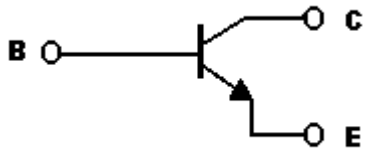
BV_{CEO}	30V
I_C	3A
R_{CESAT}	125mΩ typ.

Features

- Low V_{CE}(sat), typically 0.25V at I_C / I_B = 2A / 0.2A
- Excellent current gain characteristics
- Complementary to BTB772I3
- RoHS compliant package

Symbol

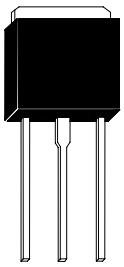
BTD882I3



B：Base
C：Collector
E：Emitter

Outline

TO-251



B C E

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)	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%.

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}=3V, 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

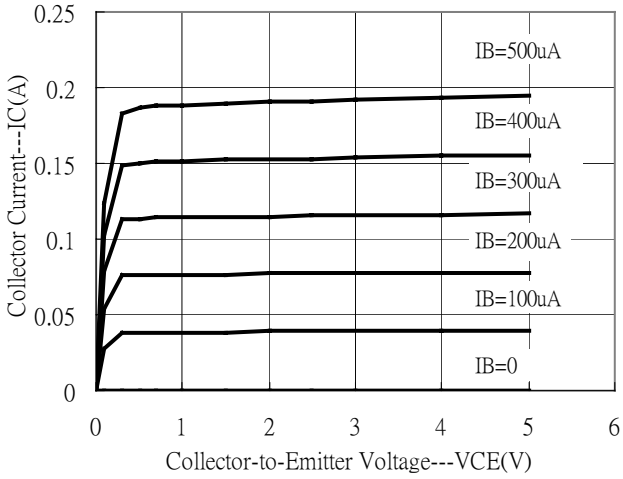
Rank	P	E
Range	180~390	270~560

Ordering Information

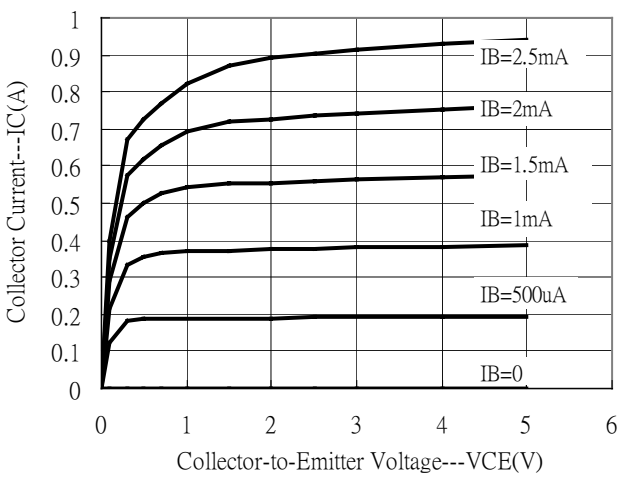
Device	Package	Shipping	Marking
BTD882I3	TO-251 (RoHS compliant)	80 pcs / tube, 50 tubes/box, 10 boxes/carton	D882

Characteristic Curves

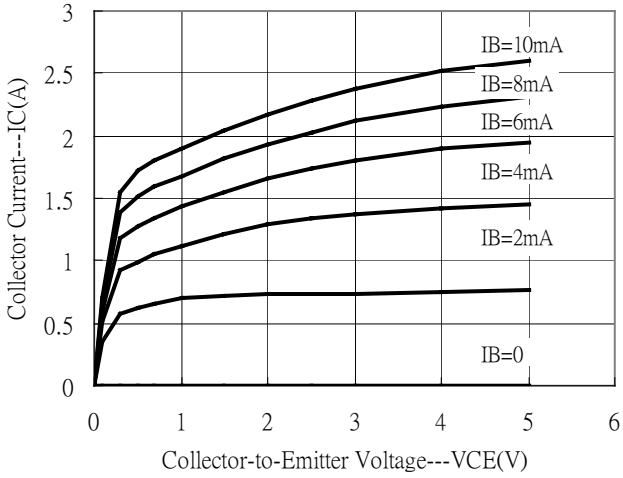
Emitter Grounded Output Characteristics



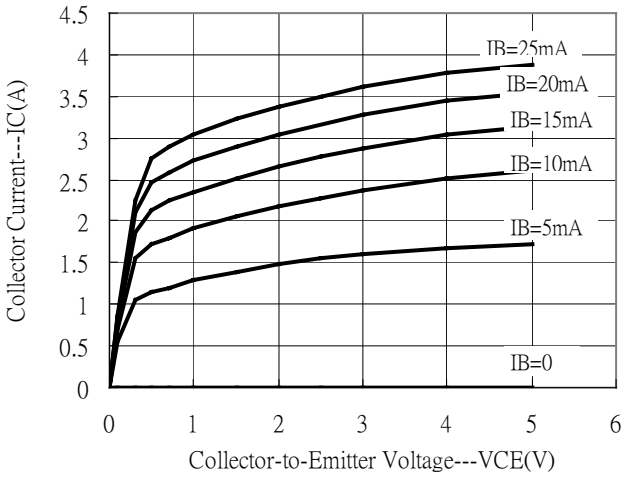
Emitter Grounded Output Characteristics



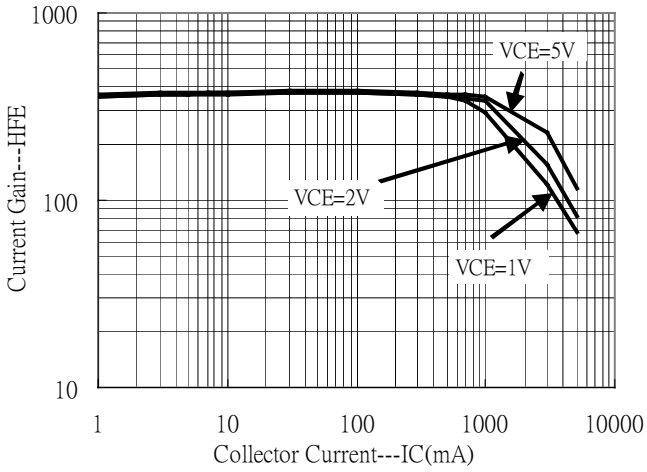
Emitter Grounded Output Characteristics



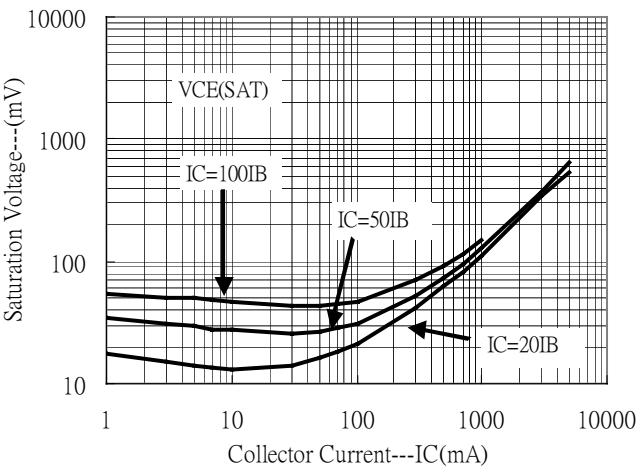
Emitter Grounded Output Characteristics



Current Gain vs Collector Current

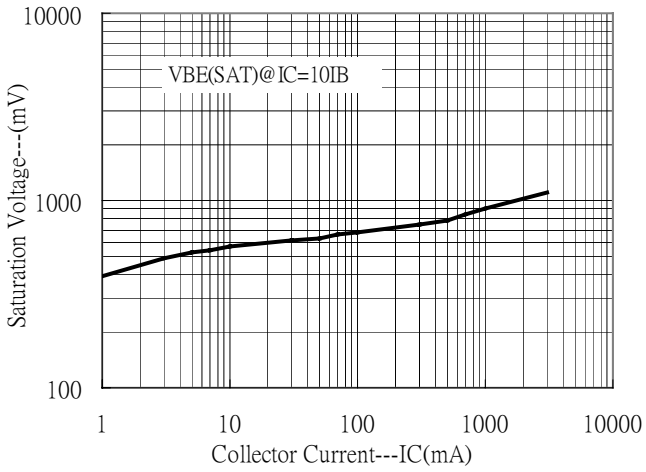


Saturation Voltage vs Collector Current

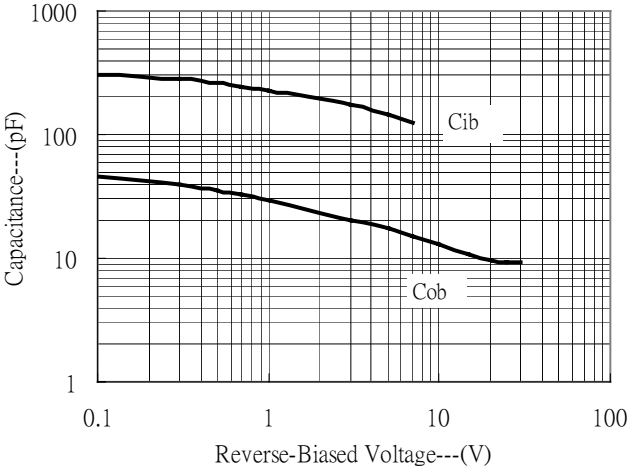


Characteristic Curves(Cont.)

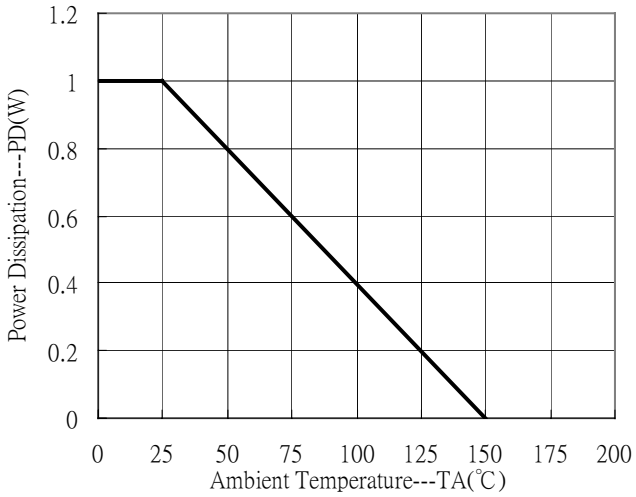
Saturation Voltage vs Collector Current



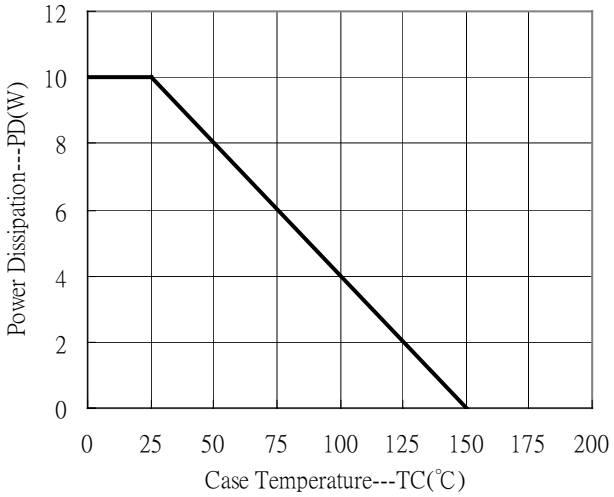
Capacitance vs Reverse-Biased Voltage



Power Derating Curve



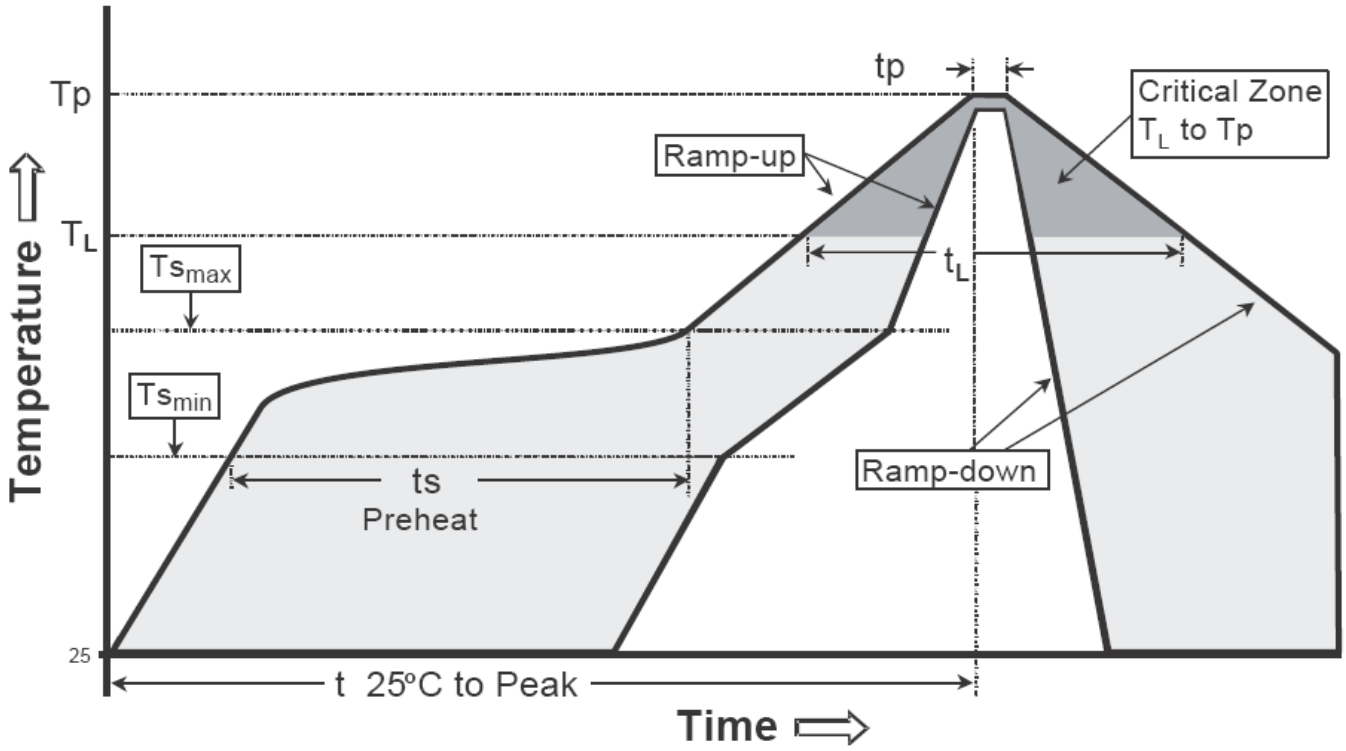
Power Derating Curve



Recommended wave soldering condition

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

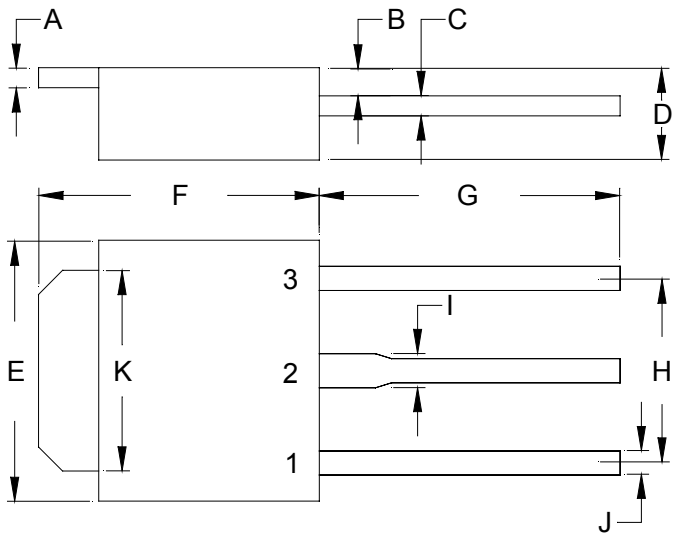
Recommended temperature profile for IR reflow

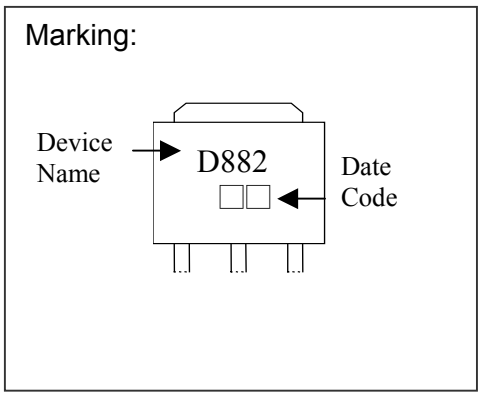


Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(Ts min) −Temperature Max(Ts max) −Time(ts min to ts max)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (TL) − 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-251 Dimension





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

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

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0177	0.0217	0.45	0.55	G	0.2559	-	6.50	-
B	0.0354	0.0591	0.90	1.50	H	-	*0.1811	-	*4.60
C	0.0177	0.0236	0.45	0.60	I	-	0.0449	-	1.14
D	0.0866	0.0945	2.20	2.40	J	-	0.0346	-	0.88
E	0.2441	0.2677	6.20	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2677	0.2835	6.80	7.20					

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