

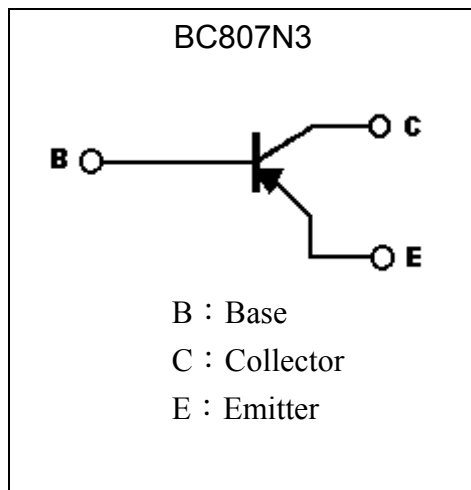
**General Purpose PNP Epitaxial Planar Transistor**

# BC807N3

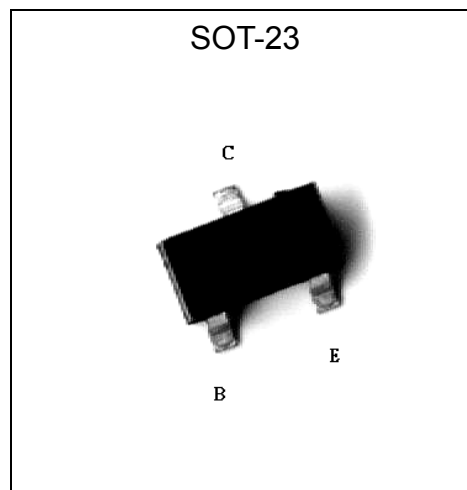
## Description

- The BC807N3 is designed for general purpose switching and amplification applications. It is housed in the SOT-23/SC-59 package which is designed for low power surface mount applications.
- Low  $V_{CE(sat)}$
- High switching speed.
- Complementary to BC817N3

## Equivalent Circuit



## Outline



## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	$V_{CBO}$	-50	V
Collector-Emitter Voltage	$V_{CEO}$	-45	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-500	mA
Power Dissipation @ $T_A=25^\circ\text{C}$	$P_d$	225 (Note 1)	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556 (Note 1)	$^\circ\text{C/W}$
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

Note 1: When mounted on a FR-5 board with area measuring 1.0x0.75x0.062 in.



**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	-50	-	-	V	IC=-10μA
*BVCEO	-45	-	-	V	IC=-10mA
BVEBO	-5	-	-	V	IE=-10μA
ICBO	-	-	-100	nA	VCB=-20V
IEBO	-	-	-100	nA	VEB=-5V
*VCE(sat)	-	-0.5	-0.7	V	IC=-500mA, IB=-50mA
*VBE(on)	-	-	-1.2	V	VCE=-1V, IC=-500mA
*hFE 1	100	-	600	-	VCE=-1V, IC=-100mA
*hFE	40	-	-	-	VCE=-1V, IC=-500mA
fT	80	-	-	MHz	VCE=-5V, IC=-10mA, f=100MHz
Cob	-	9	-	pF	VCB=-10V, IE=0A, f=1MHz

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

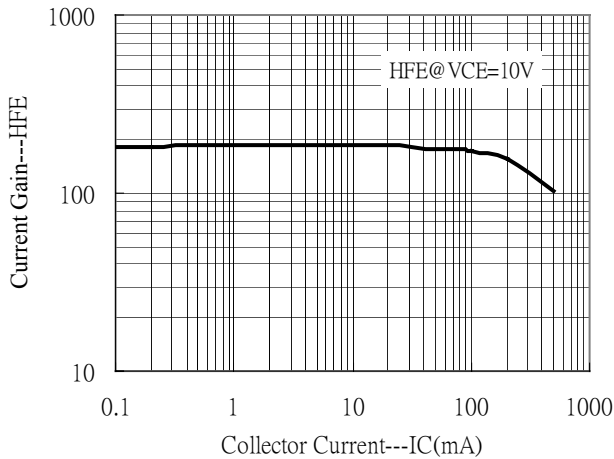
**Classification of hFE 1:**

Rank	16	25	40
Range	100--250	160--400	250--600

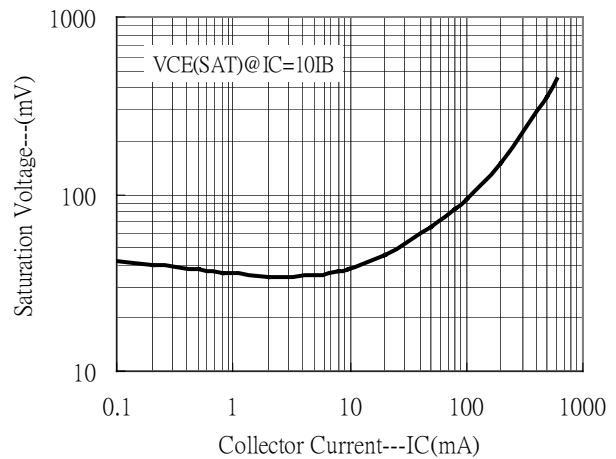


### Characteristic Curves

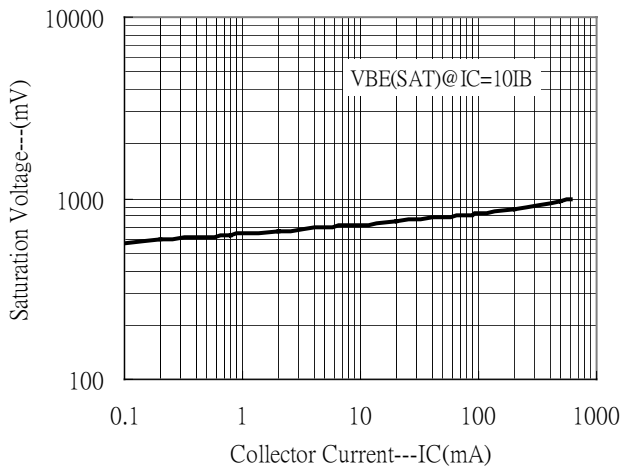
Current Gain vs Collector Current



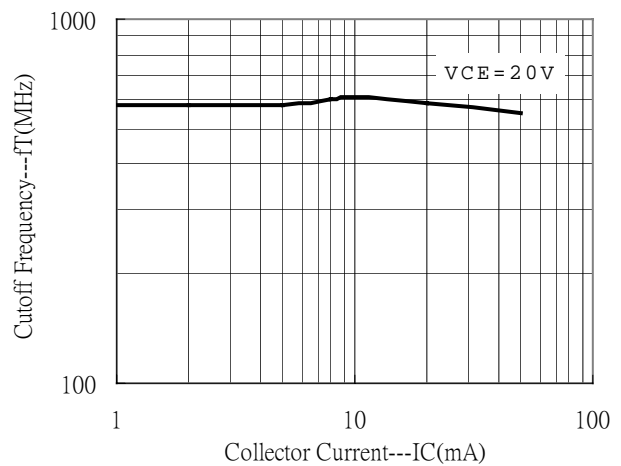
Saturation Voltage vs Collector Current



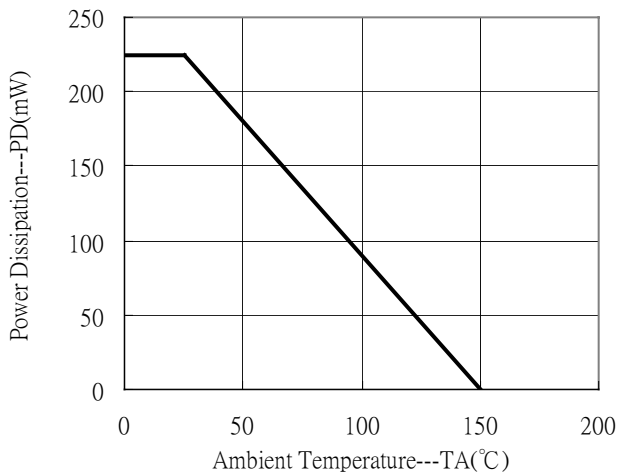
Saturation Voltage vs Collector Current



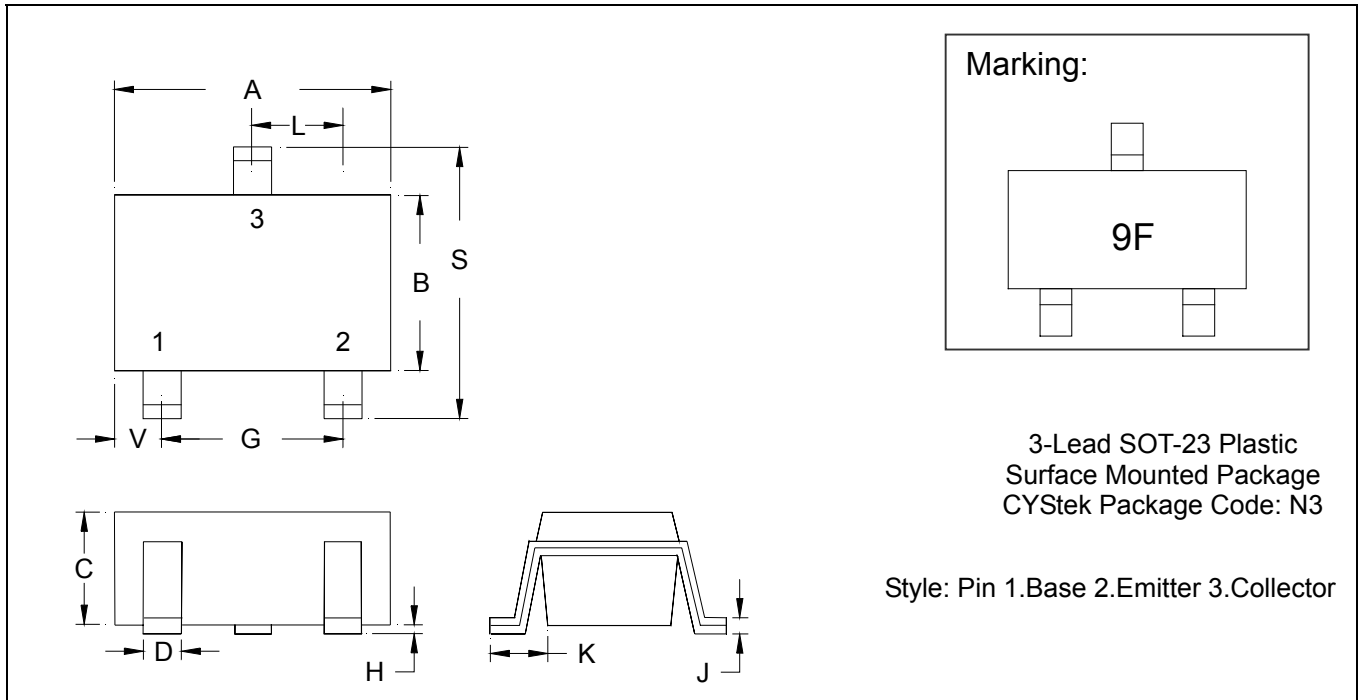
Cutoff Frequency vs Collector Current



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:**
- Controlling dimension: millimeters.
  - Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  - 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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