NPN Epitaxial Planar Transistor

BTD5510F3

Description

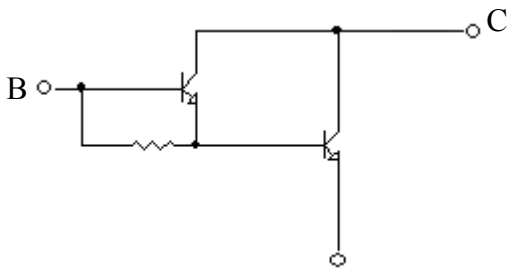
The BTD5510F3 is a NPN Darlington transistor, designed for general purpose amplifier and low speed switching application.

Features:

- High BV_{CEO}
- Low $V_{CE(SAT)}$
- High current gain
- Monolithic construction with built-in base-emitter shunt resistors
- Pb-free package

Equivalent Circuit

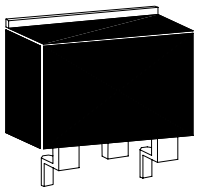
BTD5510F3



B：Base
C：Collector
E：Emitter

Outline

TO-263-3L



B C E

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	250	V
Collector-Emitter Voltage	V_{CEO}	250	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	15	A
Power Dissipation	Pd(T_A=25℃)	2	W
	Pd(T_C=25℃)	60	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.08	°C/W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : *1. Single Pulse Pw=100ms

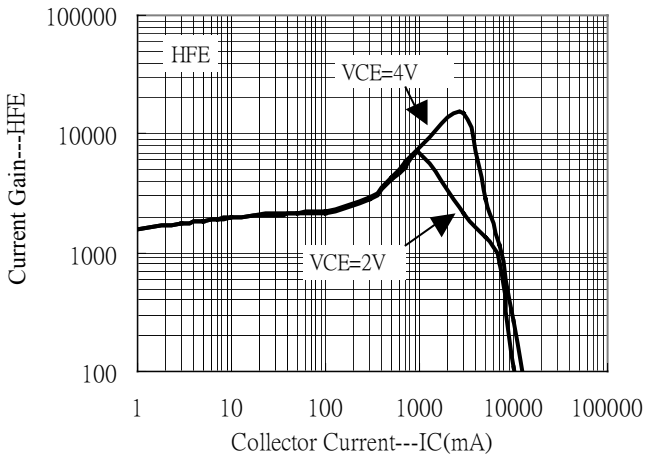
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	250	-	-	V	I_C=100μA, I_E=0
BV_{CEO}	250	-	-	V	I_C=1mA, I_B=0
I_{CEO}	-	-	100	μA	V_{CE}=250V, I_E=0
I_{CBO}	-	-	100	μA	V_{CB}=250V, I_E=0
I_{EBO}	-	-	5	mA	V_{EB}=5V, I_C=0
*$V_{CE(sat)}$ 1	-	-	780	mV	I_C=200mA, I_B=300uA
*$V_{CE(sat)}$ 2	-	-	1.4	V	I_C=10A, I_B=250mA
*$V_{CE(sat)}$ 3	-	-	1.3	V	I_C=7A, I_B=50mA
*$V_{CE(sat)}$ 4	-	-	1.2	V	I_C=5A, I_B=20mA
*$V_{CE(sat)}$ 5	-	-	1.1	V	I_C=4A, I_B=5mA
*$V_{BE(sat)}$	-	-	2	V	I_C=8A, I_B=15mA
*$V_{BE(on)}$	-	-	1.8	V	V_{CE}=4V, I_C=8A
*h_{FE}	1000	-	-	-	V_{CE}=10V, I_C=5A

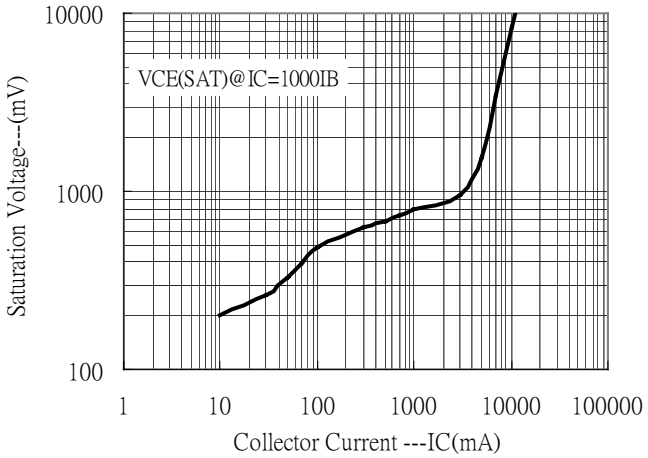
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Characteristic Curves

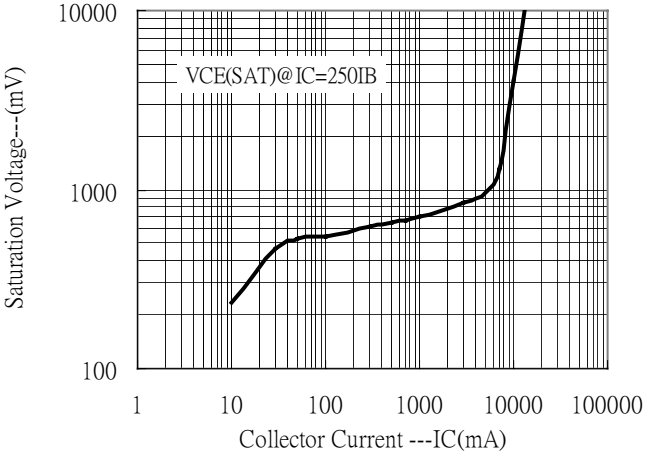
Current Gain vs Collector Current



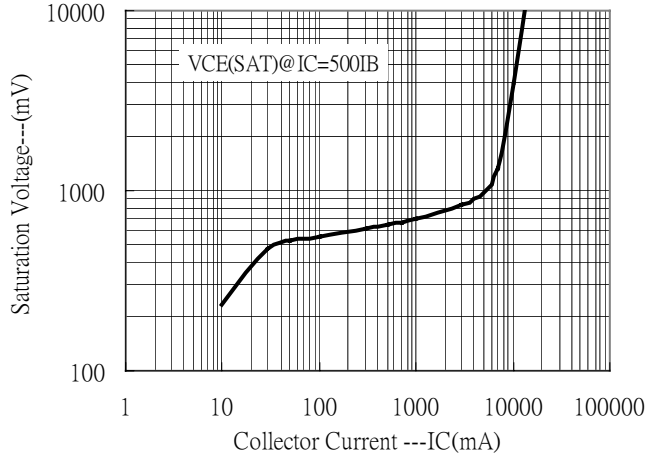
Saturation Voltage vs Collector Current



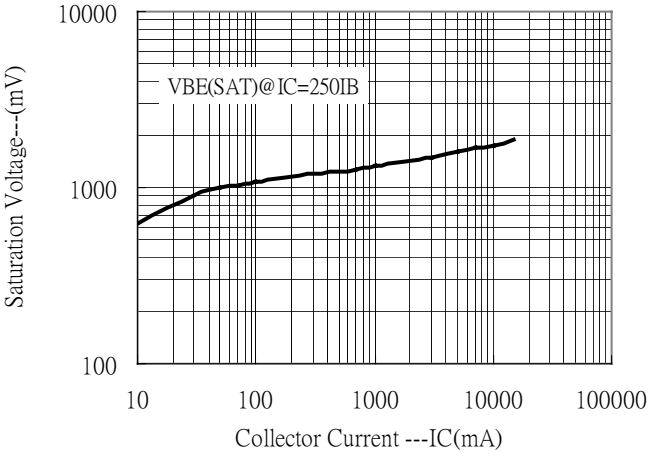
Saturation Voltage vs Collector Current



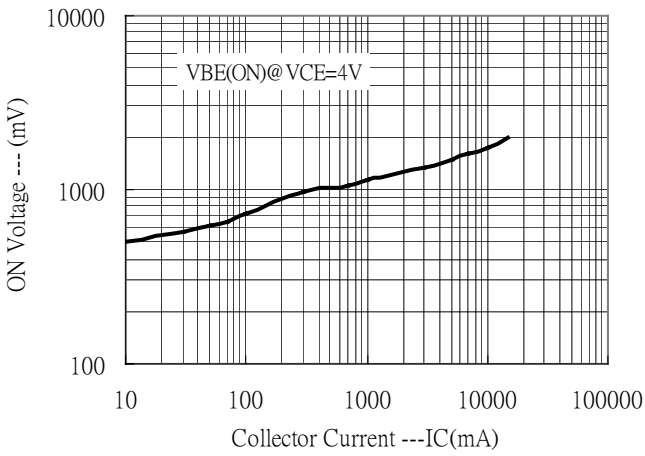
Saturation Voltage vs Collector Current



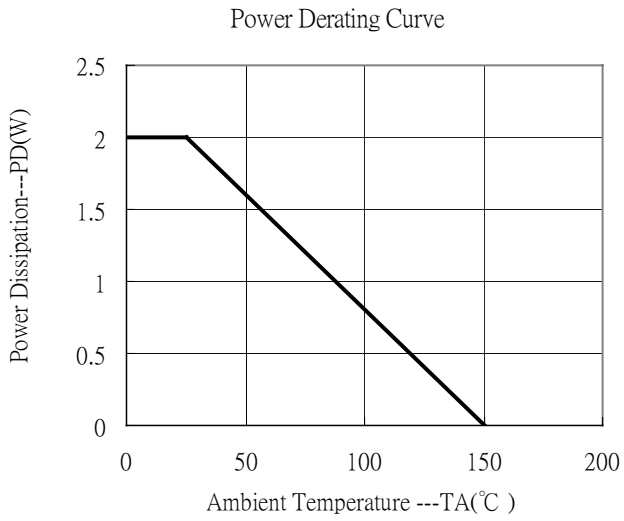
Saturation Voltage vs Collector Current

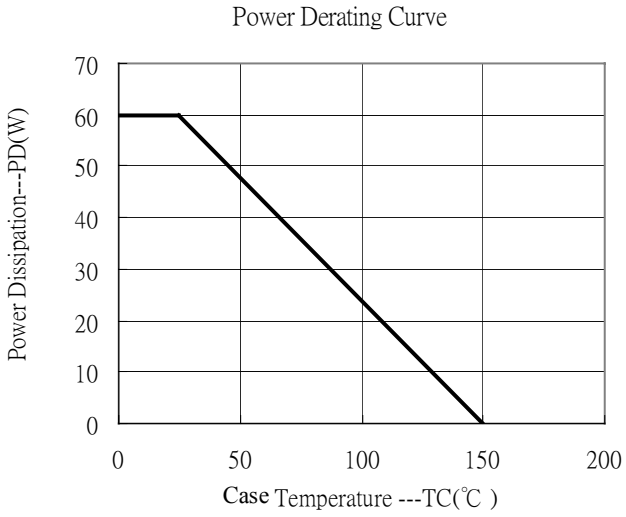


ON Voltage vs Collector Current

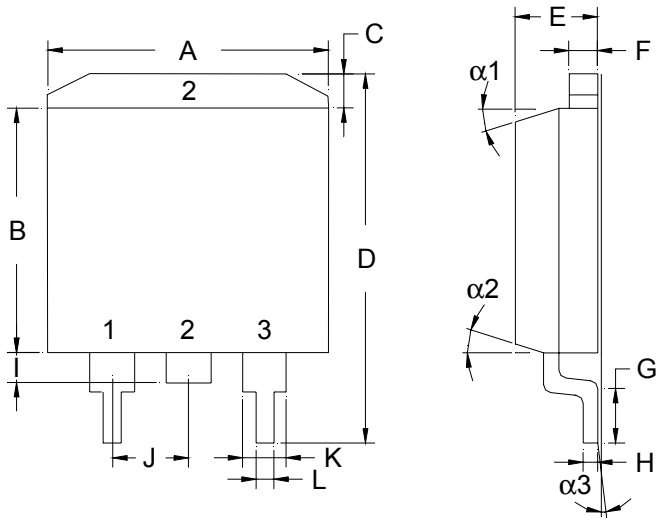


Characteristic Curves(Cont.)

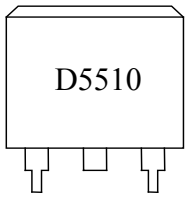




TO-263 Dimension



Marking :



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

3-Lead Plastic Surface Mounted Package
CYStek Package Code : F3

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.3800	0.4050	9.65	10.29	I	0.0500	0.0700	1.27	1.78
B	0.3300	0.3700	8.38	9.40	J	-	*0.1000	-	*2.54
C	-	0.0550	-	1.40	K	0.0450	0.0550	1.14	1.40
D	0.5750	0.6250	14.61	15.88	L	0.0200	0.0390	0.51	0.99
E	0.1600	0.1900	4.06	4.83	α1	-	-	6°	8°
F	0.0450	0.0550	1.14	1.40	α2	-	-	6°	8°
G	0.0900	0.1100	2.29	2.79	α3	-	-	0°	5°
H	0.0180	0.0290	0.46	0.74					

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