High Frequency Amplifier Transistor (11V, 50mA, 3.2GHz)

BTC3838N3

Features

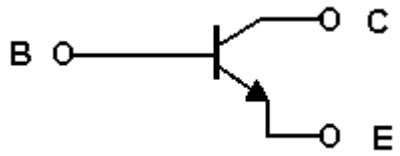
- High transition frequency, f_T=3.2GHz(typ.)
- Low output capacitance, Cob=0.8pF(typ.)

Applications

- UHF converter.
- Local oscillator

Symbol

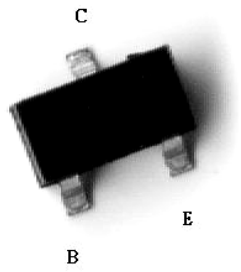
BTC3838N3



B：Base
C：Collector
E：Emitter

Outline

SOT-23



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	11	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	50	mA
Power Dissipation	Pd	200	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}	20	-	-	V	I_C=10μA, I_E=0
BV_{CEO}	11	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	3	-	-	V	I_E=10μA, I_C=0
I_{CBO}	-	-	500	nA	V_{CB}=10V, I_E=0
I_{EBO}	-	-	500	nA	V_{EB}=2V, I_C=0
*$V_{CE(sat)}$	-	-	0.5	V	I_C=10mA, I_B=5mA
*h_{FE}	56	-	270	-	V_{CE}=10V, I_C=5mA
f_T	1.4	3.2	-	GHz	V_{CE}=10V, I_C=10mA, f=500MHz
Cob	-	0.8	1.5	pF	V_{CB}=10V, I_E=0, f=1MHz

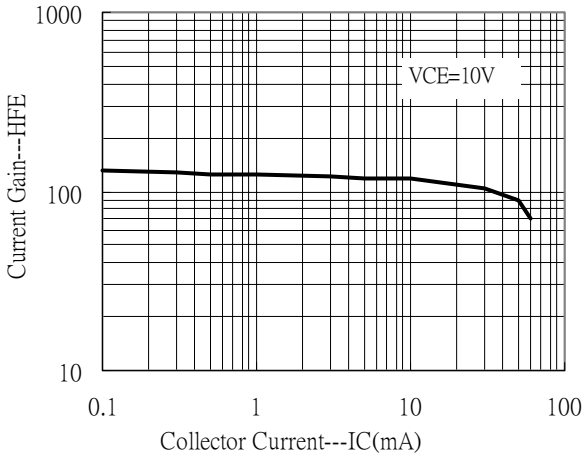
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Classification Of h_{FE}

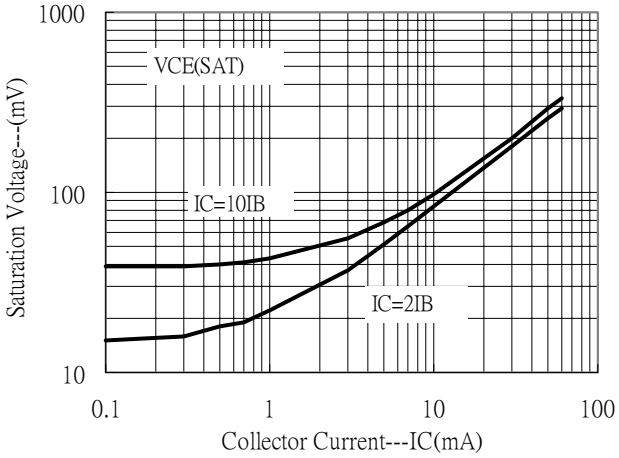
Rank	N	P	Q
Range	56~120	82~180	120~270

Characteristic Curves

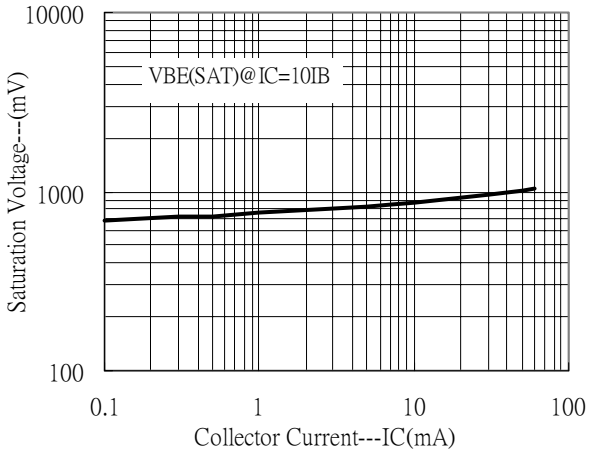
Current Gain vs Collector Current



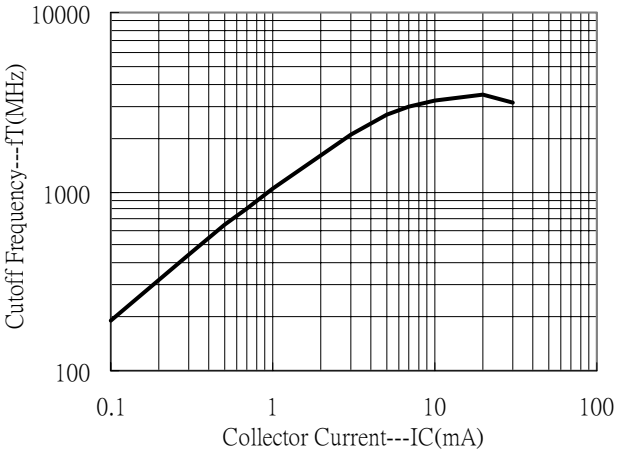
Saturation Voltage vs Collector Current



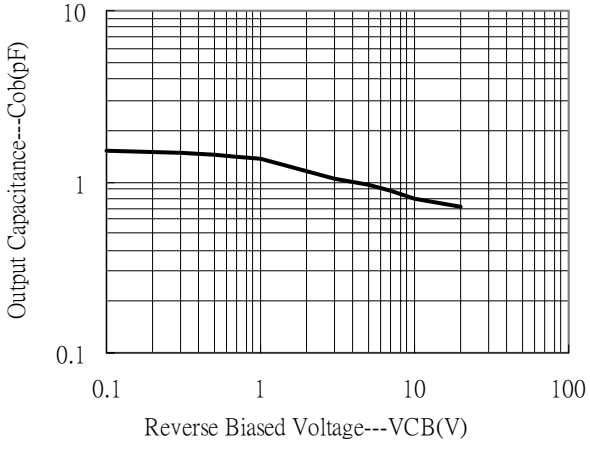
Saturation Voltage vs Collector Current



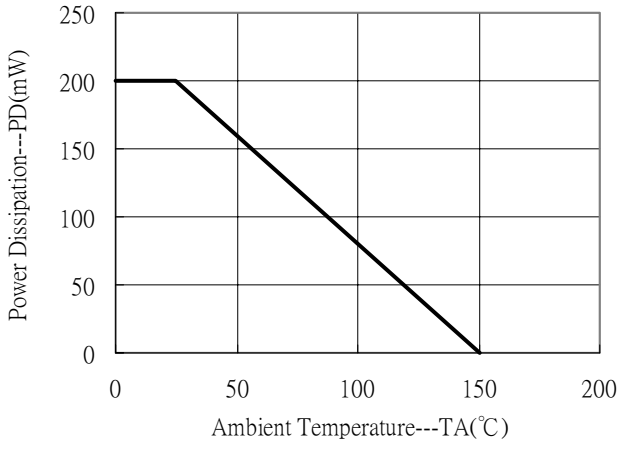
Cutoff Frequency vs Collector Current



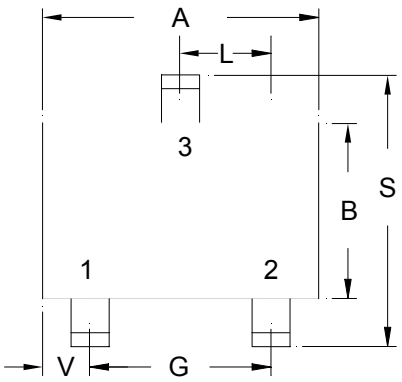
Output Capacitance vs Reverse Biased Voltage

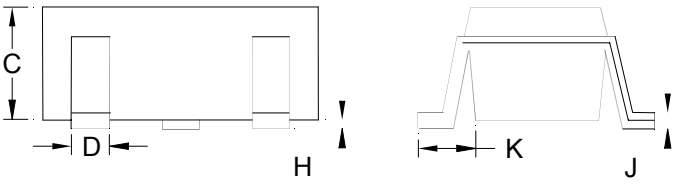


Power Derating Curve

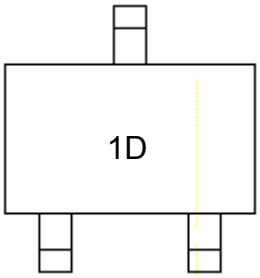


SOT-23 Dimension





Marking:



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: 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