Low Vcesat NPN Epitaxial Planar Transistor

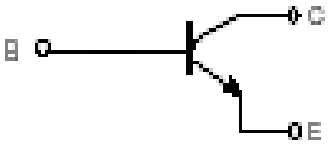
BTD1664M3

Features

- The BTD1664M3 is designed for general purpose low frequency power amplifier applications.
- Low V_{CE}(sat), V_{CE}(sat)=0.15V (typical), at I_C / I_B = 400mA / 20mA
- Complementary to BTB1132M3

Symbol

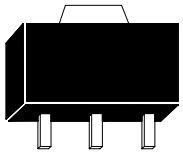
BTD1664M3



B：Base
C：Collector
E：Emitter

Outline

SOT-89



B C E

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	800	mA
Collector Current (Pulse)	I_{CP}	1.5 (Note 1)	A
Power Dissipation	Pd	0.5	W
Power Dissipation	Pd	2 (Note 2)	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : 1. Single pulse, Pw = 20ms, duty ≤ 2%.
2. When mounted on a 40 ×40 ×0.7 mm ceramic board.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	40	-	-	V	I_C=10μA, IE=0
BV_{CEO}	20	-	-	V	I_C=1mA, IB=0
BV_{EBO}	5	-	-	V	I_E=10μA, IC=0
I_{CBO}	-	-	0.5	μA	V_{CB}=20V. IE=0
I_{EBO}	-	-	0.5	μA	V_{EB}=4V,IC=0
*$V_{CE(sat)}1$	-	0.15	0.3	V	I_C=400mA, I_B=20mA
*$V_{CE(sat)}2$	-	0.2	0.4	V	I_C=500mA, I_B=50mA
*$V_{CE(sat)}3$	-	0.25	0.5	V	I_C=800mA, I_B=80mA
*$V_{BE(on)}$	-	-	1	V	V_{CE}=2V, I_C=500mA
*$h_{FE}1$	82	-	560	-	V_{CE}=2V, I_C=100mA
*$h_{FE}2$	82	-	560	-	V_{CE}=2V, I_C=500mA
*$h_{FE}3$	80	-	-	-	V_{CE}=2V, I_C=800mA
f_T	-	150	-	MHz	V_{CE}=5V, I_E=50mA, f=100MHz
Cob	-	15	-	pF	V_{CB}=10V, f=1MHz

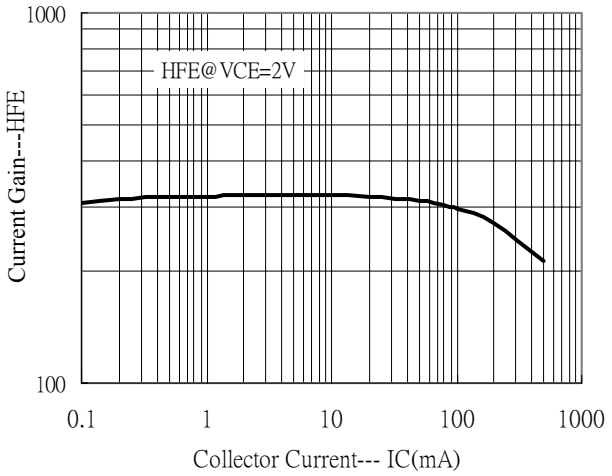
*Pulse Test : Pulse Width ≤380us, Duty Cycle≤2%

Classification Of hFE2

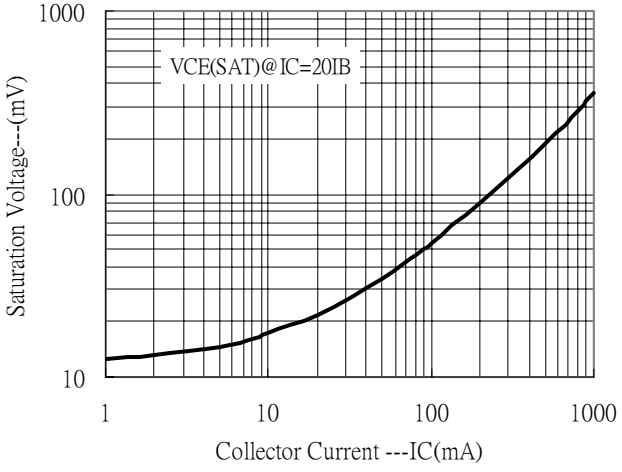
Rank	P	Q	R	S
Range	82~180	120~270	180~390	270~560

Characteristic Curves

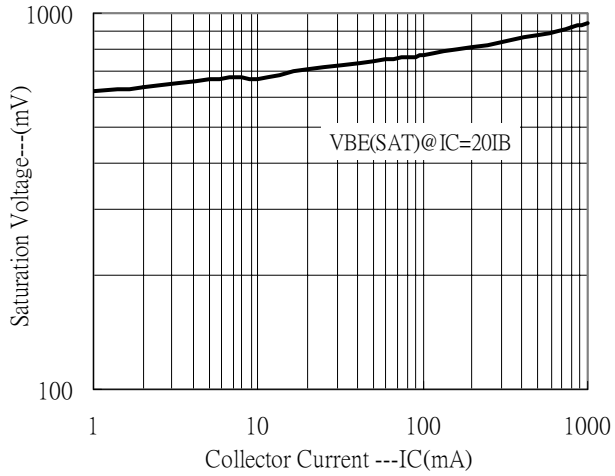
Current Gain vs Collector Current



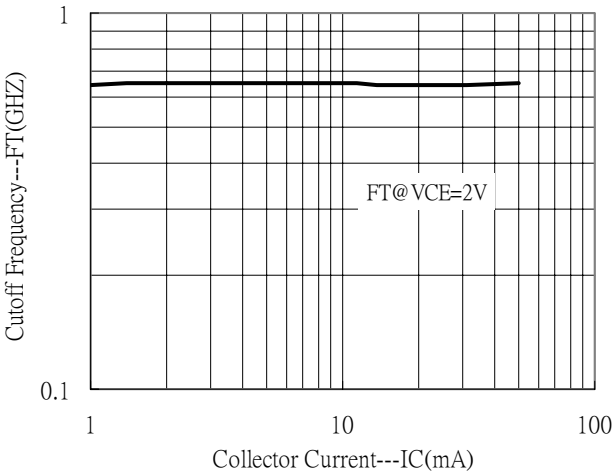
Saturation Voltage vs Collector Current



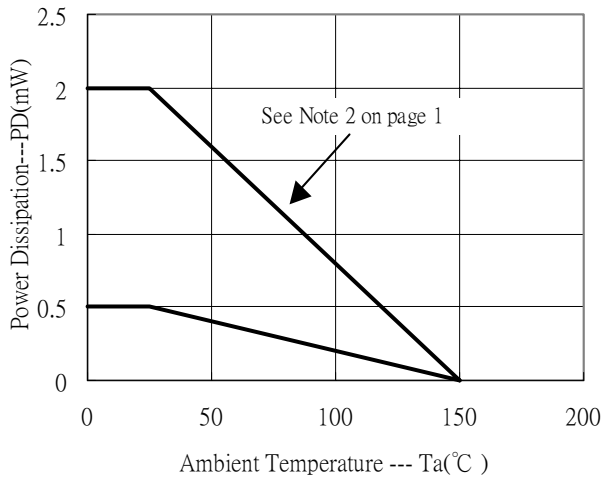
Saturation Voltage vs Collector Current



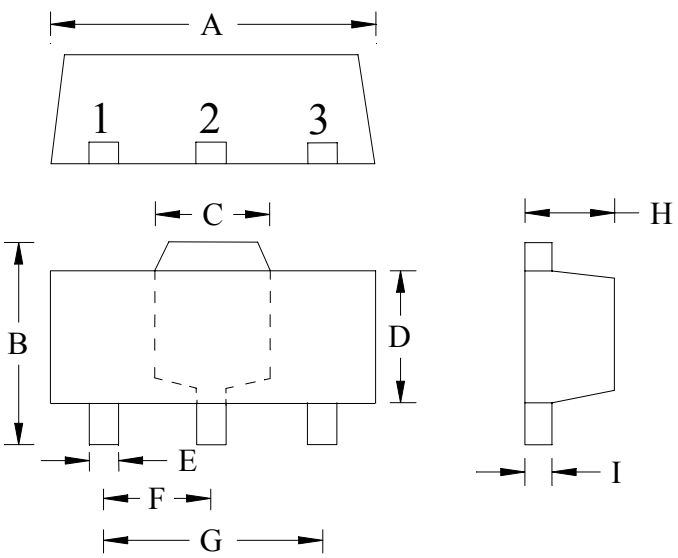
Cutoff Frequency vs Collector Current

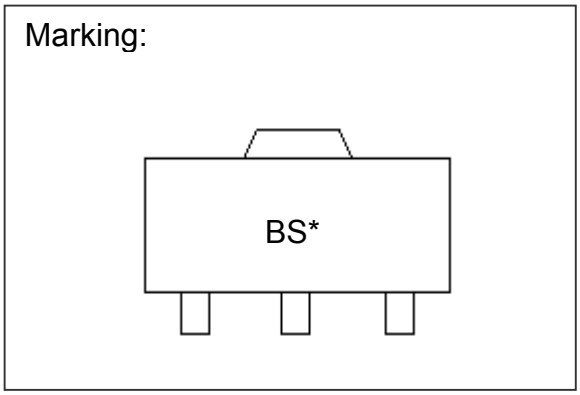


Power Derating Curve



SOT-89 Dimension





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

3-Lead SOT-89 Plastic
Surface Mounted Package
CYStek Package Code: M3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.527
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.01417	0.0201	0.36	0.51					

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