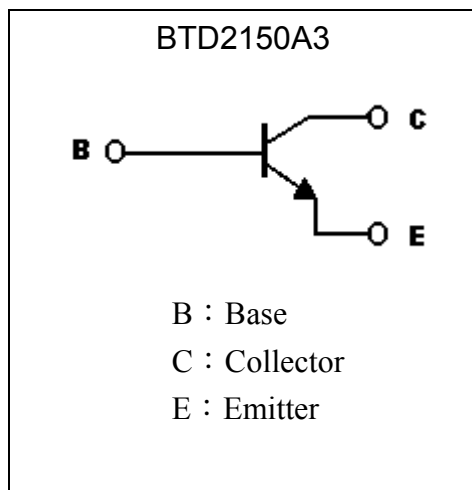
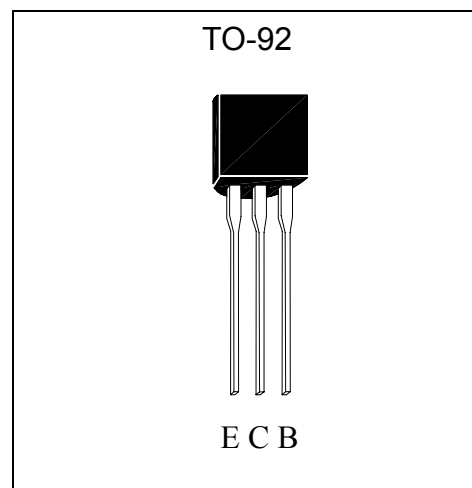


Low Vcesat NPN Epitaxial Planar Transistor

BTD2150A3

Features

- Low $V_{CE(sat)}$, typically 0.25V at $I_C / I_B = 2A / 100mA$
0.1V at $I_C / I_B = 1A / 50mA$
- Excellent current gain characteristics
- Complementary to BTB1424A3
- Pb-free package

Symbol

Outline

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	$I_C(DC)$	3	A
	$I_C(Pulse)$	7 (Note)	A
Power Dissipation	P_d	750	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^\circ\text{C}$

 Note : *1. Single Pulse $P_w \leq 350\mu\text{s}$, Duty $\leq 2\%$.



Characteristics (Ta=25°C)

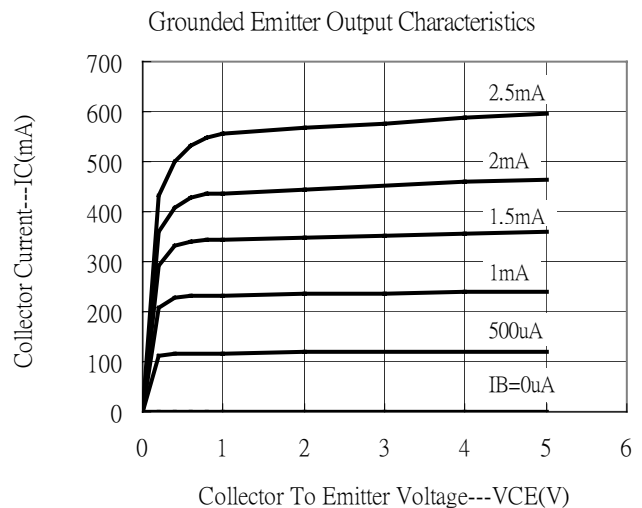
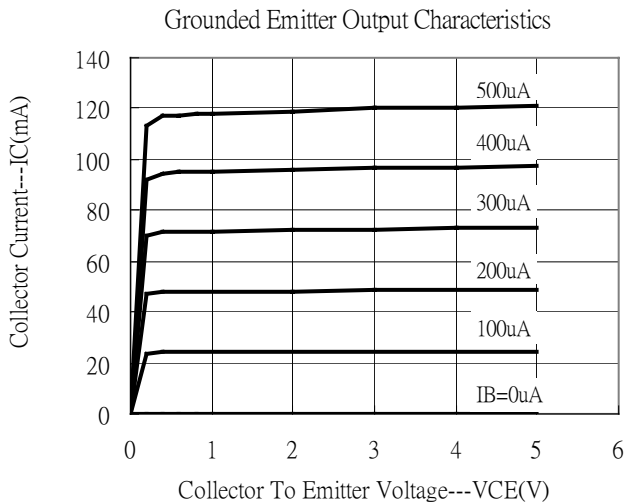
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	80	-	-	V	I _C =50μA, I _E =0
BV _{CE0}	50	-	-	V	I _C =1mA, I _B =0
BV _{EB0}	6	-	-	V	I _E =50μA, I _C =0
I _{CB0}	-	-	100	nA	V _{CB} =60V, I _E =0
I _{EB0}	-	-	100	nA	V _{EB} =5V, I _C =0
*V _{CE(sat)}	-	0.1	0.25	V	I _C =1A, I _B =50mA
*V _{CE(sat)}	-	0.25	0.5	V	I _C =2A, I _B =100mA
*V _{BE(sat)}	-	-	1.5	V	I _C =2A, I _B =200mA
*h _{FE1}	180	-	-	-	V _{CE} =2V, I _C =100mA
*h _{FE2}	180	-	820	-	V _{CE} =2V, I _C =500mA
*h _{FE3}	150	-	-	-	V _{CE} =2V, I _C =1A
f _T	-	90	-	MHz	V _{CE} =5V, I _C =100mA, f=100MHz
Cob	-	45	-	pF	V _{CB} =10V, f=1MHz

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

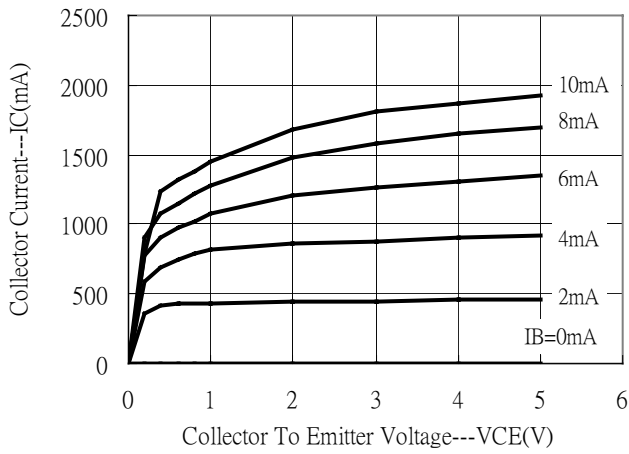
Classification Of h_{FE2}

Rank	R	S	T
Range	180~290	270~560	390~820

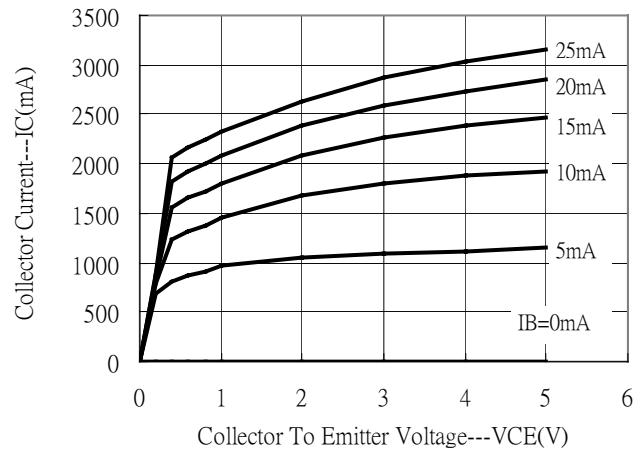
Characteristic Curves



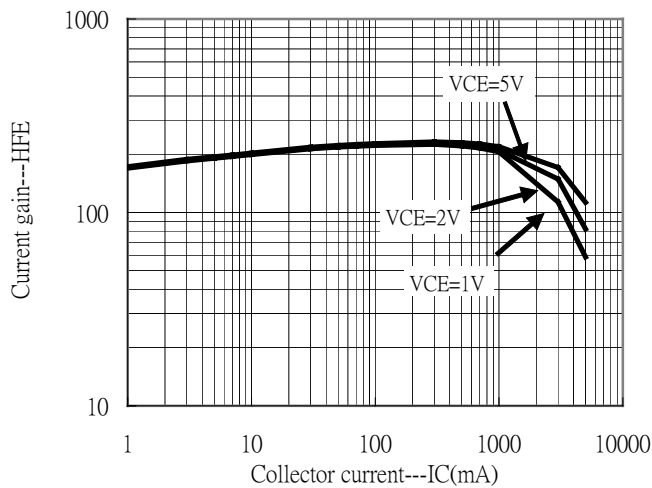
Grounded Emitter Output Characteristics



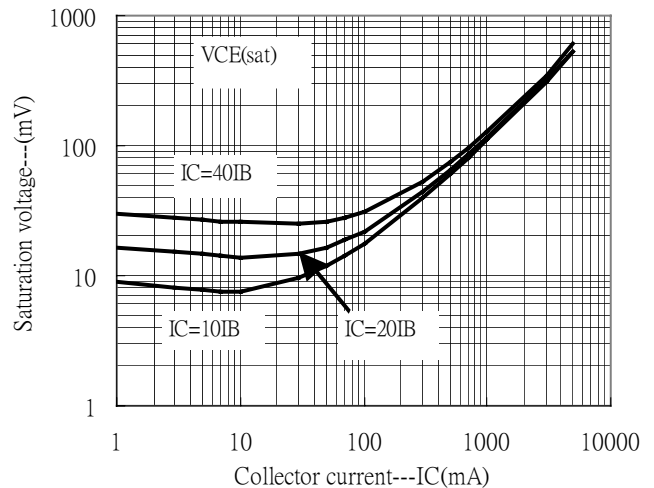
Grounded Emitter Output Characteristics



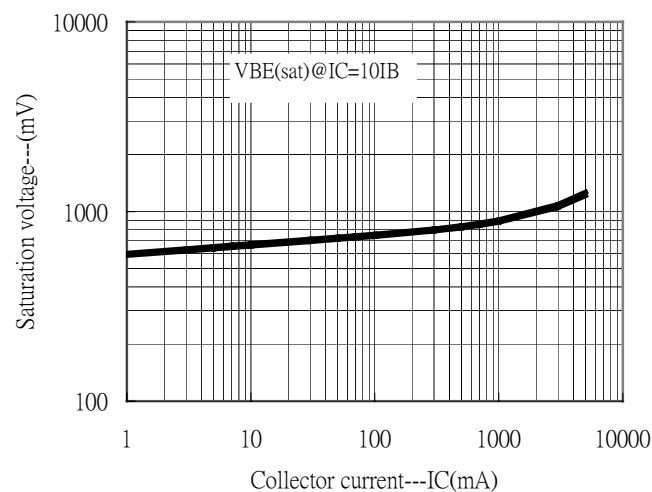
Current gain vs Collector current



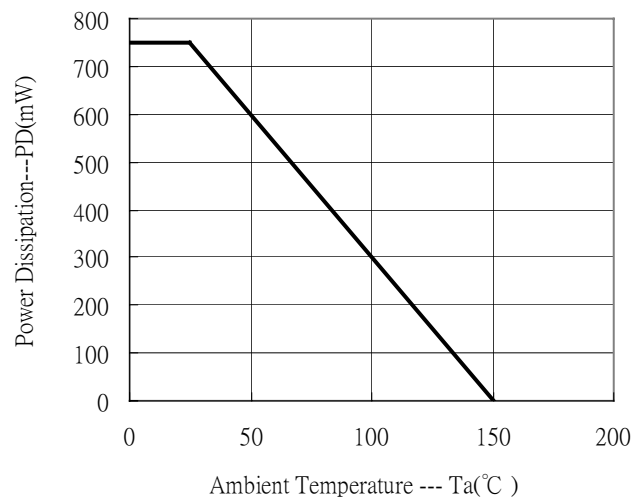
Saturation voltage vs Collector current



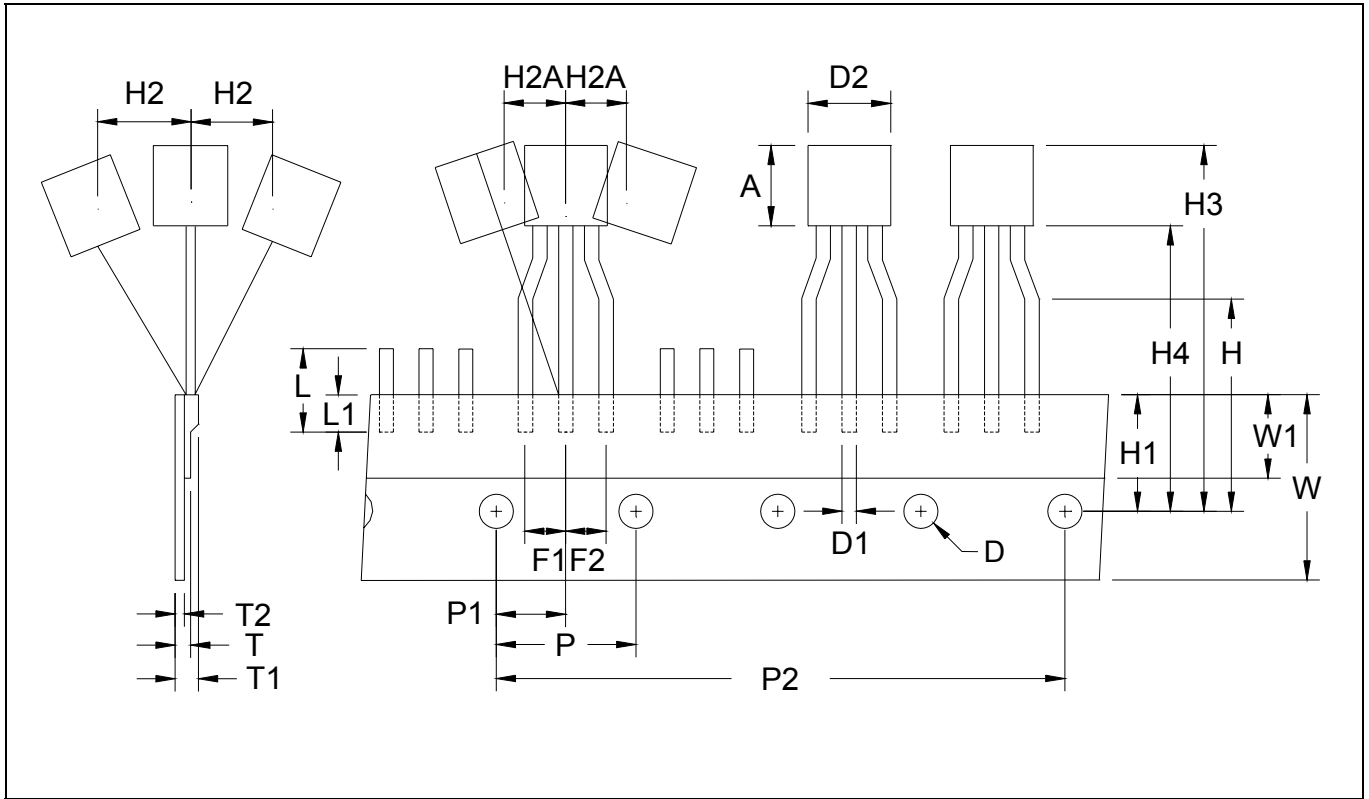
Saturation voltage vs Collector current



Power Derating Curve

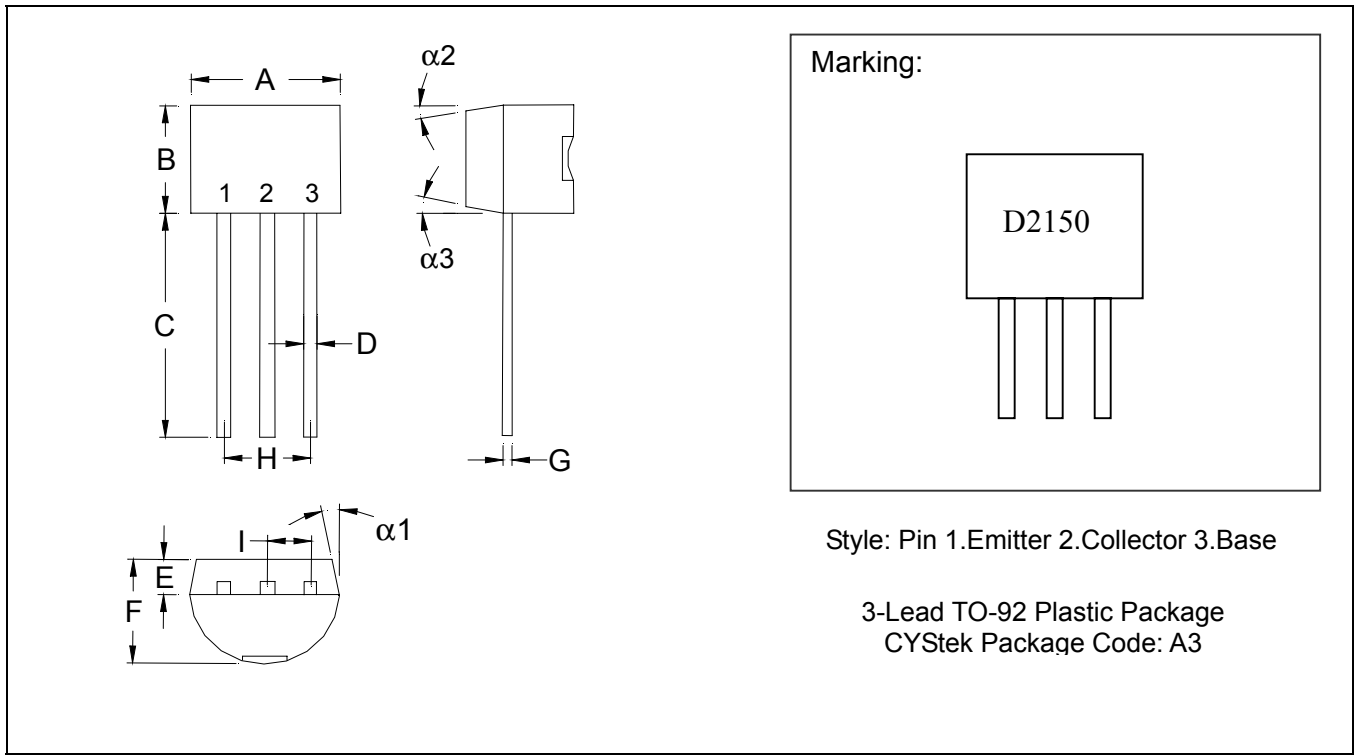


TO-92 Taping Outline



DIM	Item	Millimeters	
		Min.	Max.
A	Component body height	4.33	4.83
D	Tape Feed Diameter	3.80	4.20
D1	Lead Diameter	0.36	0.53
D2	Component Body Diameter	4.33	4.83
F1,F2	Component Lead Pitch	2.40	2.90
F1,F2	F1-F2	-	±0.3
H	Height Of Seating Plane	15.50	16.50
H1	Feed Hole Location	8.50	9.50
H2	Front To Rear Deflection	-	1
H2A	Deflection Left Or Right	-	1
H3	Component Height	-	27
H4	Feed Hole To Bottom Of Component	-	21
L	Lead Length After Component Removal	-	11
L1	Lead Wire Enclosure	2.50	-
P	Feed Hole Pitch	12.50	12.90
P1	Center Of Seating Plane Location	5.95	6.75
P2	4 Feed Hole Pitch	50.30	51.30
T	Over All Tape Thickness	-	0.55
T1	Total Taped Package Thickness	-	1.42
T2	Carrier Tape Thickness	0.36	0.68
W	Tape Width	17.50	19.00
W1	Adhesive Tape Width	5.00	7.00
-	20 pcs Pitch	253	255

TO-92 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	$\alpha 1$	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	$\alpha 2$	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	$\alpha 3$	-	*2°	-	*2°

- 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

Important Notice:

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of CYStek.
- CYStek reserves the right to make changes to its products without notice.
- CYStek **semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- CYStek assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.