

**Low Vcesat PNP Epitaxial Planar Transistor**

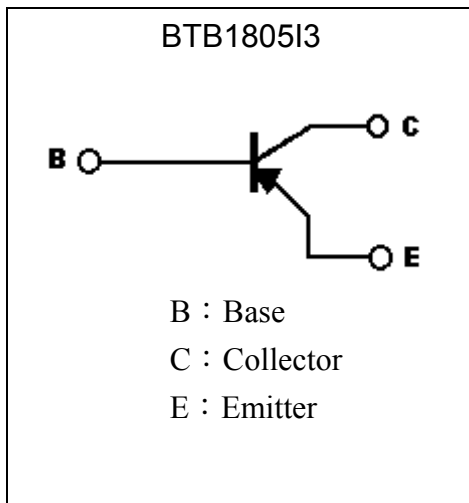
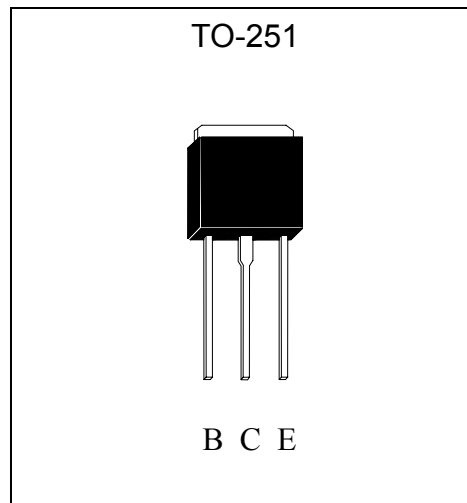
# BTB1205I3

**Features**

- Low  $V_{CE(sat)}$ ,  $V_{CE(sat)} = -0.38$  V (typical), at  $I_C / I_B = -3A / -60mA$
- Excellent DC current gain characteristics
- Fast switching speed
- Large current capacity
- Pb-free package

**Applications**

- Strobe, voltage regulators, relay drivers, lamp drivers

**Symbol****Outline**

**Absolute Maximum Ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-25	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-20	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current(DC)	I <sub>C</sub>	-5	A
Collector Current(Pulse)	I <sub>CP</sub>	-8 (Note 1)	
Base Current	I <sub>B</sub>	-0.5	A
Power Dissipation (T <sub>A</sub> =25°C)	P <sub>d</sub>	1	W
Power Dissipation (T <sub>C</sub> =25°C)	P <sub>d</sub>	10	
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C

Note : 1. Single Pulse Pw=10ms

**Characteristics** (Ta=25°C)

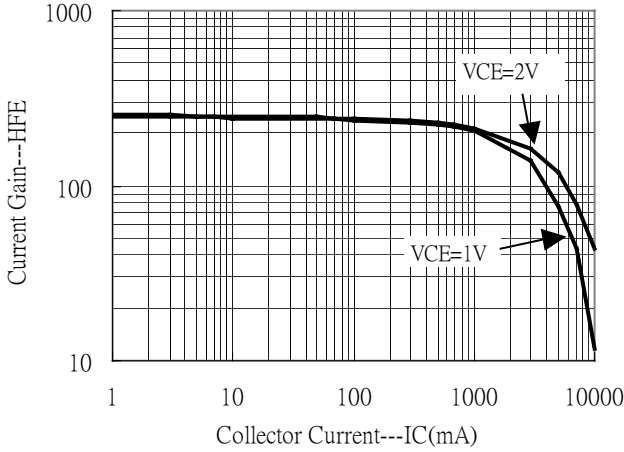
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CBO</sub>	-25	-	-	V	I <sub>C</sub> =-10μA, I <sub>E</sub> =0
BV <sub>CEO</sub>	-20	-	-	V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
BV <sub>EBO</sub>	-5	-	-	V	I <sub>E</sub> =-10μA, I <sub>C</sub> =0
I <sub>CBO</sub>	-	-	-0.5	μA	V <sub>CB</sub> =-20V, I <sub>E</sub> =0
I <sub>EBO</sub>	-	-	-0.5	μA	V <sub>EB</sub> =-4V, I <sub>C</sub> =0
*V <sub>CE(sat)</sub>	-	-380	-500	mV	I <sub>C</sub> =-3A, I <sub>B</sub> =-60mA
*V <sub>BE(sat)</sub>	-	-1.0	-1.3	V	I <sub>C</sub> =-3A, I <sub>B</sub> =-60mA
*h <sub>FE</sub>	190	-	380	-	V <sub>CE</sub> =-2V, I <sub>C</sub> =-0.5A
*h <sub>FE</sub>	60	-	-	-	V <sub>CE</sub> =-2V, I <sub>C</sub> =-4A
f <sub>T</sub>	-	320	-	MHz	V <sub>CE</sub> =-5V, I <sub>C</sub> =-200mA, f=100MHz
C <sub>ob</sub>	-	60	-	pF	V <sub>CB</sub> =-10V, f=1MHz

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

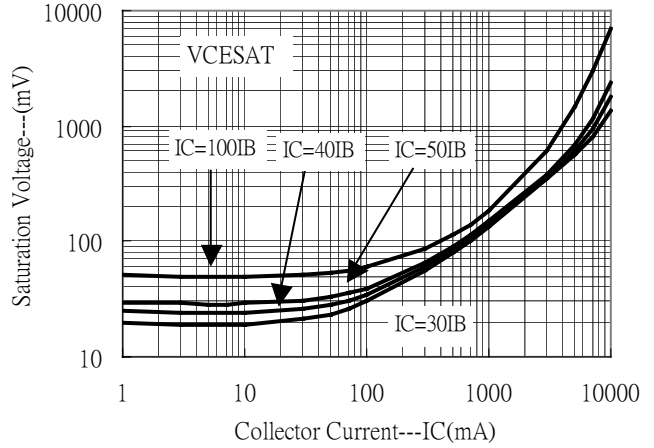


### Characteristic Curves

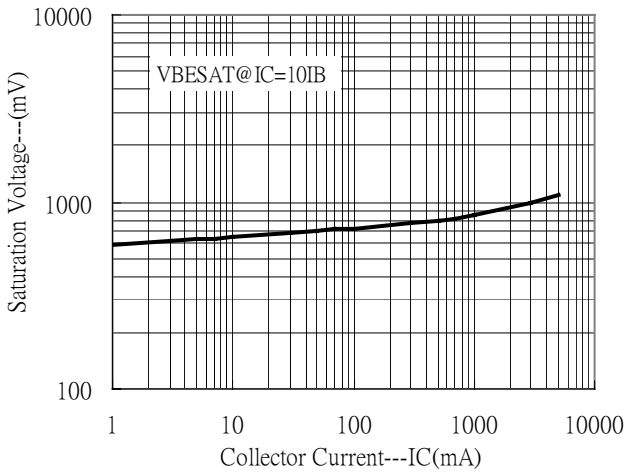
Current Gain vs Collector Current



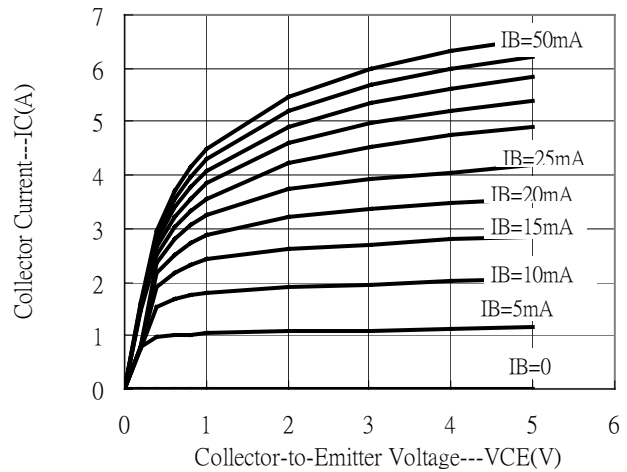
Saturation Voltage vs Collector Current



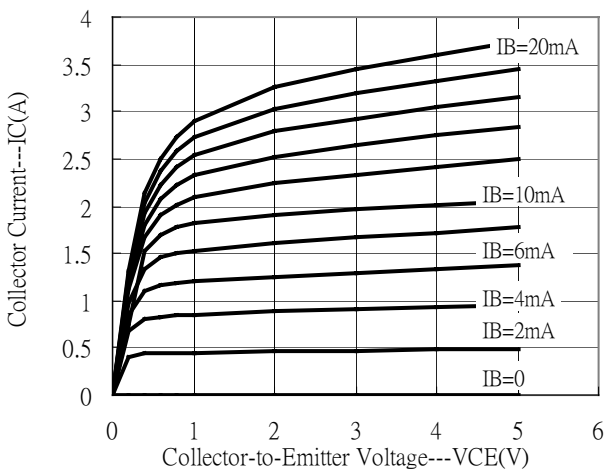
Saturation Voltage vs Collector Current



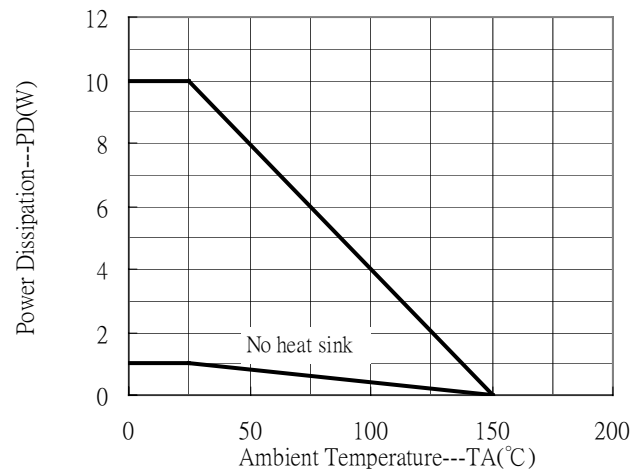
Output Characteristics



Output Characteristics



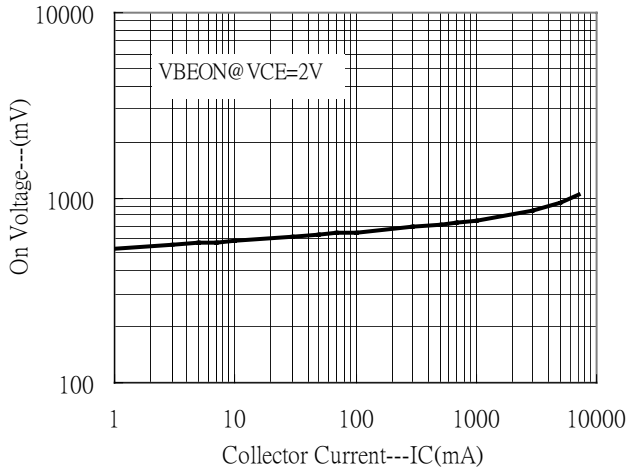
Power Derating Curves



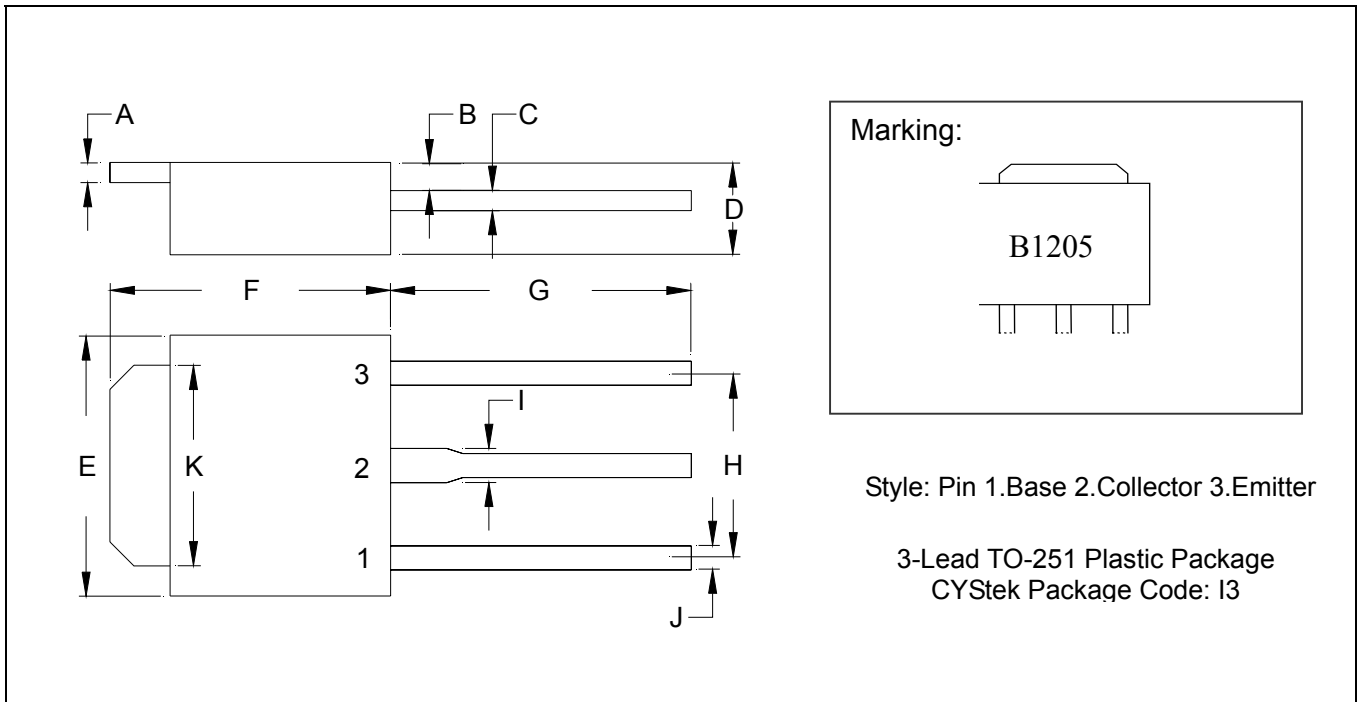


### Characteristic Curves(Cont.)

On Voltage vs Collector Current



**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	-	0.0354	-	0.90
D	0.0866	0.0945	2.20	2.40	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2677	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: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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