

Low $V_{CE(sat)}$ NPN Planar Transistor

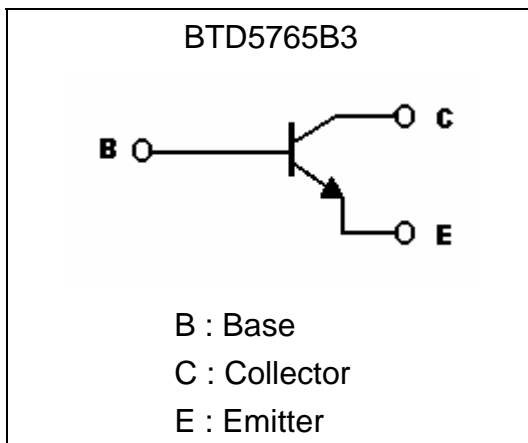
BTD5765B3

Features

- High current capability
- Low collector-to-emitter saturation voltage
- High allowable power dissipation
- Pb-free lead plating and halogen-free package

Applications

- Relay drivers, lamp drivers, motor drivers, strobes

Symbol

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	15	V
Collector-Emitter Voltage	V_{CEO}	10	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current (DC)	I_C	5	A
Collector Current (Pulse)	I_{CP}	9	A
Collector Power Dissipation (Note)	P_D	550	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

Note : when a device is mounted on a glass epoxy board, measuring 35mm×30mm×1mm.



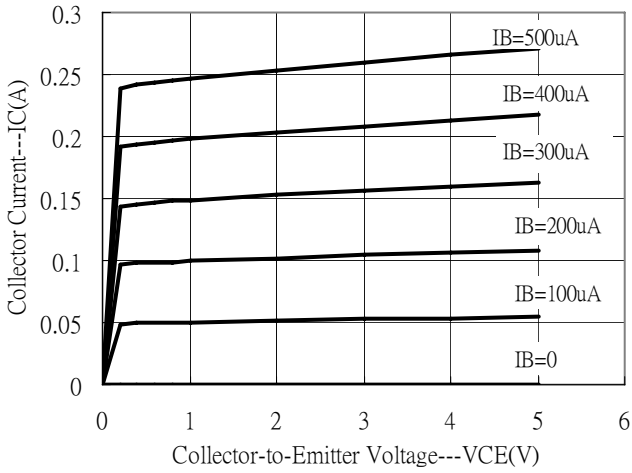
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	15	-	-	V	I _C =100μA, I _E =0
BV _{CEO}	10	-	-	V	I _C =1mA, I _B =0
BV _{EBO}	7	-	-	V	I _E =10μA, I _C =0
I _{CB0}	-	-	100	nA	V _{CB} =15V, I _E =0
I _{EBO}	-	-	100	nA	V _{EB} =5V, I _C =0
*V _{CE(sat)1}	-	-	180	mV	I _C =1.5A, I _B =30mA
*V _{CE(sat)2}	-	230	350	mV	I _C =3A, I _B =60mA
*V _{BE(sat)}	-	-	0.95	1.2V	I _C =1.5A, I _B =30mA
*h _{FE1}	450	-	-	-	V _{CE} =2V, I _C =500mA
*h _{FE2}	400	-	800	-	V _{CE} =2V, I _C =2A
*h _{FE3}	200	-	-	-	V _{CE} =2V, I _C =5A
f _T	-	170	-	MHz	V _{CE} =6V, I _C =50mA, f=100MHz
Cob	-	25	-	pF	V _{CB} =10V, f=1MHz

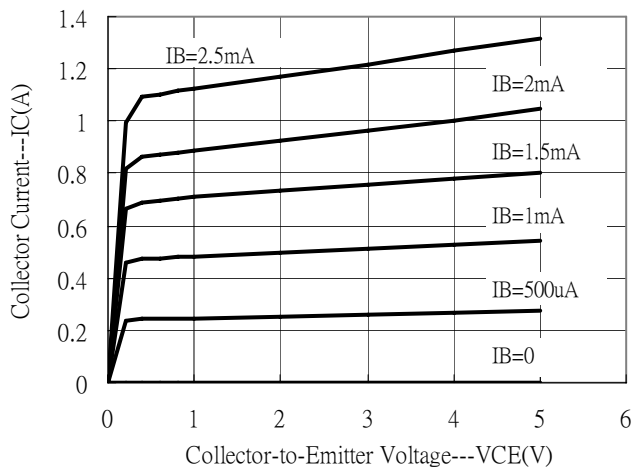
*Pulse Test: Pulse Width ≤380μs, Duty Cycles≤2%

Characteristic Curves

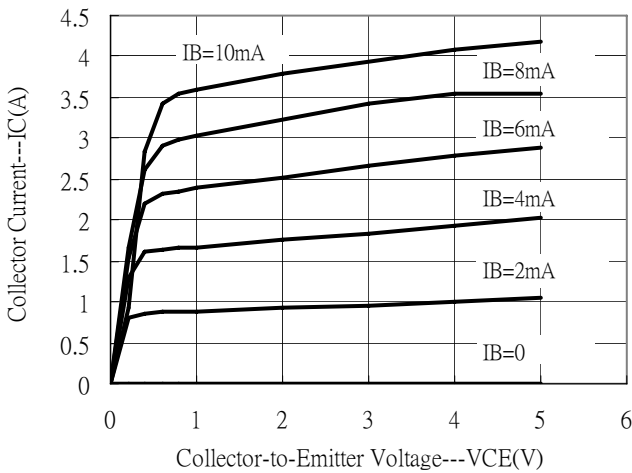
Output Characteristics



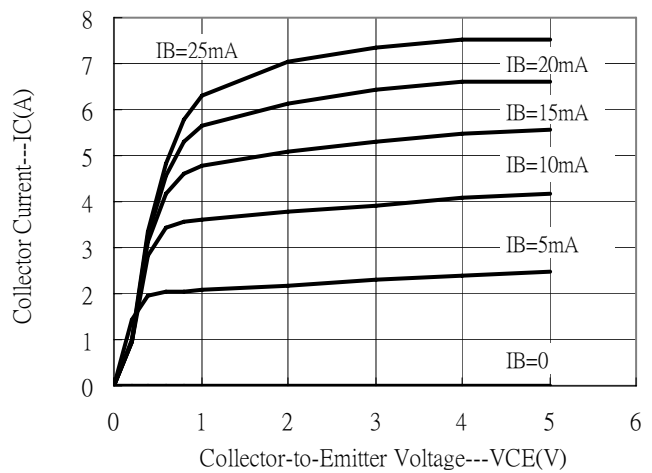
Output Characteristics



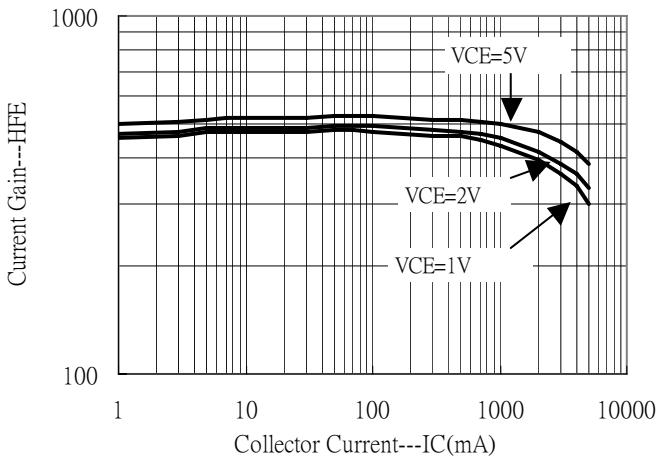
Output Characteristics



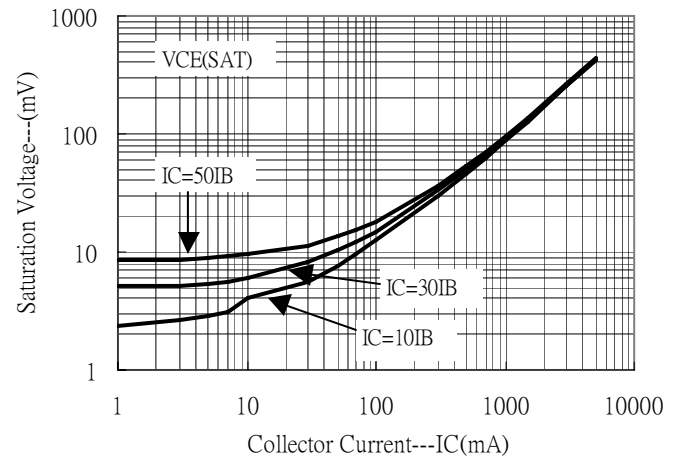
Output Characteristics



Current Gain vs Collector Current

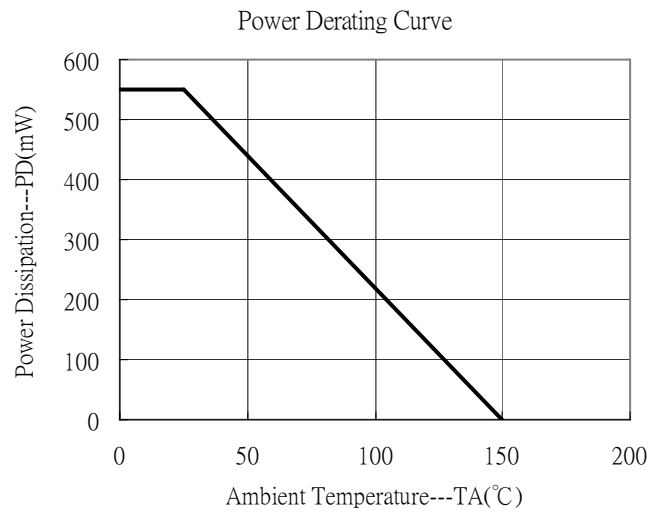
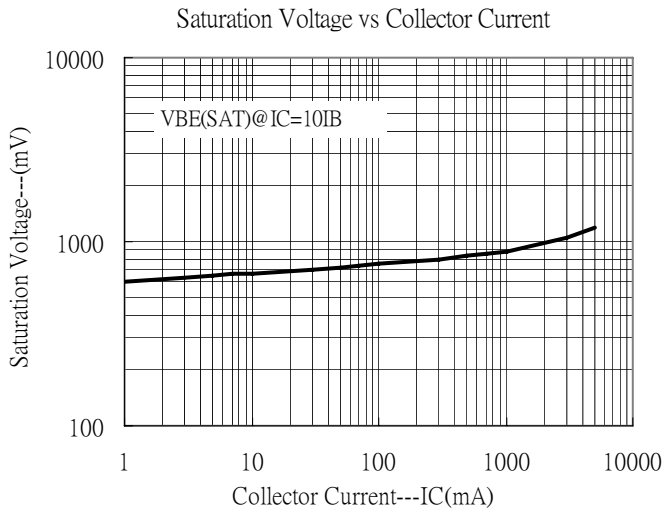


Saturation Voltage vs Collector Current

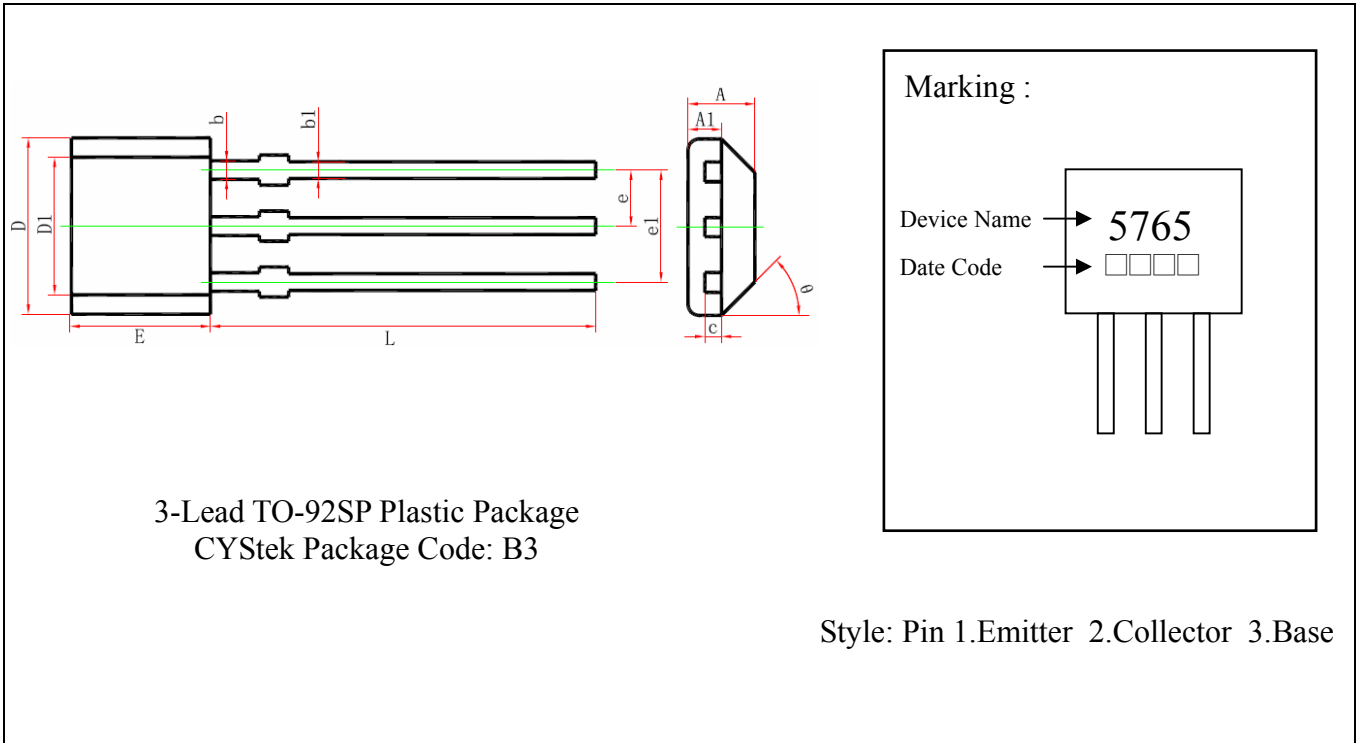




Characteristic Curves(Cont.)



TO-92SP Dimension



3-Lead TO-92SP Plastic Package
 CYStek Package Code: B3

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

*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	1.420	1.620	0.056	0.064	D1	2.970	3.270	0.117	0.129
A1	0.660	0.860	0.026	0.034	E	3.050	3.250	0.120	0.128
b	0.420	0.550	0.017	0.022	e	*1.270		*0.050	
b1	0.360	0.480	0.014	0.019	e1	2.400	2.640	0.096	0.104
c	0.360	0.510	0.014	0.020	L	15.100	15.500	0.594	0.610
D	3.900	4.100	0.154	0.161	θ	*45°		*45°	

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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