NPN Epitaxial Planar Transistor

BTC1510E3

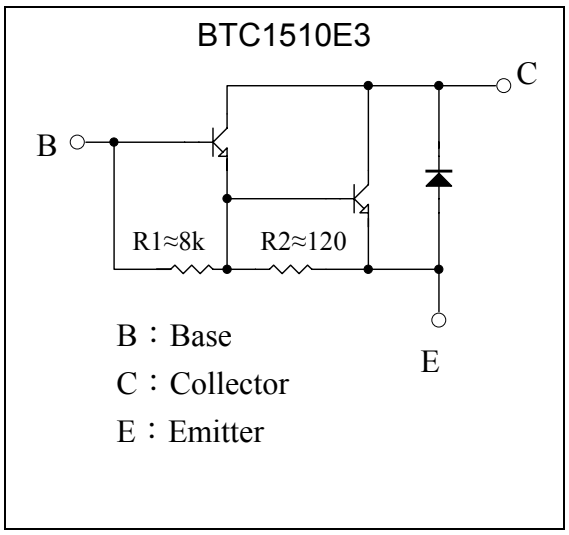
Description

The BTC1510E3 is a NPN Darlington transistor, designed for general purpose amplifier and low speed switching application.

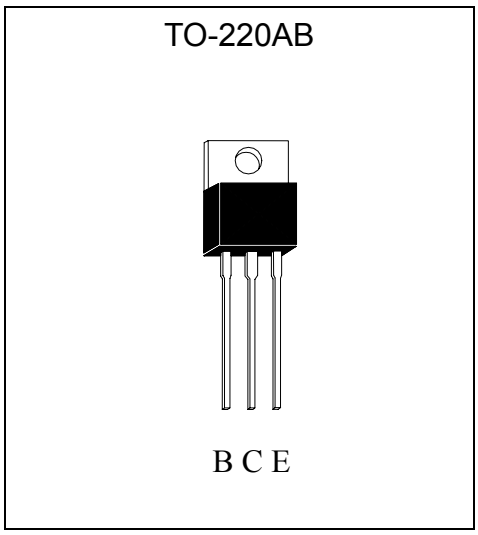
Features:

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

Equivalent Circuit



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	150	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	$I_{C(DC)}$	10	A
	$I_{C(Pulse)}$	15 *1	
Power Dissipation	Pd(T_A=25℃)	2	W
	Pd(T_C=25℃)	65	
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : *1. Single Pulse Pw=100ms

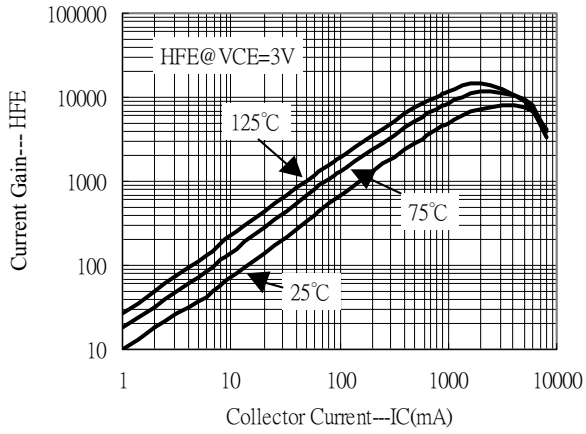
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	150	-	-	V	I_C=100μA, I_E=0
BV_{CEO}	150	-	-	V	I_C=1mA, I_B=0
I_{CEO}	-	-	200	μA	V_{CE}=150V, I_E=0
I_{CBO}	-	-	200	μA	V_{CB}=150V, I_E=0
I_{EBO}	-	-	2	mA	V_{EB}=5V, I_C=0
*$V_{CE(sat)}$ 1	-	-	2	V	I_C=5A, I_B=10mA
*$V_{CE(sat)}$ 2	-	-	3	V	I_C=10A, I_B=100mA
*$V_{CE(sat)}$ 3	-	-	1.5	V	I_C=5A, I_B=2.5mA
*$V_{BE(sat)}$	-	-	2	V	I_C=5A, I_B=5mA
*$V_{BE(on)}$ 1	-	-	2.8	V	V_{CE}=3V, I_C=5A
*$V_{BE(on)}$ 2	-	-	4.5	V	V_{CE}=3V, I_C=10A
*V_{FEC}	-	-	3	V	I_C=5A
*h_{FE} 1	2	-	20	K	V_{CE}=3V, I_C=5A
*h_{FE} 2	100	-	-	-	V_{CE}=3V, I_C=10A

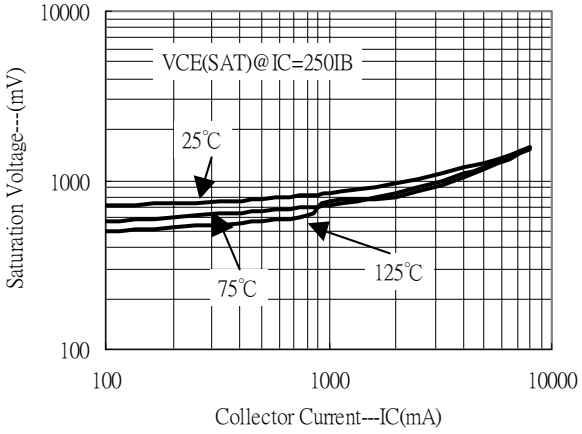
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Characteristic Curves

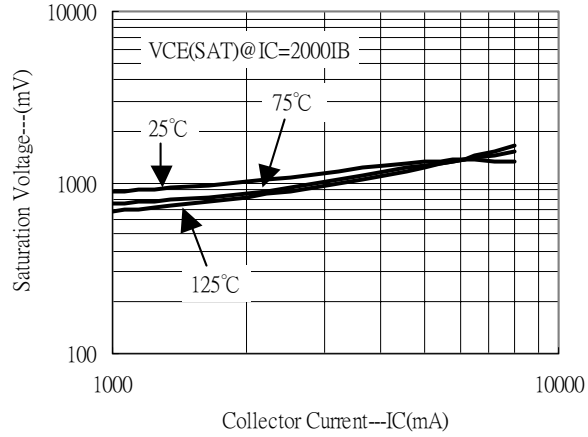
Current Gain vs Collector Current



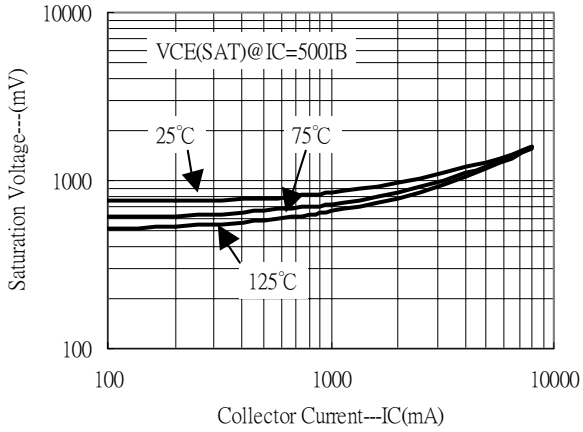
Saturation Voltage vs Collector Current



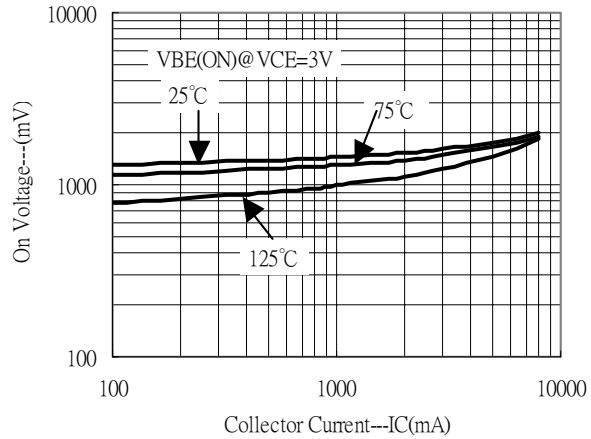
Saturation Voltage vs Collcetor Current



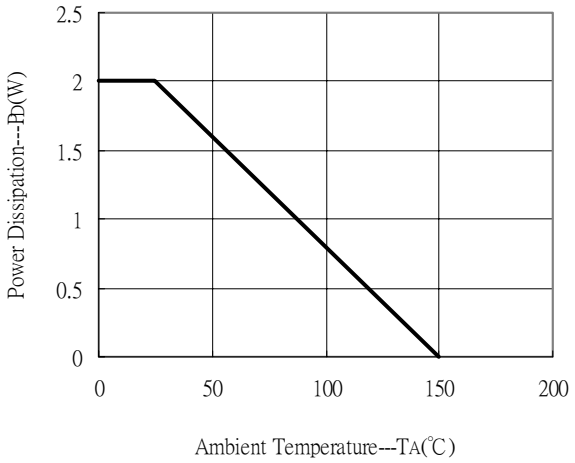
Saturation Voltage vs Colltctor Current



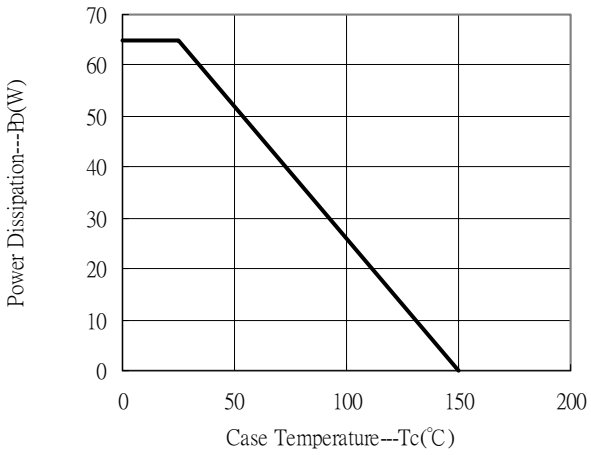
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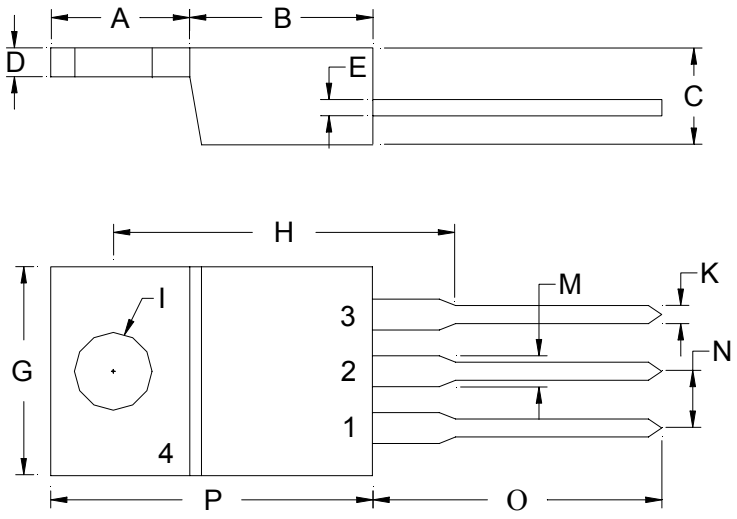
Power Derating Curve

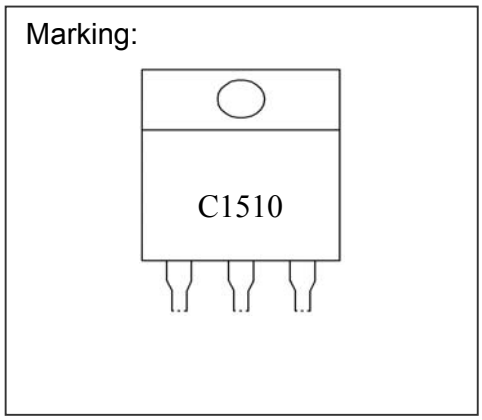


Power Derating Curve



TO-220AB Dimension





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

3-Lead TO-220AB Plastic Package
CYStek Package Code: E3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2197	0.2949	5.58	7.49	I	-	*0.1508	-	*3.83
B	0.3299	0.3504	8.38	8.90	K	0.0295	0.0374	0.75	0.95
C	0.1732	0.185	4.40	4.70	M	0.0449	0.0551	1.14	1.40
D	0.0453	0.0547	1.15	1.39	N	-	*0.1000	-	*2.54
E	0.0138	0.0236	0.35	0.60	O	0.5000	0.5618	12.70	14.27
G	0.3803	0.4047	9.66	10.28	P	0.5701	0.6248	14.48	15.87
H	-	*0.6398	-	*16.25					

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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