

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

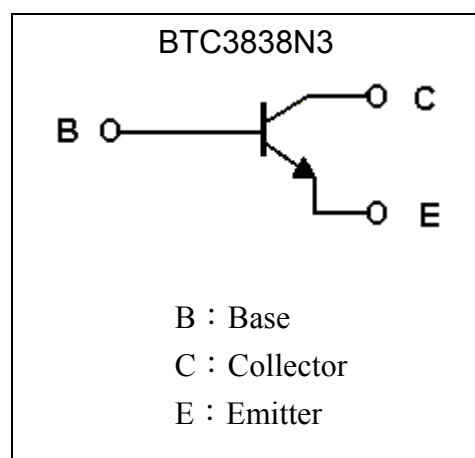
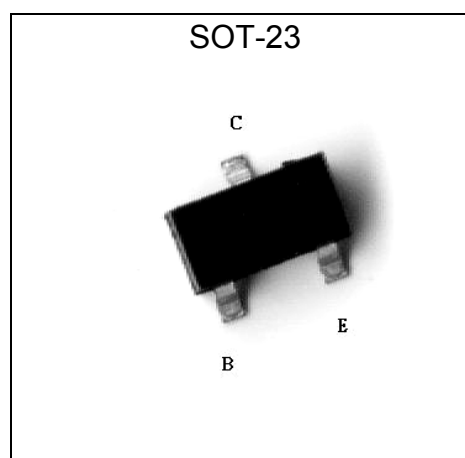
BTC3838N3

Features

- High transition frequency, $f_T=3.2\text{GHz}(\text{typ.})$
- Low output capacitance, $C_{ob}=0.8\text{pF}(\text{typ.})$

Applications

- UHF converter.
- Local oscillator

Symbol

Outline

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

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	P_d	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^\circ\text{C}$



Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	20	-	-	V	$I_C=10\mu A, I_E=0$
BV_{CEO}	11	-	-	V	$I_C=1mA, I_B=0$
BV_{EBO}	3	-	-	V	$I_E=10\mu A, I_C=0$
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 $\leq 380\mu s$, Duty Cycle $\leq 2\%$

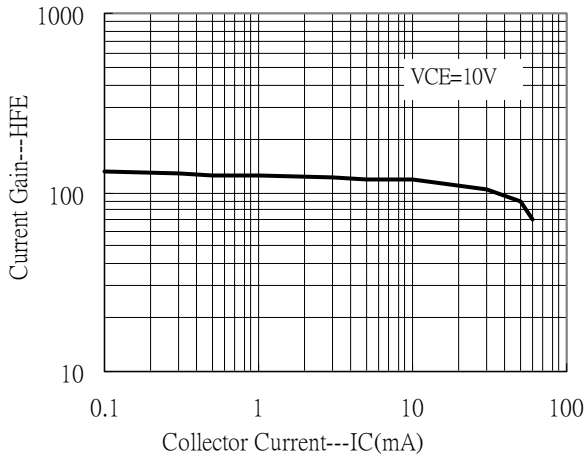
Classification Of h_{FE}

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

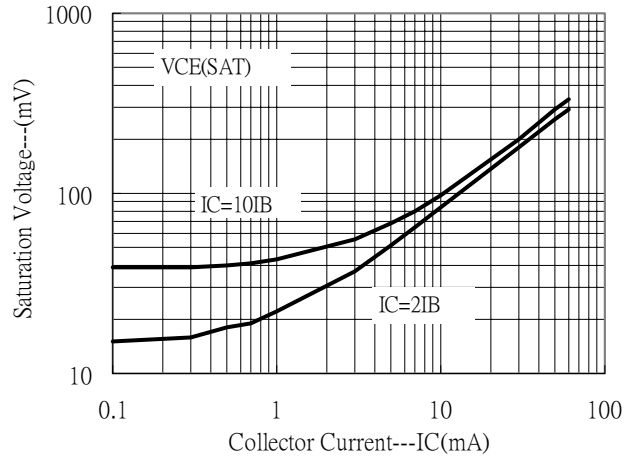


Characteristic Curves

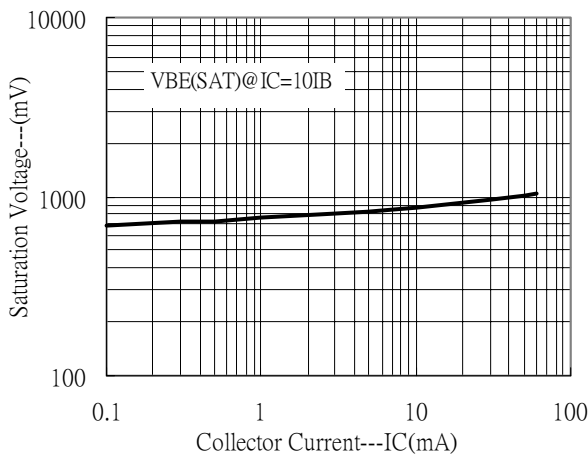
Current Gain vs Collector Current



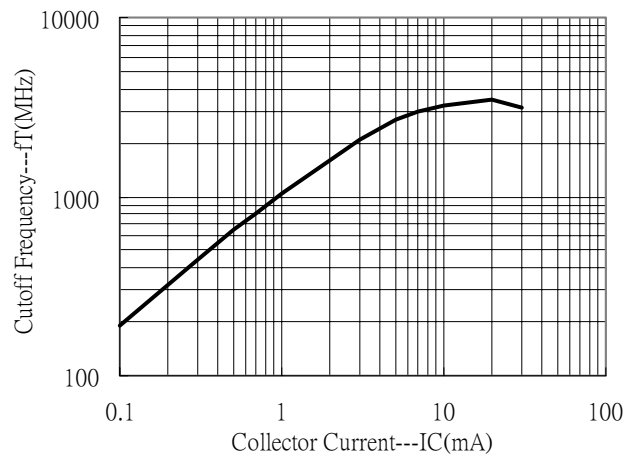
Saturation Voltage vs Collector Current



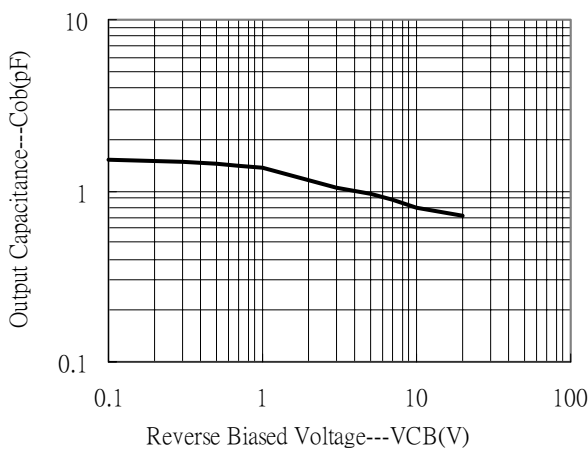
Saturation Voltage vs Collector Current



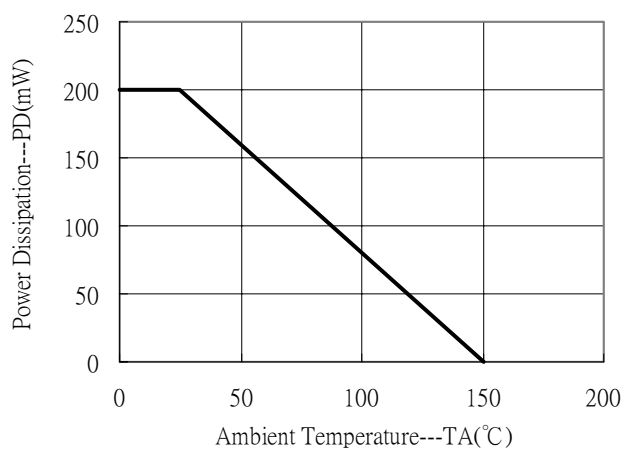
Cutoff Frequency vs Collector Current



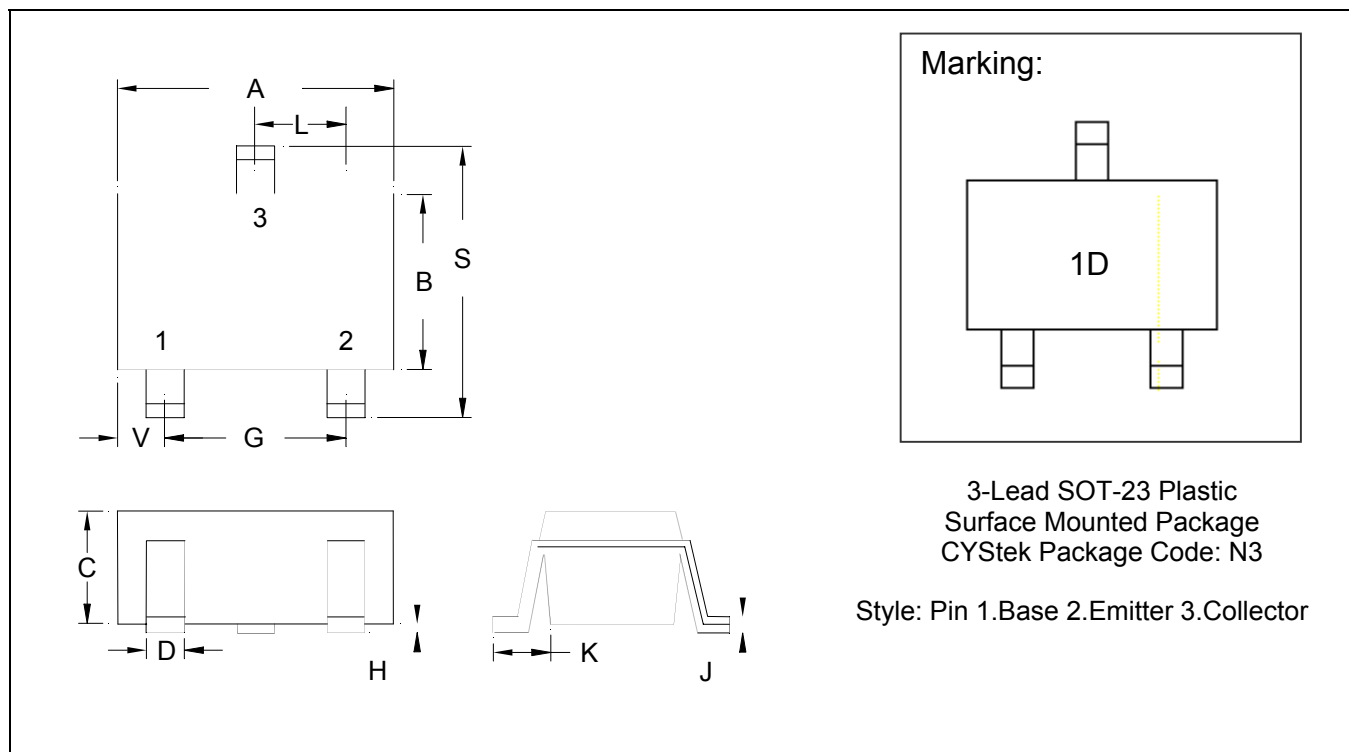
Output Capacitance vs Reverse Biased Voltage



Power Derating Curve



SOT-23 Dimension



*: 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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