

REPLACEMENT TYPE : 2N3906

FEATURES

- PNP silicon epitaxial planar transistor for switching and Amplifier applications
- As complementary type, the NPN transistor HCN3904 is Recommended
- This transistor is also available in the SOT-23 case with the type designation HABT3906



TO-92

1:EMITTER 2:BASE 3:COLLECTOR

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-40	V
Collector-Emitter Voltage	V _{CEO}	-40	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current-Continuous	I _C	-200	mA
Collector Power Dissipation	P _C	625	mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 -150	°C

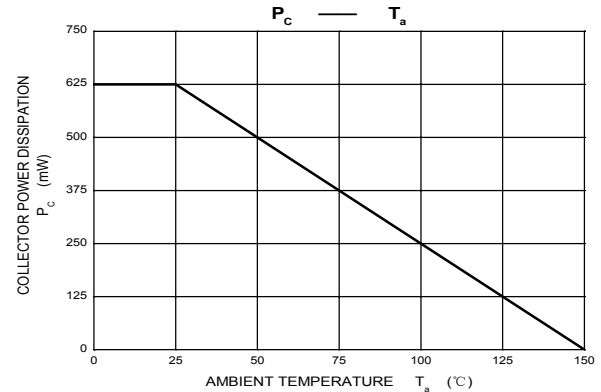
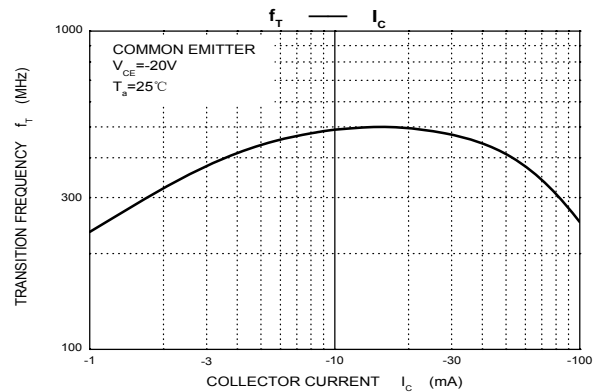
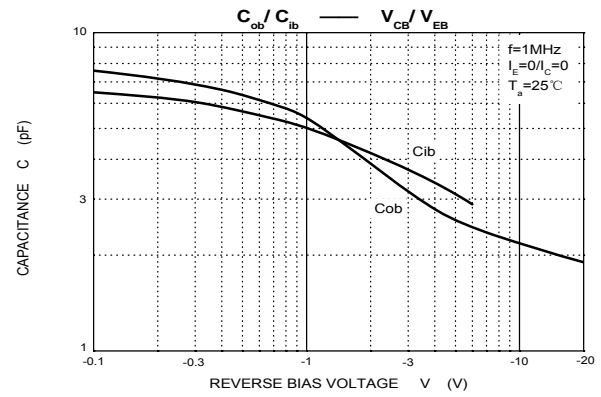
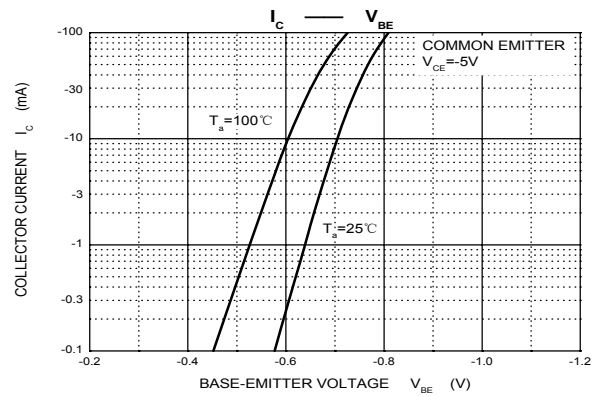
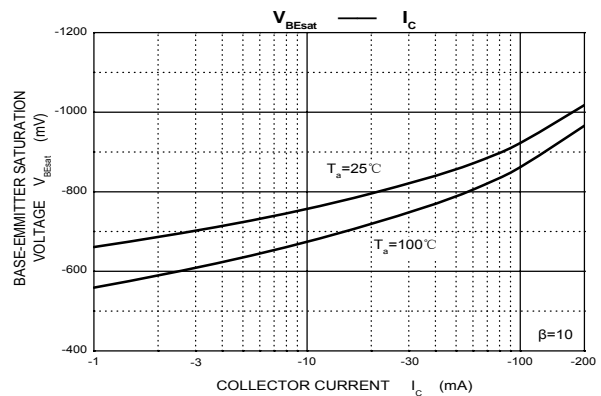
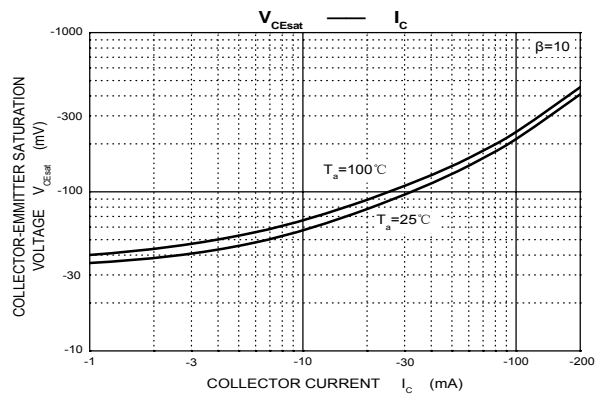
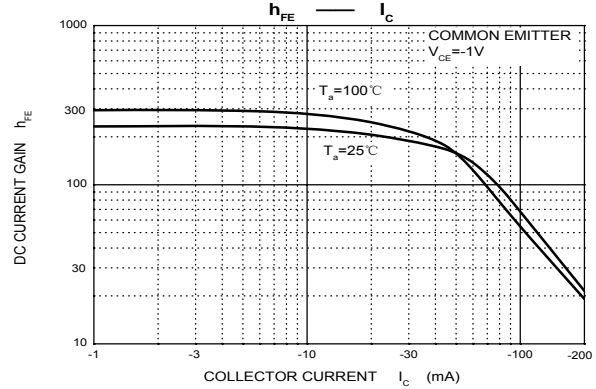
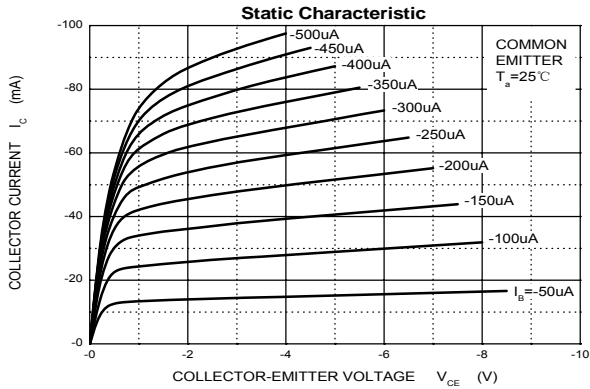
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V _{CBO}	I _C =-10μA, I _E =0	-40			V
Collector-Emitter Breakdown Voltage	V _{CEO}	I _C =-1mA, I _B =0	-40			V
Emitter-Base Breakdown Voltage	V _{EBO}	I _E =-10μA, I _C =0	-5			V
Collector Cut-off Current	I _{CBO}	V _{CB} =-40V, I _E =0			-0.1	μA
Collector Cut-off Current	I _{CEX}	V _{EC} =-30V, V _{BE} =-3V			-50	NA
Emitter Cut-off Current	I _{EBO}	V _{EB} =-5V, I _C =0			-0.1	μA
DC Current Gain	h _{FE(1)}	V _{CE} =-1V, I _C =-10mA	100		400	
	h _{FE(2)}	V _{CE} =-1V, I _C =-50mA	60			
	h _{FE(3)}	V _{CE} =-1V, I _C =-100mA	30			
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-50mA, I _B =-5mA			-0.4	V
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C =-50mA, I _B =-5mA			-0.95	V
Transition Frequency	f _T	V _{CE} =-20V, I _C =-10mA f=100MHz	250			MHz
Delay Time	td	V _{CC} =-3V, V _{BE} =-0.5V, I _C =-10mA, I _{B1} =-1mA			35	ns
Rise Time	tr				35	ns
Storage Time	ts	V _{CC} =-3V, I _C =-10mA I _{B1} =I _{B2} =-1mA			225	ns
Fall Time	tf				75	ns

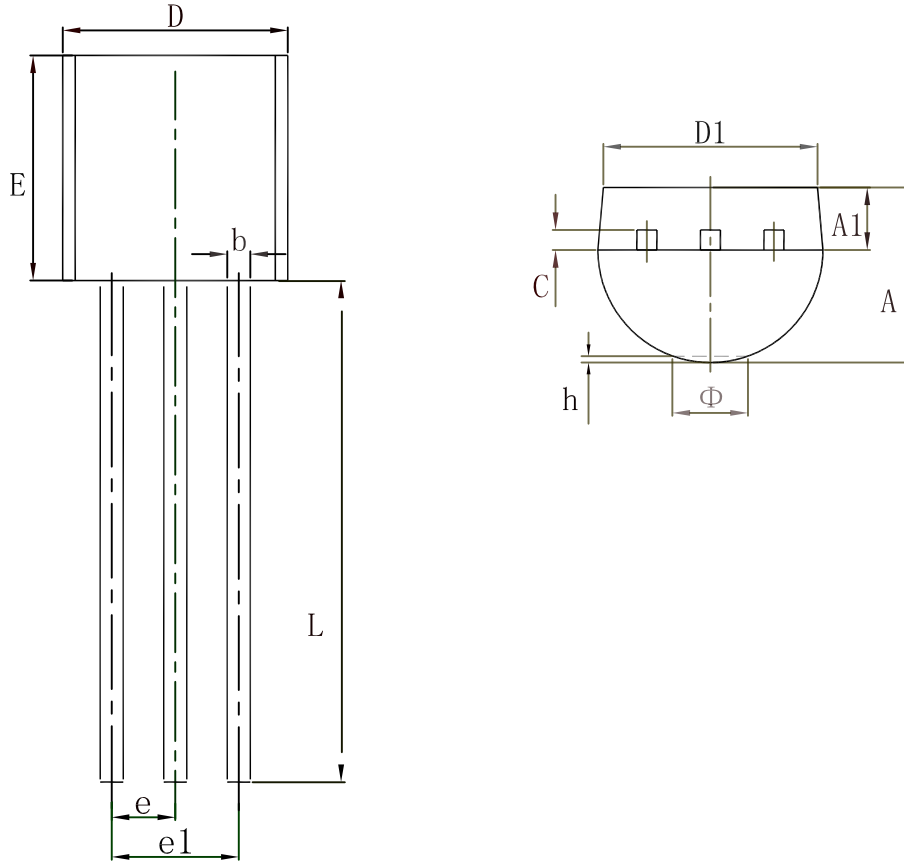
CLASSIFICATION OF h_{FE}

Rank	O	Y	G
Range	100-200	200-300	300-400

Typical Characteristics

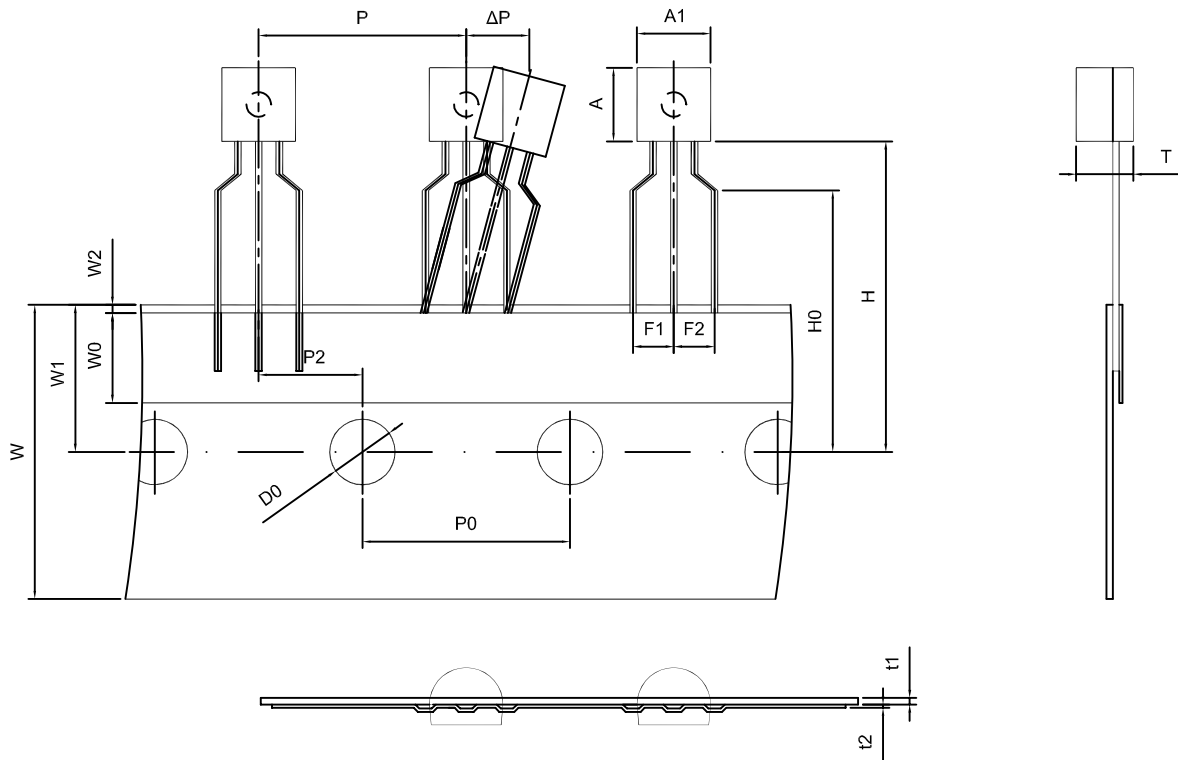


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Package Taping Dimension



Dimiensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.5±0.2	4.5±0.2	3.5±0.2	12.7±0.3	12.7±0.2	6.35±0.3	2.5±0.3	2.5±0.3	18.0+1.0/-0.5
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0±0.5	9.0±0.5	1.0 MAX.	19.0±1.0	16.0±0.5	4.0±0.5	0.4±0.05	0.2±0.05	0 ± 1.0

