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# 2SC2471

Silicon NPN Epitaxial

# HITACHI

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## Application

- UHF Amplifier
- UHF TV Tuner, Local oscillator

## Outline

TO-92 (2)



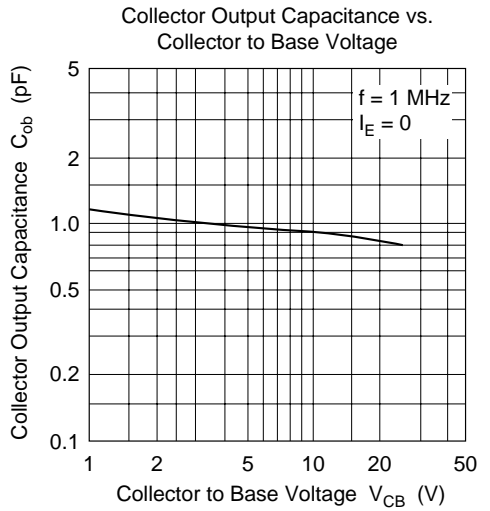
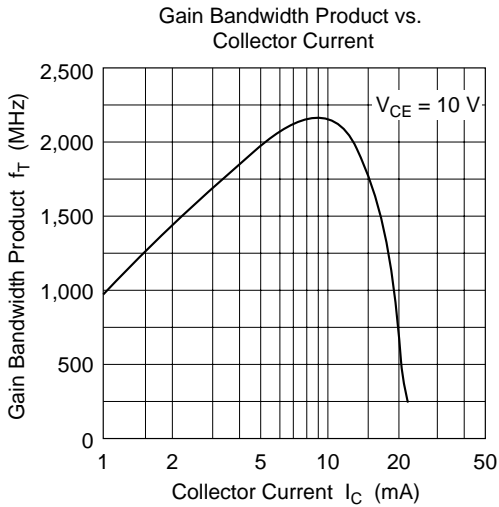
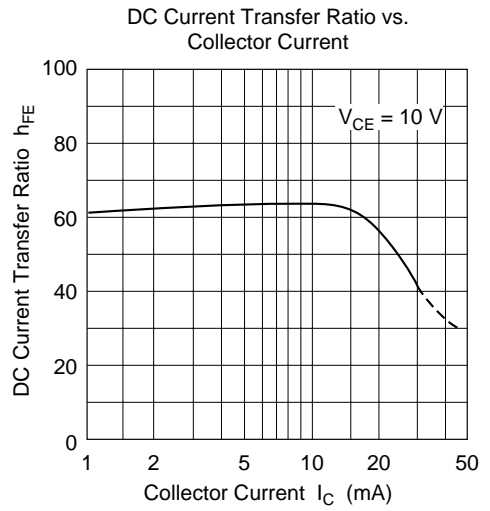
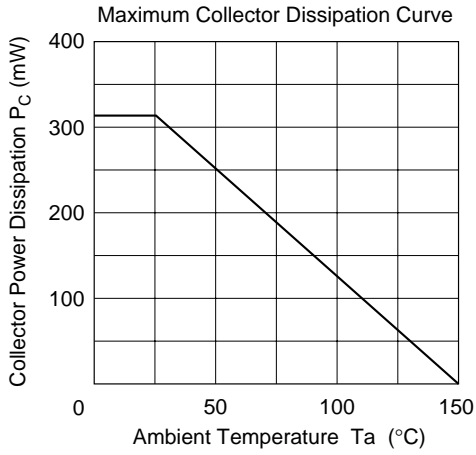
1. Base
2. Emitter
3. Collector

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

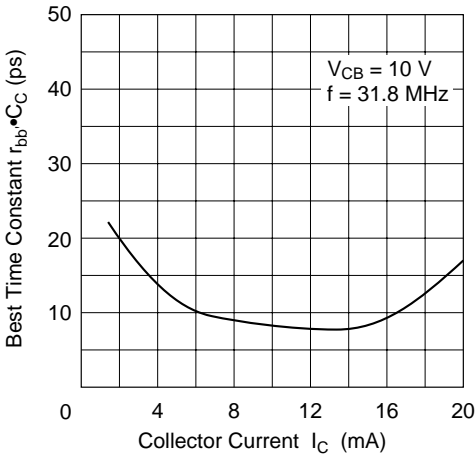
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{\text{CBO}}$	30	V
Collector to emitter voltage	$V_{\text{CEO}}$	30	V
Emitter to base voltage	$V_{\text{EBO}}$	3	V
Collector current	$I_{\text{C}}$	50	mA
Collector power dissipation	$P_{\text{C}}$	310	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

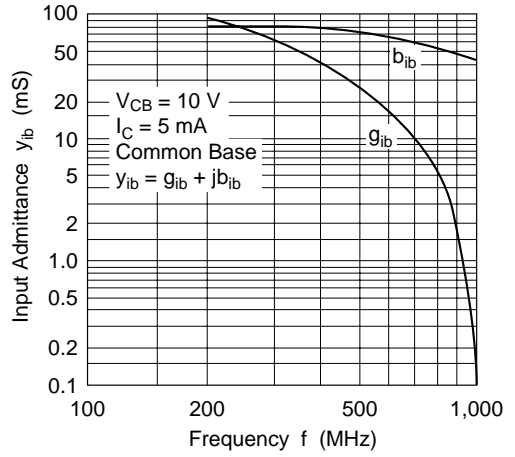
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	30	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$ , $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	30	—	—	V	$I_{\text{C}} = 1 \text{ mA}$ , $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	3	—	—	V	$I_{\text{E}} = 10 \mu\text{A}$ , $I_{\text{C}} = 0$
Collector cutoff current	$I_{\text{CBO}}$	—	—	100	nA	$V_{\text{CB}} = 24 \text{ V}$ , $I_{\text{E}} = 0$
Emitter cutoff current	$I_{\text{EBO}}$	—	—	100	nA	$V_{\text{EB}} = 2 \text{ V}$ , $I_{\text{C}} = 0$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	—	300	mV	$I_{\text{C}} = 10 \text{ mA}$ , $I_{\text{B}} = 5 \text{ mA}$
Base to emitter voltage	$V_{\text{BE}}$	—	—	0.95	V	$V_{\text{CE}} = 10 \text{ V}$ , $I_{\text{C}} = 5 \text{ mA}$
DC current transfer ratio	$h_{\text{FE}}$	20	—	—		$V_{\text{CE}} = 10 \text{ V}$ , $I_{\text{C}} = 5 \text{ mA}$
Gain bandwidth product	$f_{\text{T}}$	1000	2000	—	MHz	$V_{\text{CE}} = 10 \text{ V}$ , $I_{\text{C}} = 5 \text{ mA}$
Collector output capacitance	$C_{\text{ob}}$	—	0.9	1.5	pF	$V_{\text{CB}} = 10 \text{ V}$ , $I_{\text{E}} = 0$ , $f = 1 \text{ MHz}$
Base time constant	$r_{\text{bb}'} \cdot C_{\text{C}}$	—	12	20	ps	$V_{\text{CB}} = 10 \text{ V}$ , $I_{\text{C}} = 5 \text{ mA}$ , $f = 31.8 \text{ MHz}$



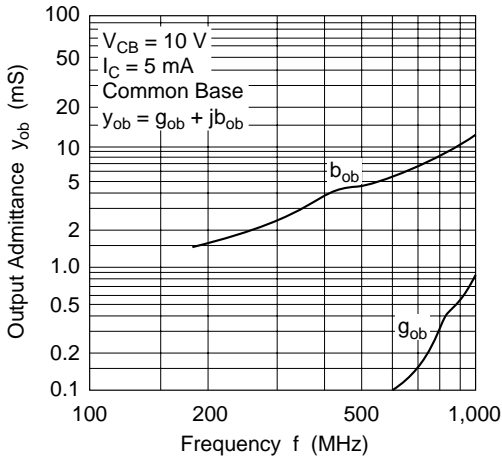
Base Time Constant vs. Collector Current



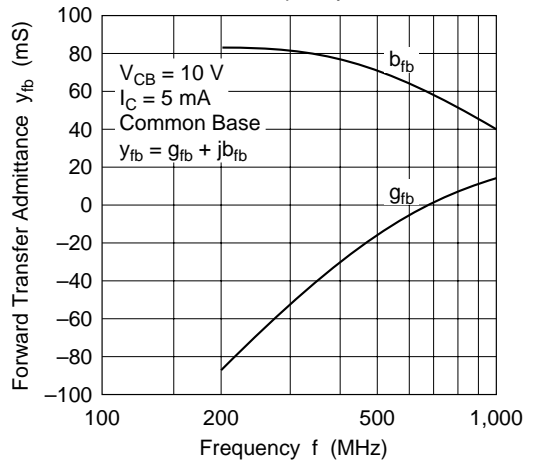
Input Admittance vs. Frequency

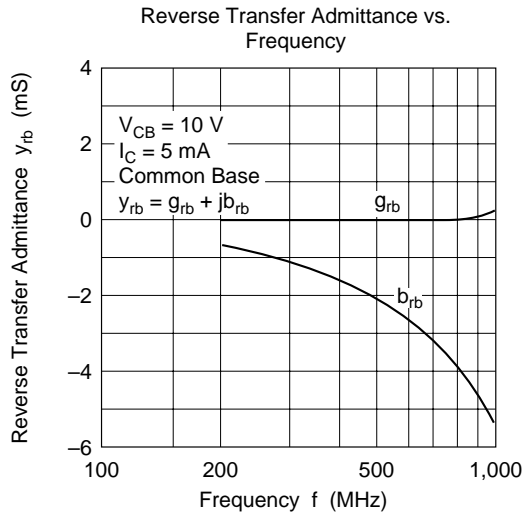


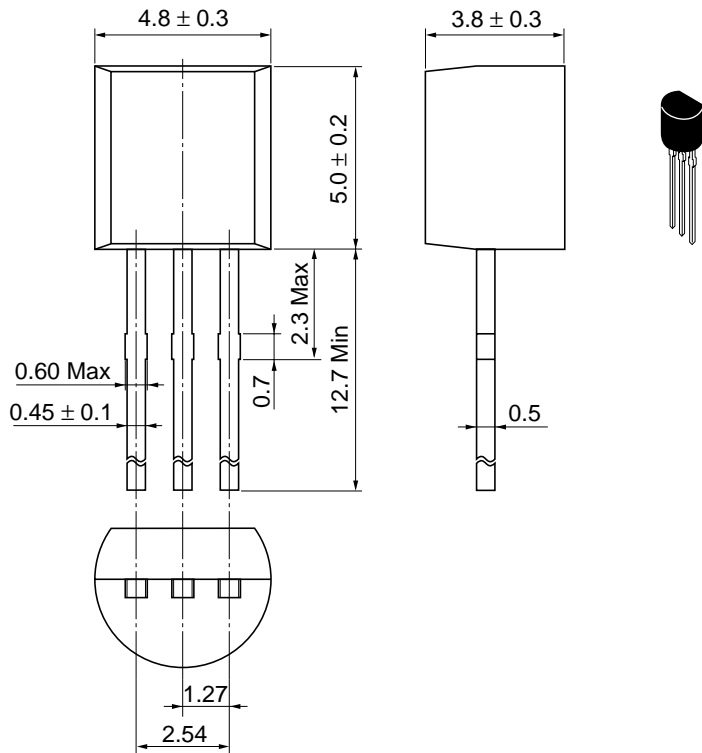
Output Admittance vs. Frequency



Forward Transfer Admittance vs. Frequency







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

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