

General Purpose NPN Epitaxial Planar Transistor

BTN8050N3

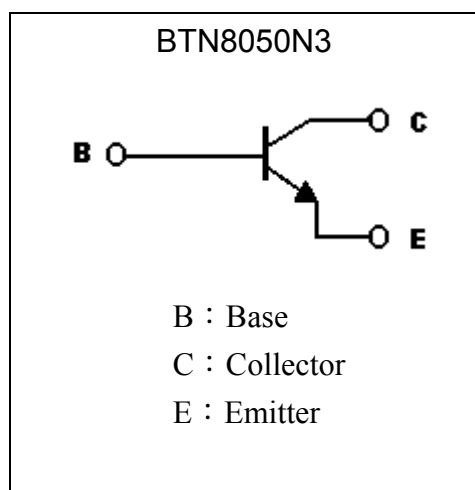
Description

The BTN8050N3 is designed for general purpose low frequency amplifier applications.

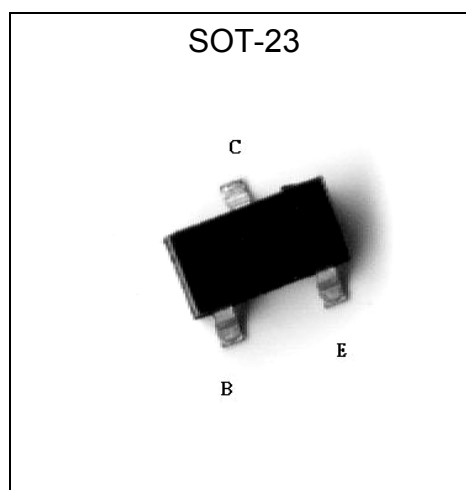
Features

- High collector current , $I_C = 0.8A$
- Low $V_{CE(sat)}$, $V_{CE(sat)} = 0.15V$ (typical), at $I_C / I_B = 400mA / 20mA$
- Complementary to BTP8550N3.

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	800	mA
Collector Current (Pulse)	I_{CP}	1.5 (Note)	A
Power Dissipation	P_d	225	W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

Note : Single pulse, $P_w = 10ms$

**Characteristics** (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	30	-	-	V	I _C =50μA, I _E =0
BV _{CEO}	20	-	-	V	I _C =1mA, I _B =0
BV _{EBO}	5	-	-	V	I _E =50μA, I _C =0
I _{CBO}	-	-	100	nA	V _{CB} =20V, I _E =0
I _{EBO}	-	-	100	nA	V _{EB} =4V, I _C =0
*V _{CE(sat)} 1	-	-	0.3	V	I _C =400mA, I _B =20mA
*V _{CE(sat)} 2	-	-	0.4	V	I _C =800mA, I _B =80mA
V _{BE(on)}	-	-	1	V	V _{CE} =1V, I _C =150mA
*h _{FE} 1	100	-	500	-	V _{CE} =1V, I _C =150mA
*h _{FE} 2	80	-	-	-	V _{CE} =2V, I _C =800mA
f _T	-	150	-	MHz	V _{CE} =5V, I _C =50mA, f=100MHz
Cob	-	15	-	pF	V _{CB} =10V, f=1MHz

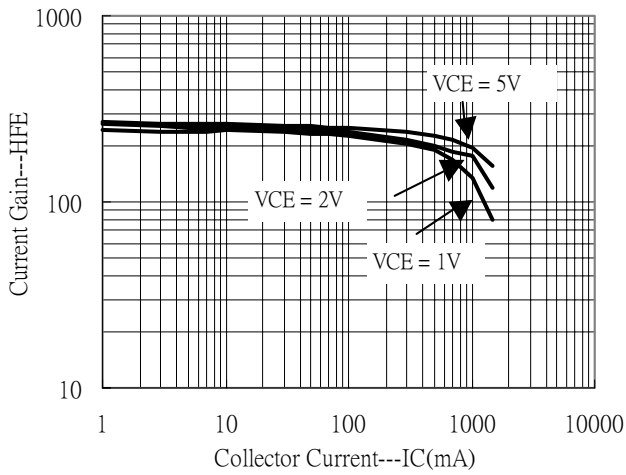
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Classification Of h_{FE} 1

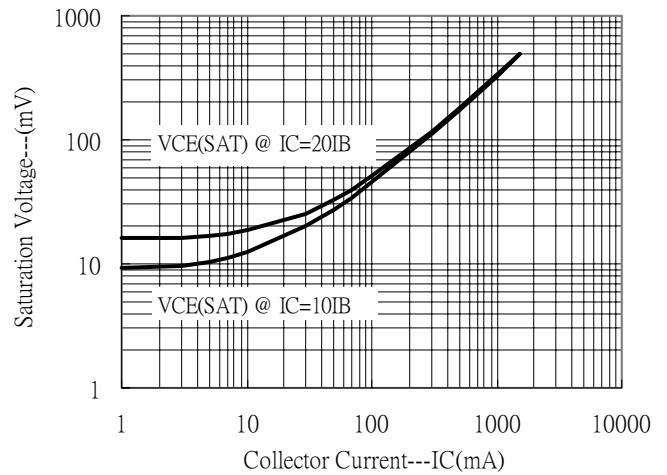
Rank	C	D	E
Range	100~200	150~300	250~500

Characteristic Curves

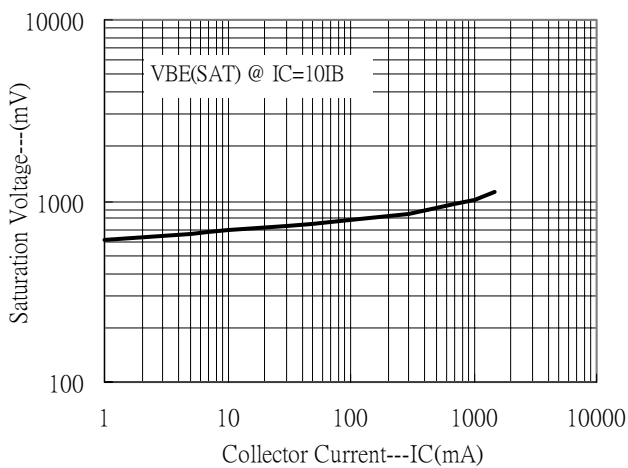
Current Gain vs Collector Current



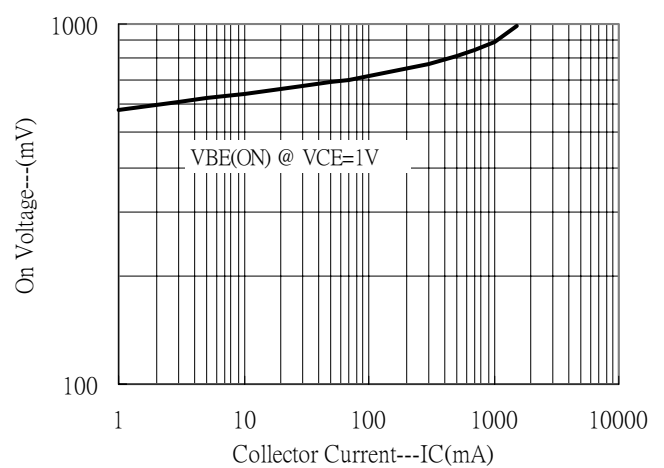
Saturation Voltage vs Collector Current



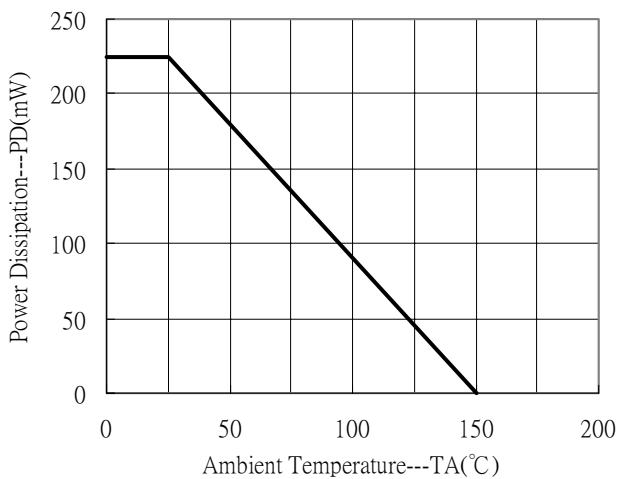
Saturation Voltage vs Collector Current



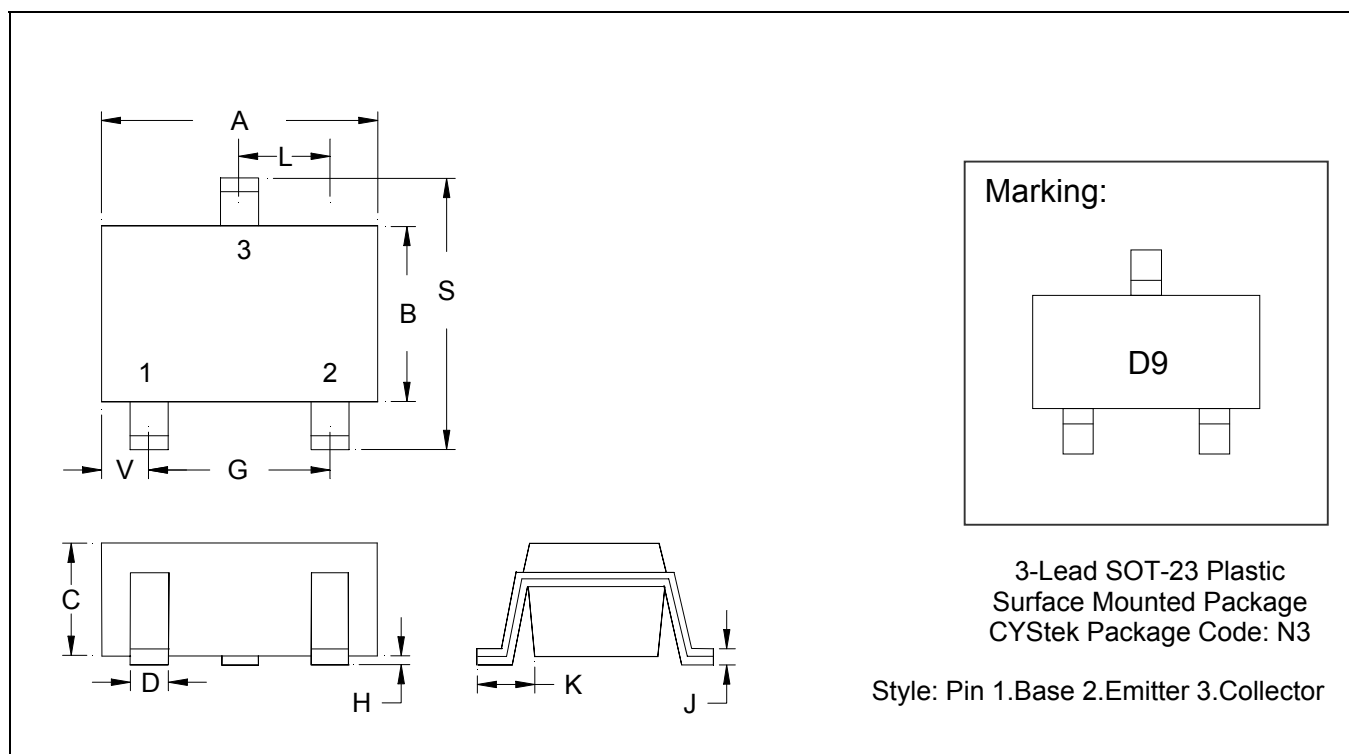
On Voltage vs Collector Current



Power Derating Curve



SOT-23 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

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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