Low Vcesat PNP Epitaxial Planar Transistor

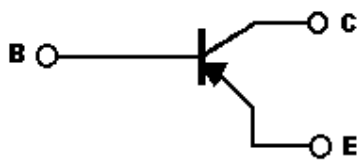
BTB1412J3

Features

- Low V_{CE}(sat), V_{CE}(sat)=-0.36 V (typical), at I_C / I_B = -4A / -0.1A
- Excellent DC current gain characteristics
- Complementary to BTD2118J3
- Pb-free package

Symbol

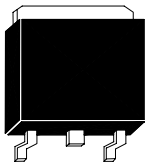
BTB1412J3



B：Base
C：Collector
E：Emitter

Outline

TO-252



B C E

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	$I_{C(DC)}$	-5	A
	$I_{C(Pulse)}$	-10 *1	
Power Dissipation	Pd(T_A=25℃)	1	W
	Pd(T_C=25℃)	10	
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : *1. Single Pulse Pw=10ms

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}	-6	-	-	V	I_E=-50μA, I_C=0
I_{CBO}	-	-	-0.5	μA	V_{CB}=-25V, I_E=0
I_{EBO}	-	-	-0.5	μA	V_{EB}=-5V, I_C=0
*$V_{CE(sat)}$	-	-	-0.5	V	I_C=-4A, I_B=-0.1A
*h_{FE}	180	-	390	-	V_{CE}=-2V, I_C=-0.5A
f_T	-	120	-	MHz	V_{CE}=-6V, I_C=-50mA, f=30MHz
Cob	-	60	-	pF	V_{CB}=-20V, f=1MHz

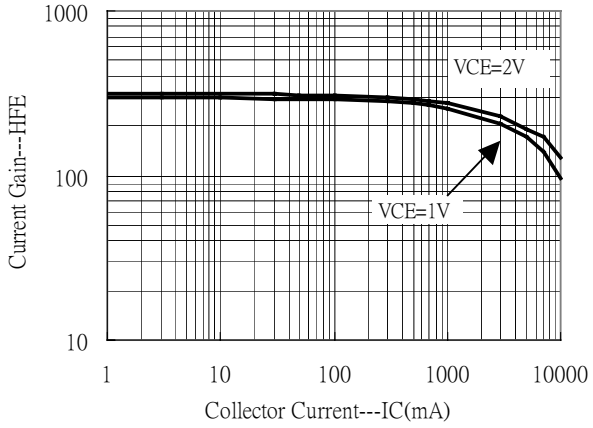
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Ordering Information

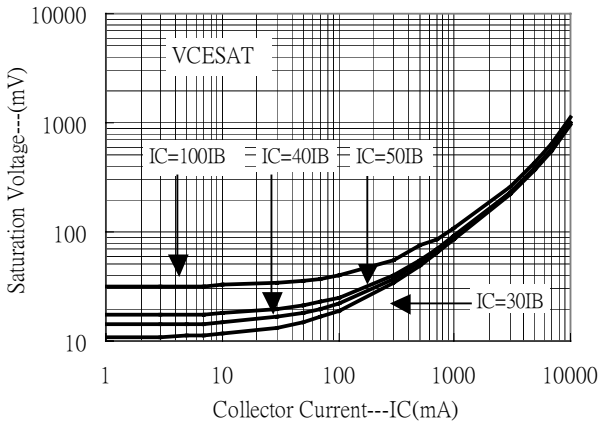
Device	Package	Shipping	Marking
BTB1424J3	TO-252 (Pb-free)	2500 pcs / Tape & Reel	B1412

Characteristic Curves

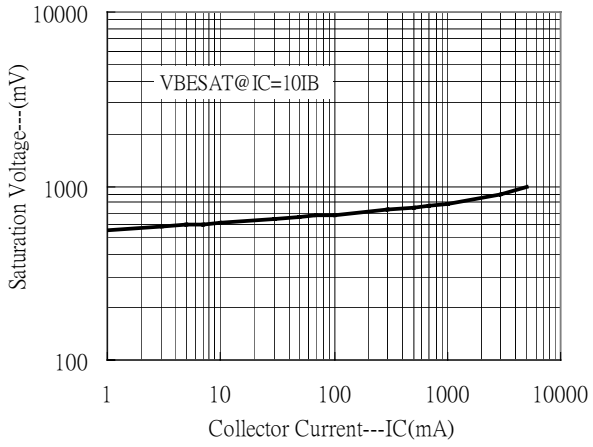
Current Gain vs Collector Current



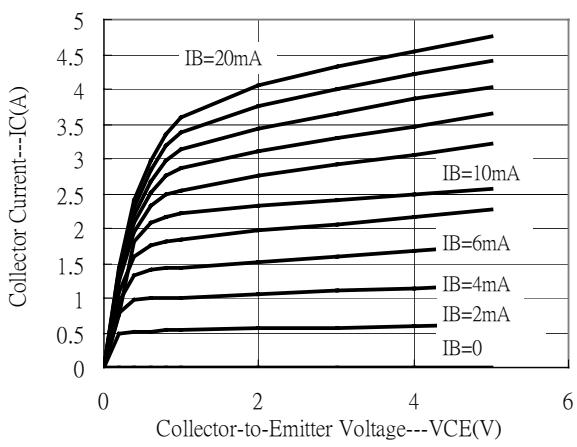
Saturation Voltage vs Collector Current



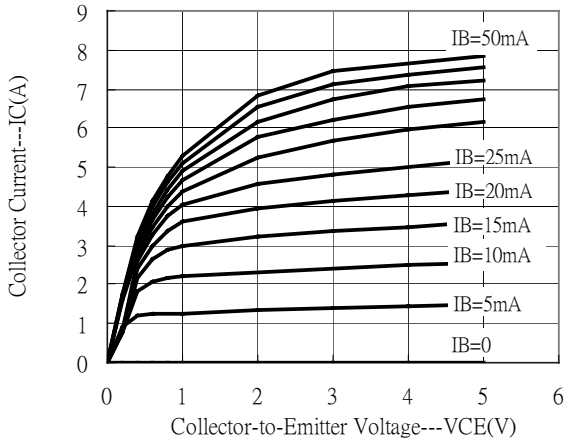
Saturation Voltage vs Collector Current



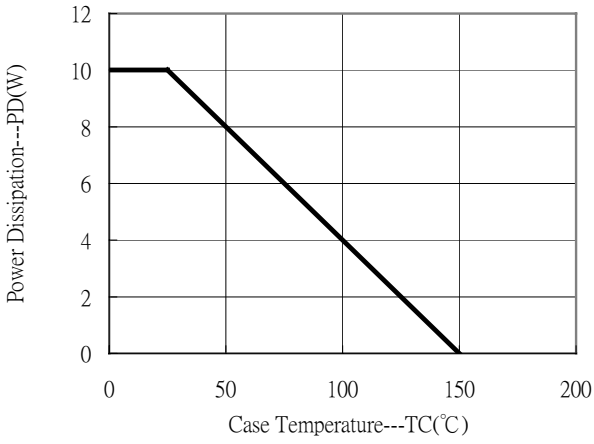
Output Characteristics



Output Characteristics

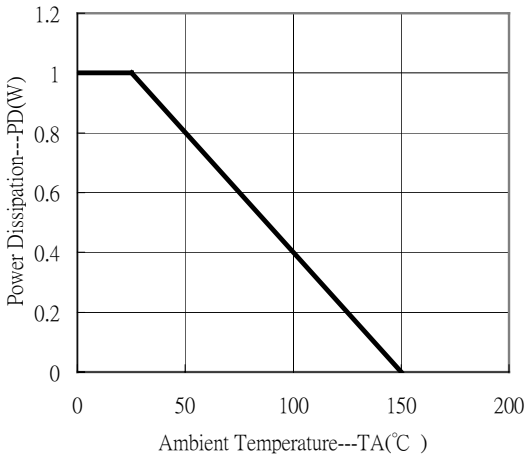


Power Derating Curve

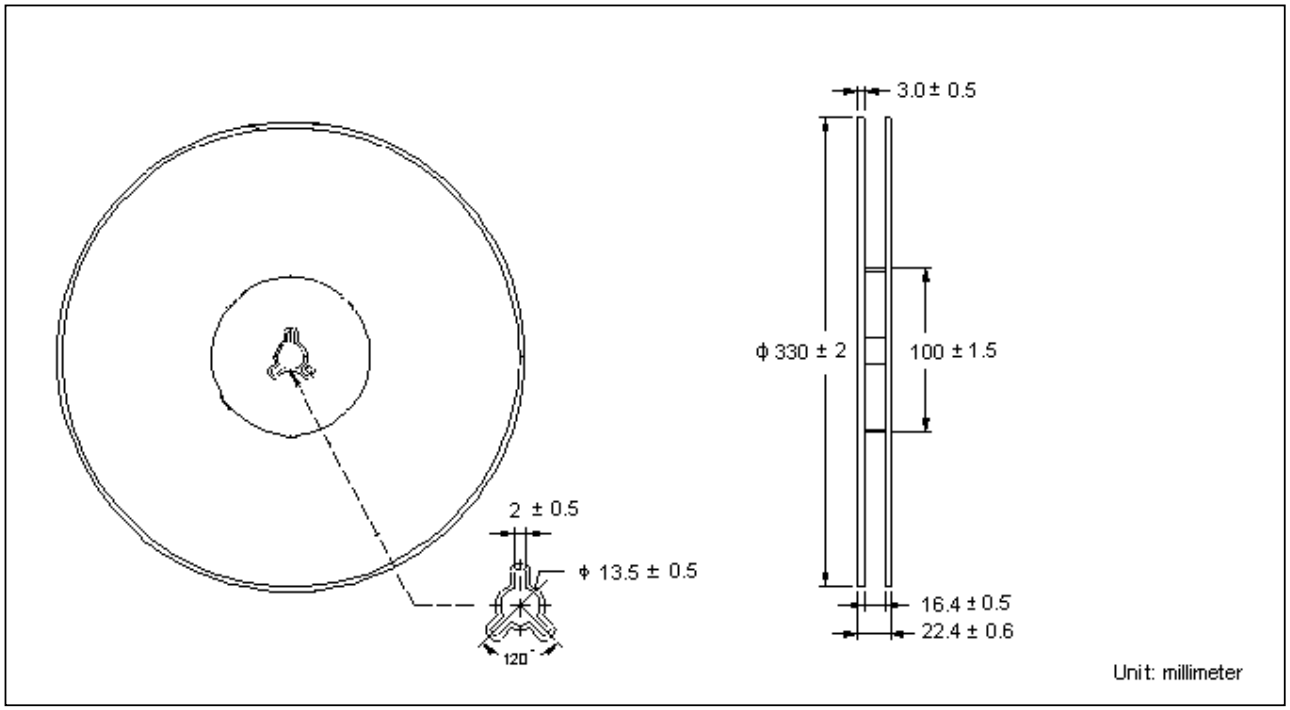


Characteristic Curves(Cont.)

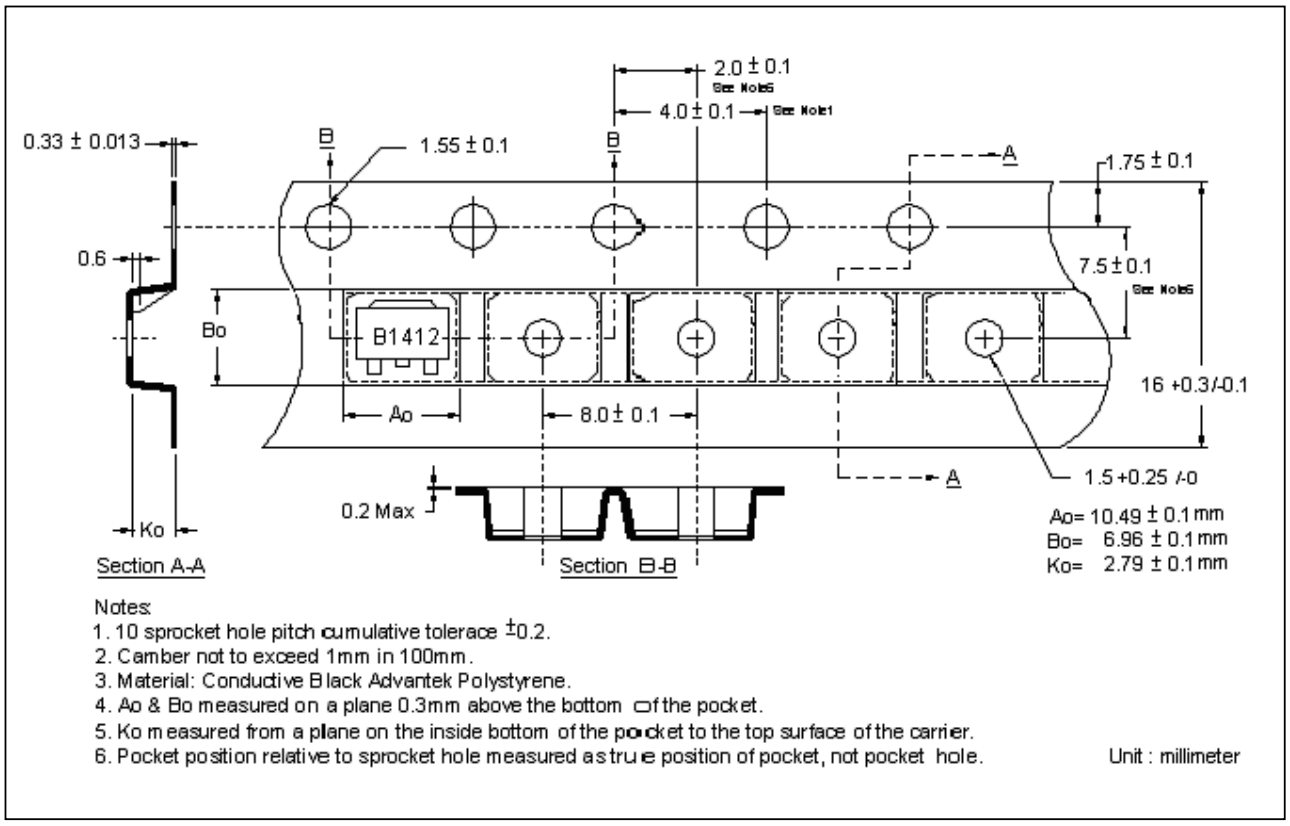
Power Derating Curve



Reel Dimension



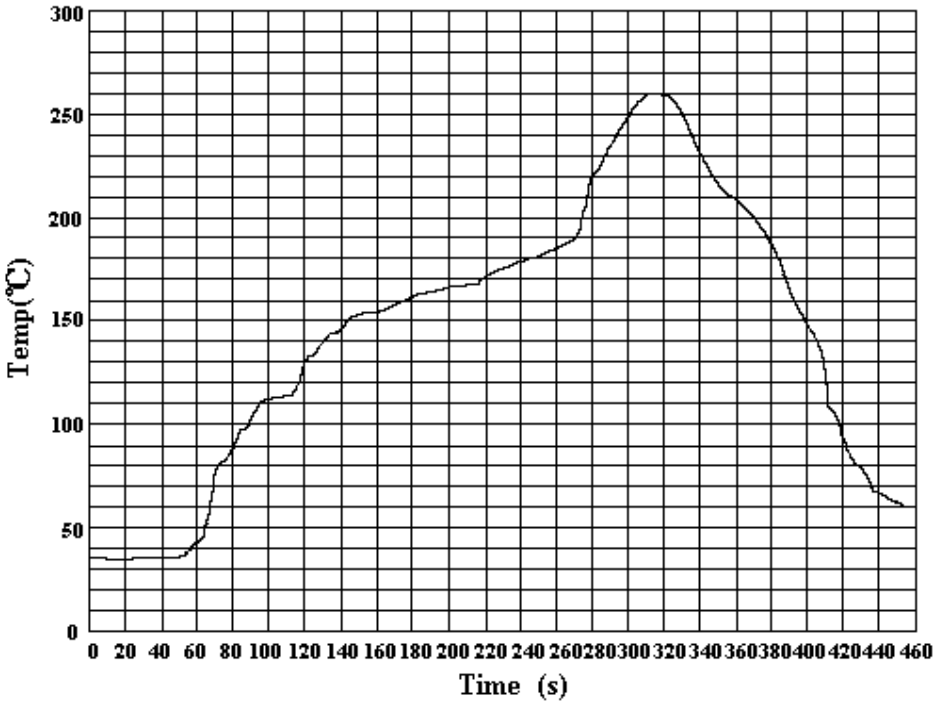
Carrier Tape Dimension



Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

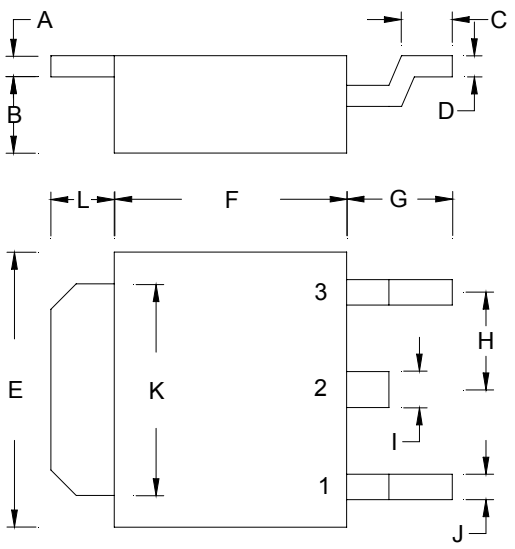
Unit : millimeter

Recommended IR reflow temperature profile

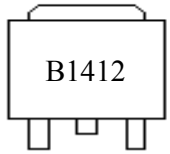


Average ramp-up rate(25 to 150℃)	1~4 ℃/second
Preheat temperature 150~180℃	60~90 seconds
Temperature maintained above 220℃	30 seconds min.
Time within 5℃ of actual peak temperature	3~5 seconds
Peak temperature range	255+0/-5℃
Ramp-down rate	2~10 ℃/second
Time 25℃ to peak temperature	6 minutes max.

TO-252 Dimension



Marking:



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

3-Lead TO-252 Plastic Surface Mount Package
CYStek Package Code: J3

*: 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	0.0866	0.1102	2.20	2.80
B	0.0650	0.0768	1.65	1.95	H	-	*0.0906	-	*2.30
C	0.0354	0.0591	0.90	1.50	I	-	0.0354	-	0.90
D	0.0177	0.0236	0.45	0.60	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2125	0.2283	5.40	5.80	L	0.0551	0.0630	1.40	1.60

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