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# 2SC1906

Silicon NPN Epitaxial Planar

# HITACHI

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## Application

- VHF amplifier
- Mixer, Local oscillator

## Outline

TO-92 (2)



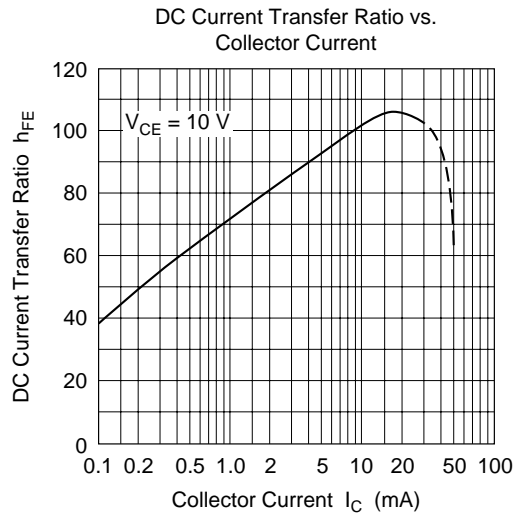
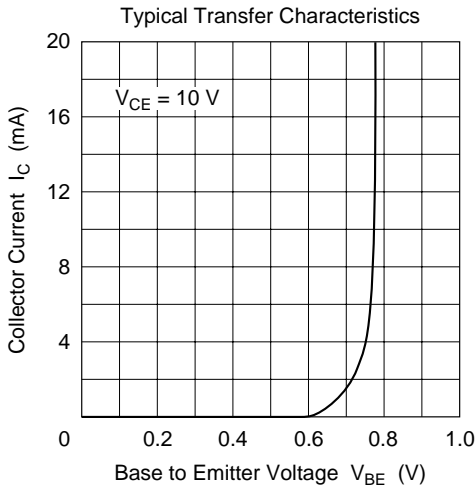
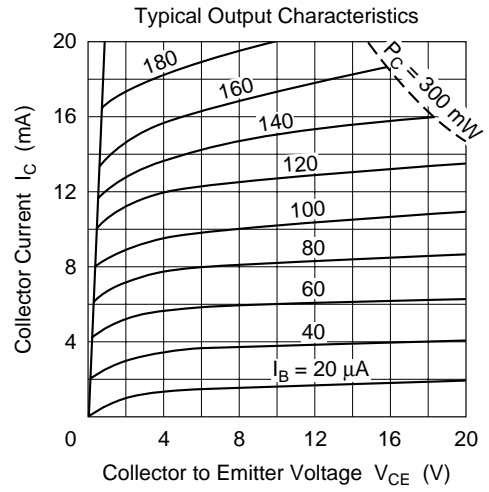
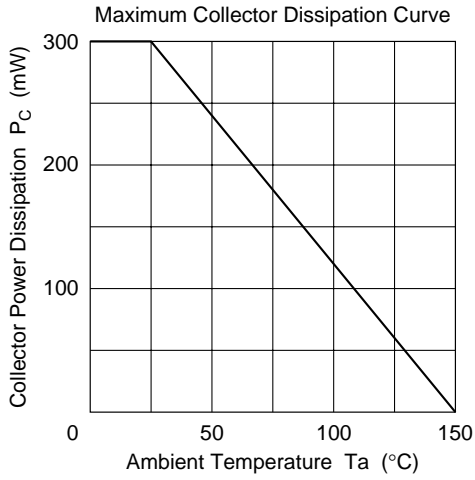
1. Emitter
2. Collector
3. Base

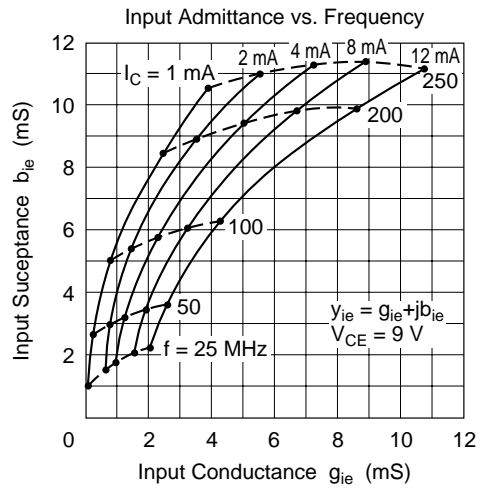
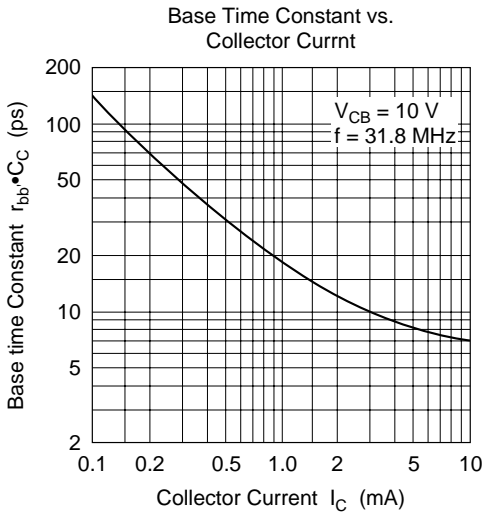
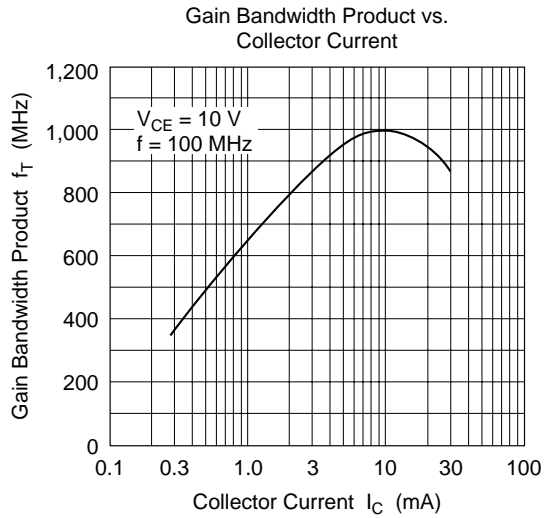
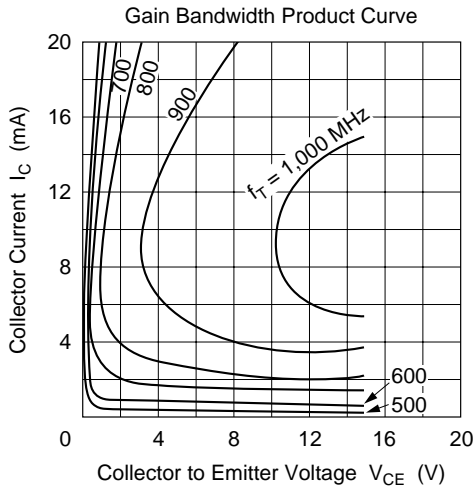
## Absolute Maximum Ratings (Ta = 25°C)

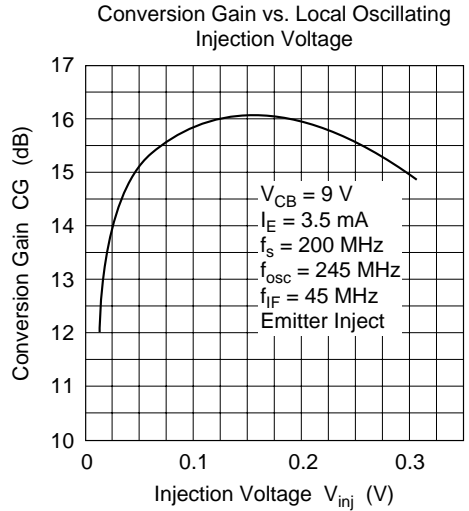
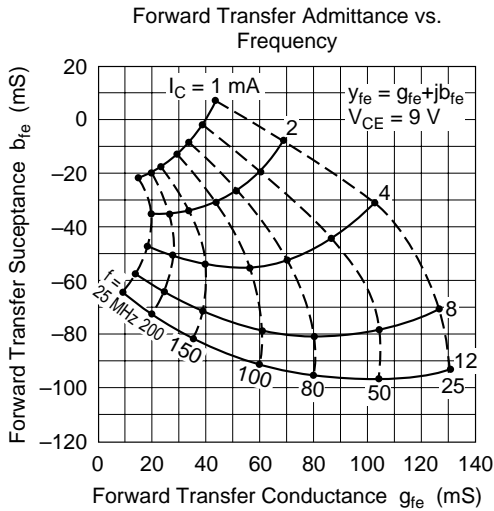
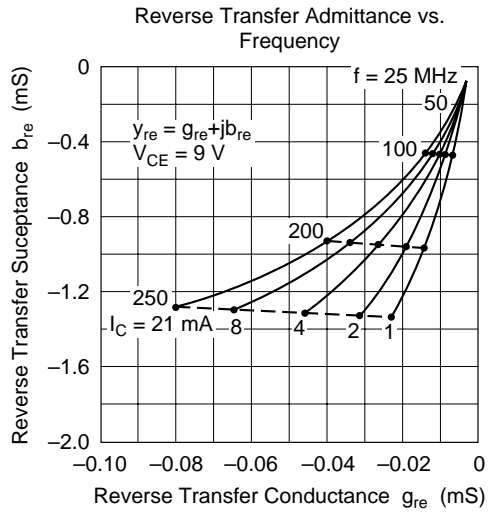
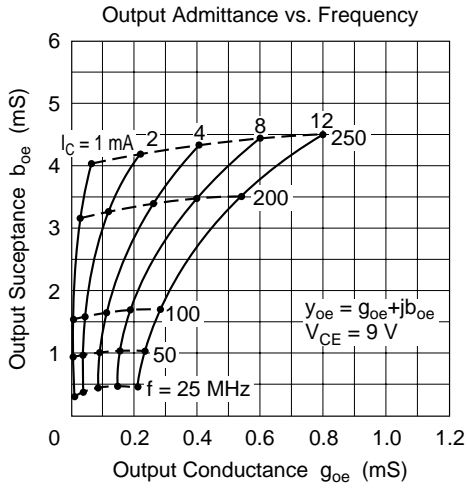
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	30	V
Collector to emitter voltage	$V_{CEO}$	19	V
Emitter to base voltage	$V_{EBO}$	2	V
Collector current	$I_C$	50	mA
Emitter current	$I_E$	-50	mA
Collector power dissipation	$P_C$	300	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

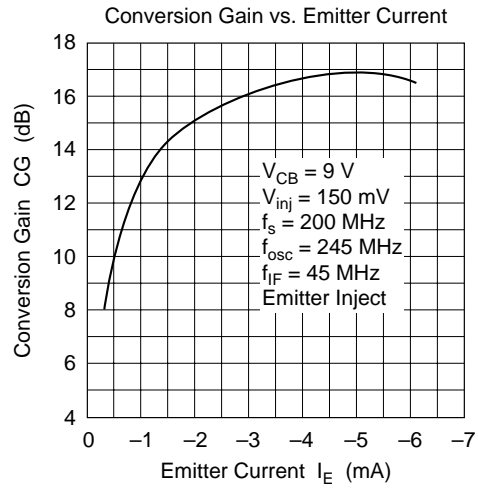
## Electrical Characteristics (Ta = 25°C)

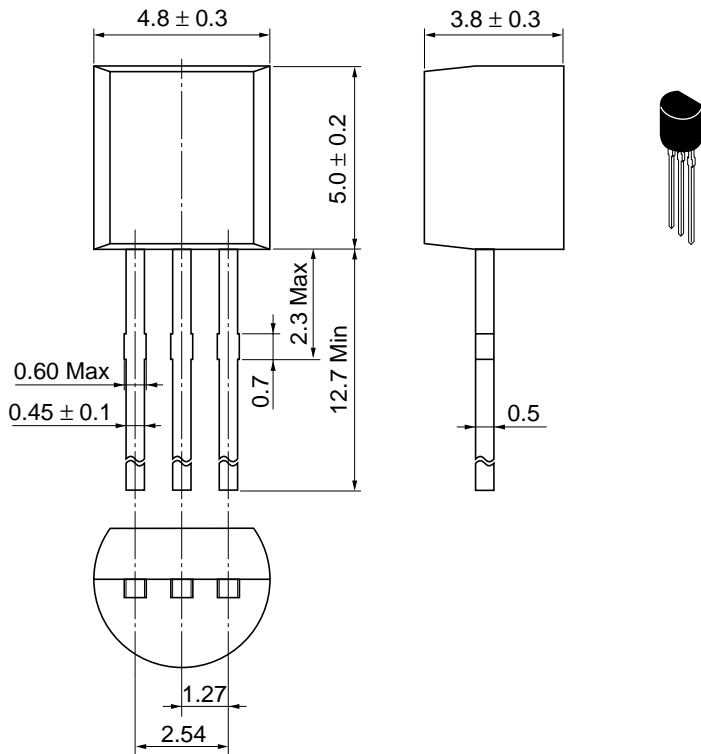
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	19	—	—	V	$I_C = 3 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	2	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB} = 10 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE}$	40	—	—		$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$
Gain bandwidth product	$f_T$	600	1000	—	MHz	$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	1.0	2.0	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.2	1.0	V	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$
Base time constant	$r_{bb'} \cdot C_C$	—	10	25	ps	$V_{CB} = 10 \text{ V}, I_C = 10 \text{ mA}, f = 31.8 \text{ MHz}$
Power gain	PG	—	33	—	dB	$V_{CE} = 10 \text{ V}, f = 45 \text{ MHz}$ $I_C = 5 \text{ mA}$
		—	18	—	dB	$V_{CE} = 10 \text{ V}, f = 200 \text{ MHz}$ $I_C = 5 \text{ mA}$











Hitachi Code	TO-92 (2)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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