VHF/UHF NPN Epitaxial Planar Transistor

BTNH10N3

Description

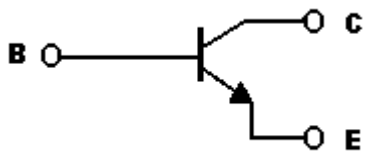
The BTNH10N3 is designed for use in VHF & UHF oscillators and VHF mixer in tuner of a TV receiver.

Features

- High transition frequency.
- Very low capacitance.
- Small $R_{bb'}$-Cc and high current gain.
- Pb-free package

Symbol

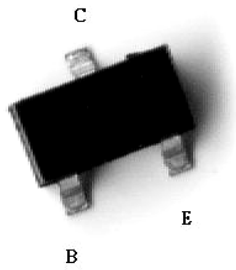
BTNH10N3



B：Base
C：Collector
E：Emitter

Outline

SOT-23



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	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}	30	-	-	V	I_C=100μA
BV_{CEO}	25	-	-	V	I_C=1mA
BV_{EBO}	3	-	-	V	I_C=10μA
I_{CBO}	-	-	100	nA	V_{CB}=25V
I_{EBO}	-	-	100	nA	V_{EB}=2V
*$V_{CE(sat)}$	-	-	0.5	V	I_C=4mA, I_B=0.4mA
*$V_{BE(on)}$	-	-	0.95	V	V_{CE}=10V, I_C=4mA
*h_{FE}	52	-	270	-	V_{CE}=10V, I_C=4mA
f_T	650	1000	-	MHz	V_{CE}=10V, I_C=4mA, f=100MHz
Cob	-	-	0.7	pF	V_{CB}=10V, I_E=0A, f=1MHz
$R_{bb'}$-C_c	-	-	9	ps	V_{CB}=10V, I_C=4mA, f=31.8MHz

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

Classification Of h_{FE}

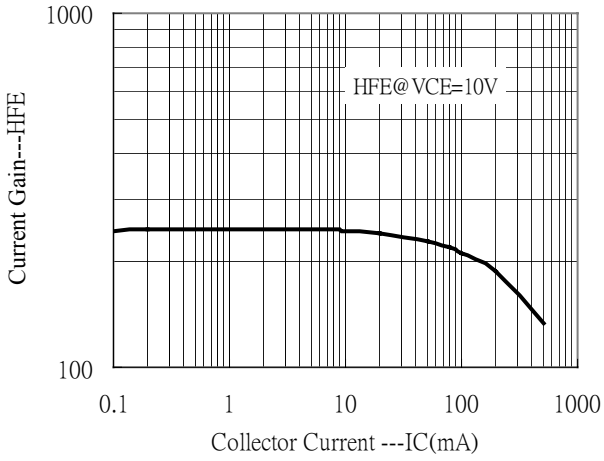
Rank	K	P	Q
Range	52~120	82~180	120~270

Ordering Information

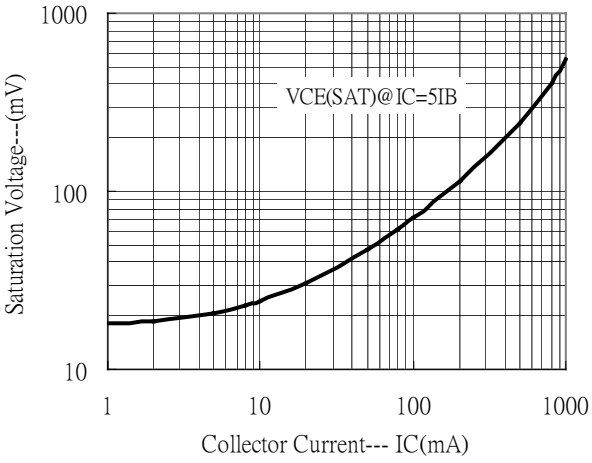
Device	Package	Shipping	Marking
BTNH10N3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	3E

Characteristic Curves

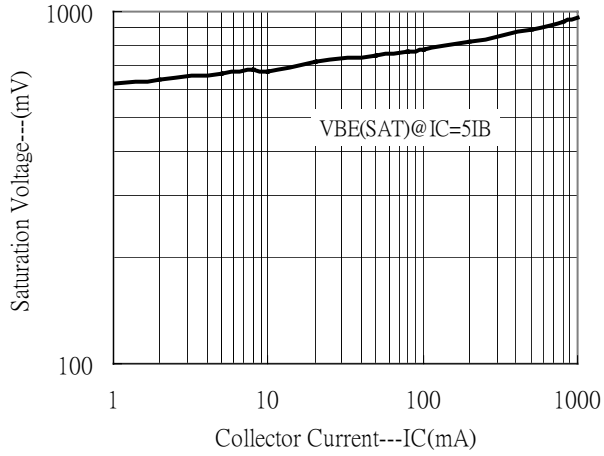
Current Gain vs Collector Current



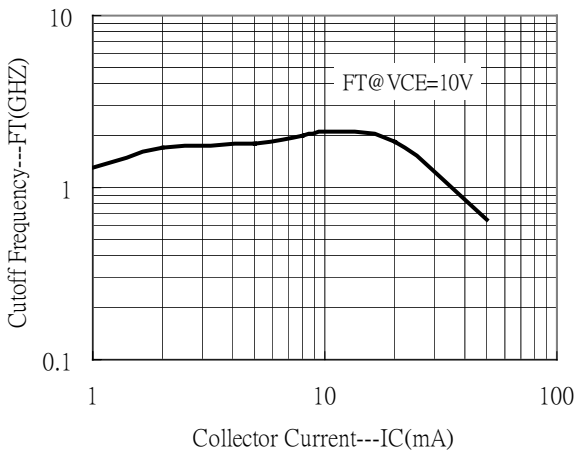
Saturation Voltage vs Collector Current



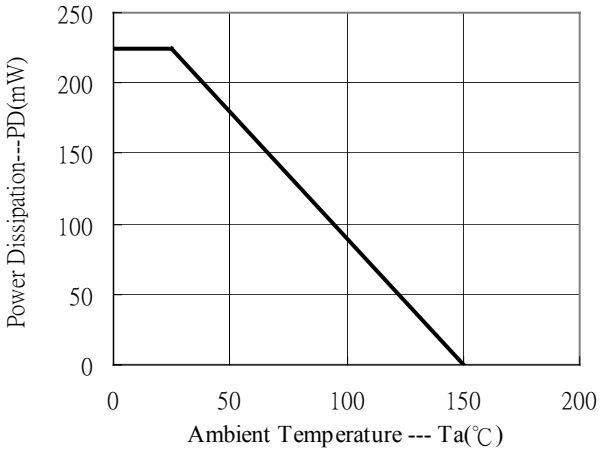
Saturation Voltage vs Collector Current



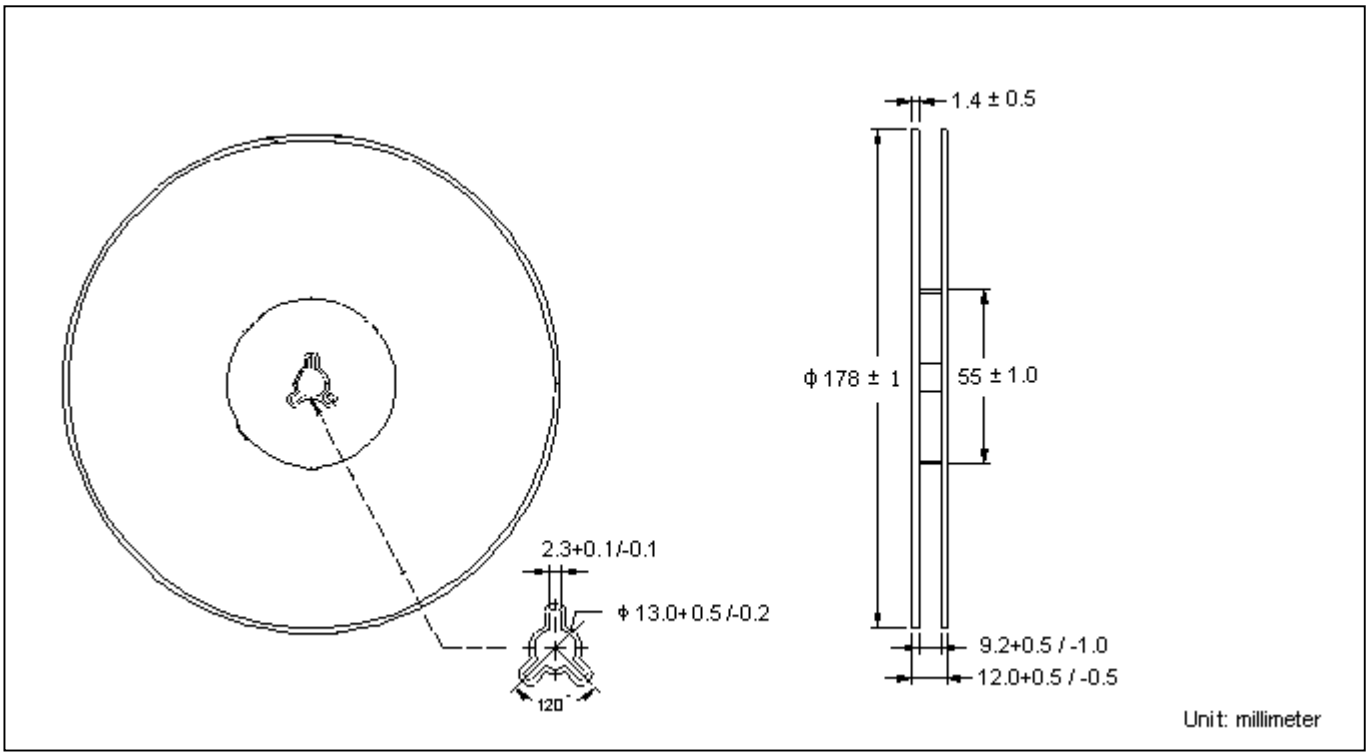
Cutoff Frequency vs Collector Current



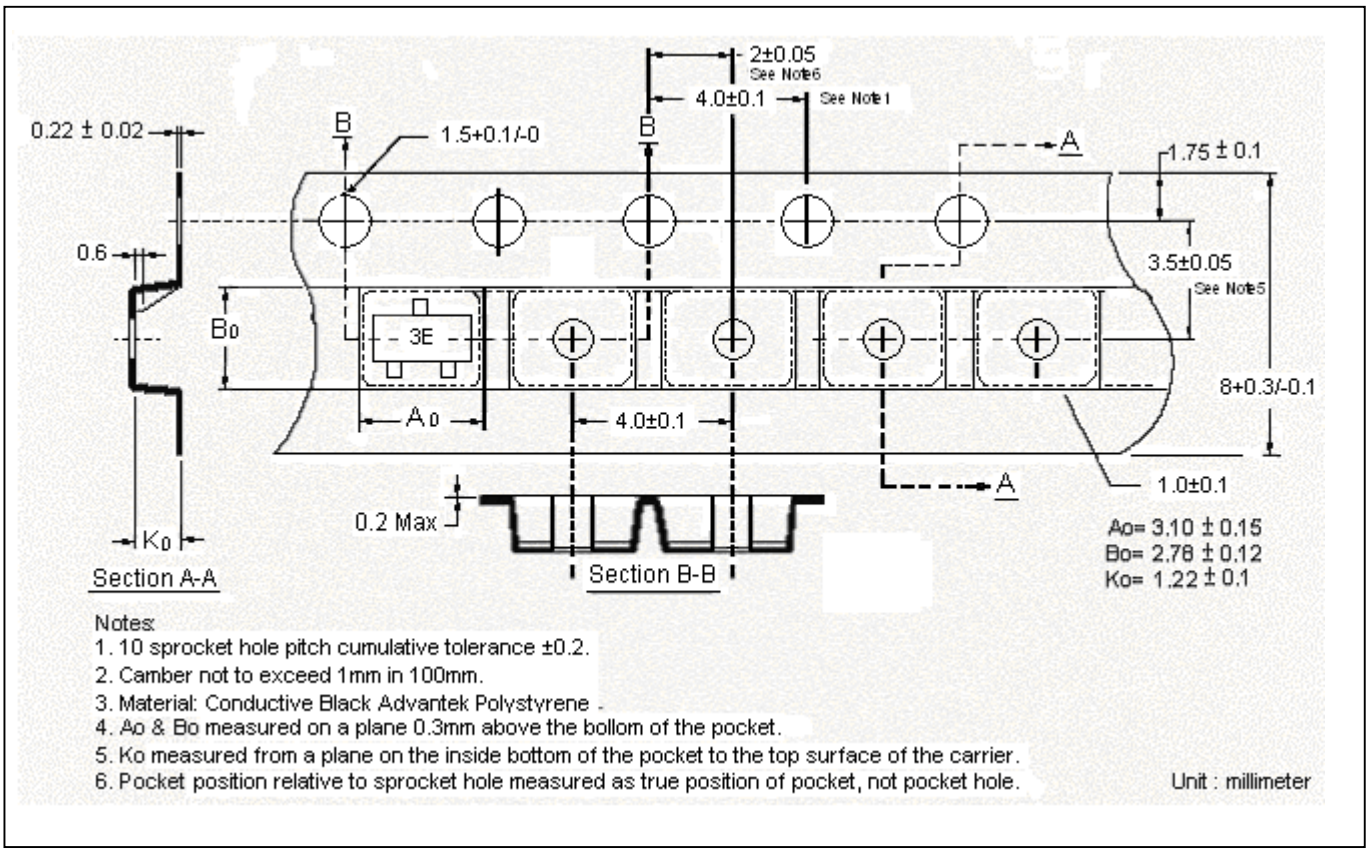
Power Derating Curve



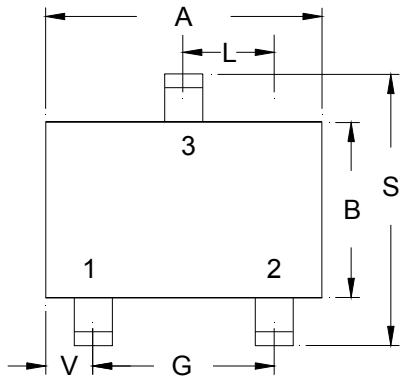
Reel Dimension

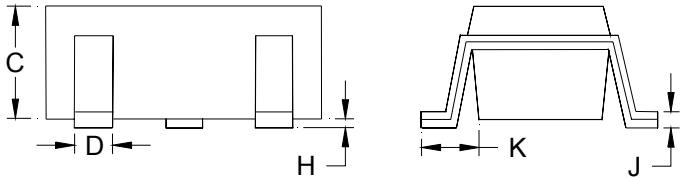


Carrier Tape Dimension

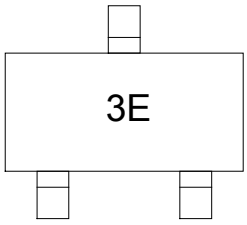


SOT-23 Dimension





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