General Purpose NPN Epitaxial Planar Transistor

BC847N3

Description

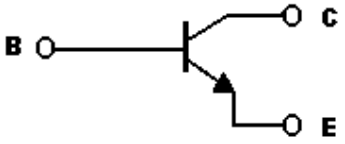
- The BC847N3 is designed for general purpose switching and amplification applications.
- Complementary to BC857N3.

Features

- Low current, $I_{C(max)}$=100mA
- Low voltage, BV_{CEO}= 45V.

Symbol

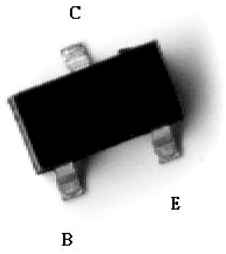
BC847N3



B：Base
C：Collector
E：Emitter

Outline

SOT-23



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}	6	V
Collector Current (DC)	I_C	100	mA
Collector Current (Pulse)	I_{CP}	200	mA
Power Dissipation	Pd	225	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	50	-	-	V	I_C=10μA
BV_{CEO}	45	-	-	V	I_C=1mA
BV_{EBO}	6	-	-	V	I_E=10μA
I_{CBO}	-	-	15	nA	V_{CE}=30V
I_{EBO}	-	-	100	nA	V_{EB}=5V
*$V_{CE(sat)}$ 1	-	-	250	mV	I_C=10mA, I_B=0.5mA
*$V_{CE(sat)}$ 2	-	-	600	mV	I_C=100mA, I_B=5mA
*$V_{BE(sat)}$ 1	-	700	-	mV	I_C=10mA, I_B=0.5mA
*$V_{BE(sat)}$ 2	-	900	-	mV	I_C=100mA, I_B=5mA
*$V_{BE(on)}$ 1	580	660	700	mV	V_{CE}=5V, I_C=2mA
*$V_{BE(on)}$ 2	-	-	770	mV	V_{CE}=5V, I_C=10mA
*h_{FE}	110	-	800	-	V_{CE}=5V, I_C=2mA
f_T	100	-	-	MHz	V_{CE}=5V, I_E=10mA, f=100MHz
Cob	-	2.5	-	pF	V_{CB}=10V, I_E=0A,f=1MHz

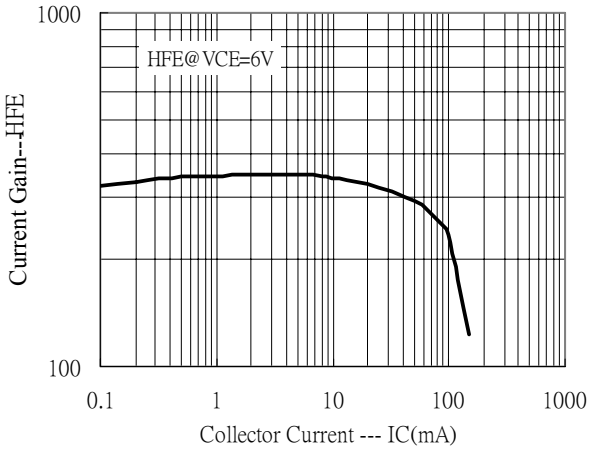
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Classification of h_{FE} :

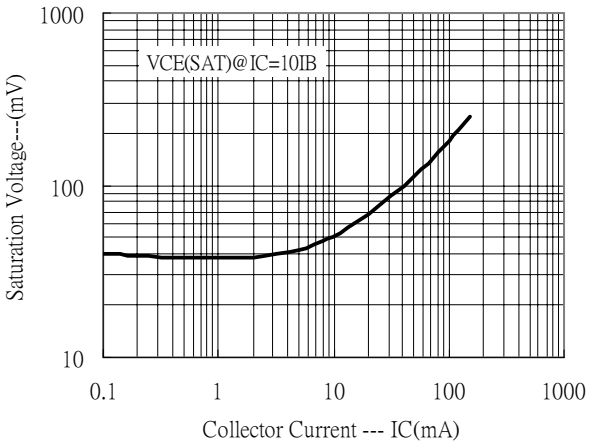
Rank	A	B	C
Range	110--220	200--450	420--800

Characteristic Curves

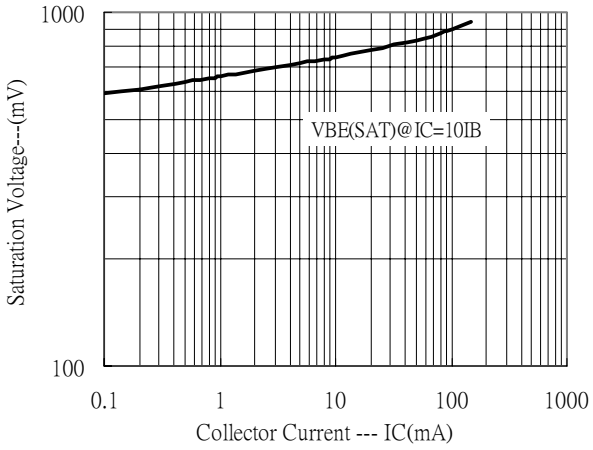
Current Gain vs Collector Current



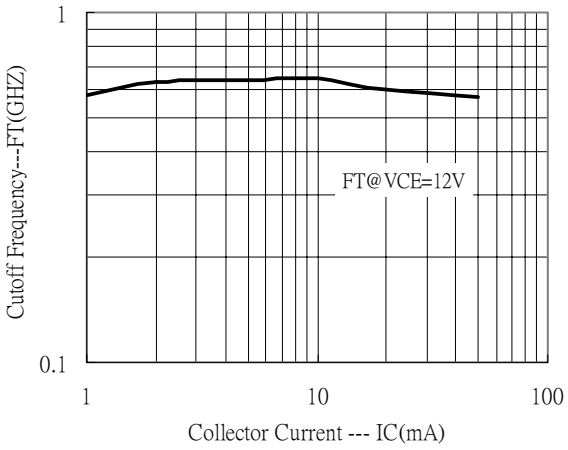
Saturation Voltage vs Collector Current



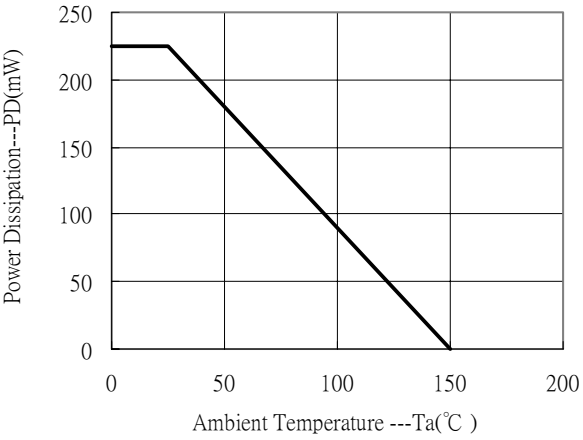
Saturation Voltage vs Collector Current



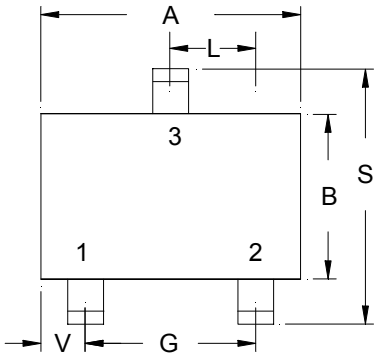
Cutoff Frequency vs Collector Current

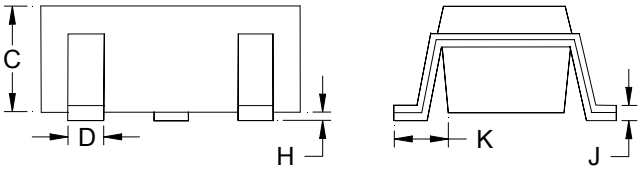


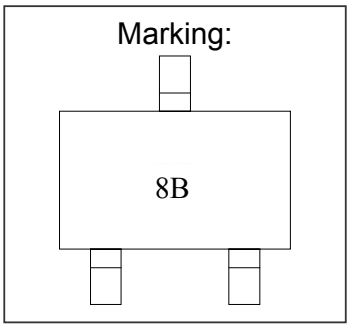
Power Derating Curve



SOT-23 Dimension







3-Lead SOT-23 Plastic
Surface Mounted Package
CYStek Package Code: N3

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

*: 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: 1Controlling 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