2SC1907

Silicon NPN Epitaxial Planar

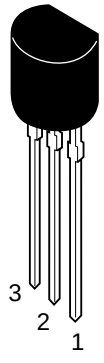
HITACHI

Application

UHF TV Tuner, Local oscillator

Outline

TO-92 (2)



1. Emitter
2. Collector
3. Base

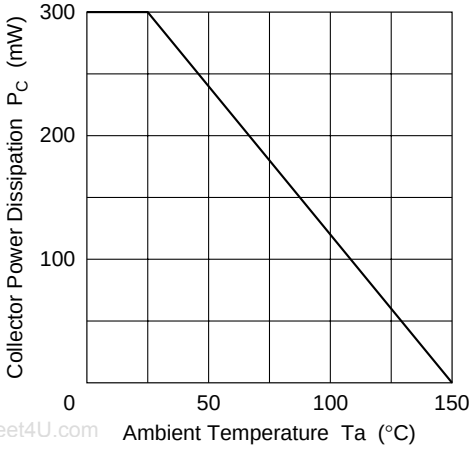
Absolute Maximum Ratings (Ta = 25°C)

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	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

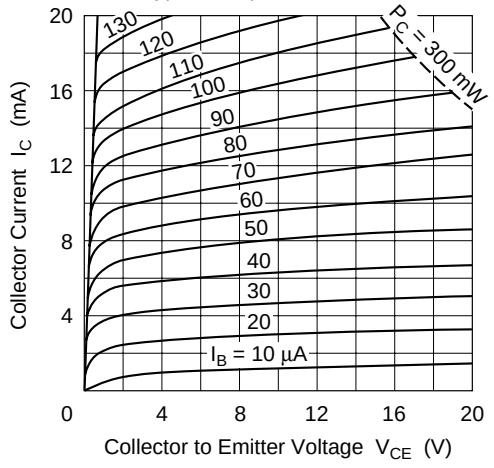
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	19	—	—	V	I_C = 3 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	2	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.5	µA	V_{CB} = 10 V, I_E = 0
DC current transfer ratio	h_{FE}	40	—	—		V_{CE} = 10 V, I_C = 10 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.2	1.0	V	I_C = 20 mA, I_B = 4 mA
Collector output capacitance	Cob	—	1.0	2.0	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Gain bandwidth product	f_T	900	1100	—	MHz	V_{CE} = 10 V, I_C = 10 mA
Base time constant	$r_{bb'} \cdot C_C$	—	10	25	ps	V_{CB} = 10 V, I_C = 10 mA, f = 31.8 MHz
Oscillation output power	P_{out}	—	8	—	mW	V_{CB} = 10 V, I_C = 10 mA, f = 930 MHz

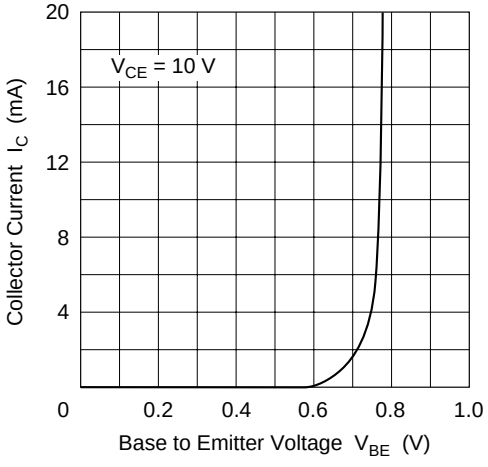
Maximum Collector Dissipation Curve



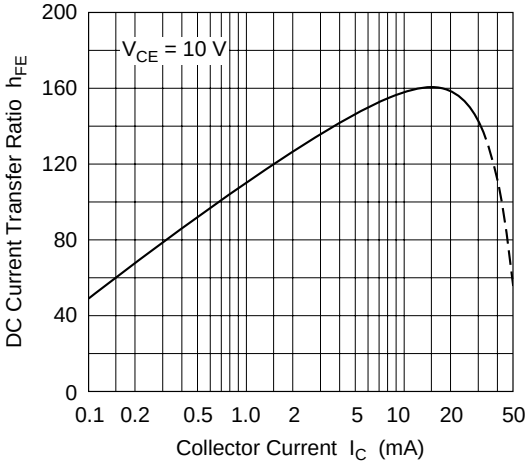
Typical Output Caracteristics



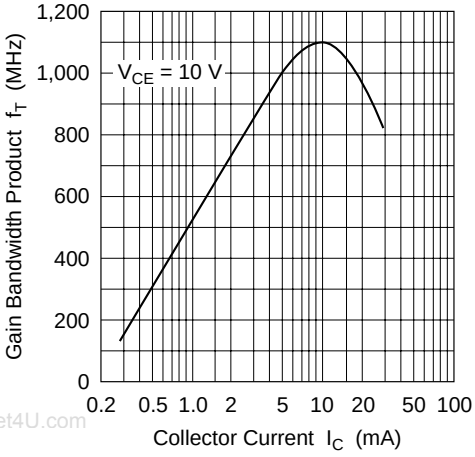
Typical Transfer Caracteristics



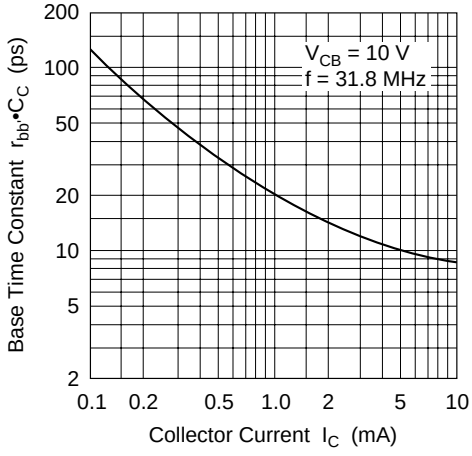
DC Current Transfer Ratio vs. Collector Current



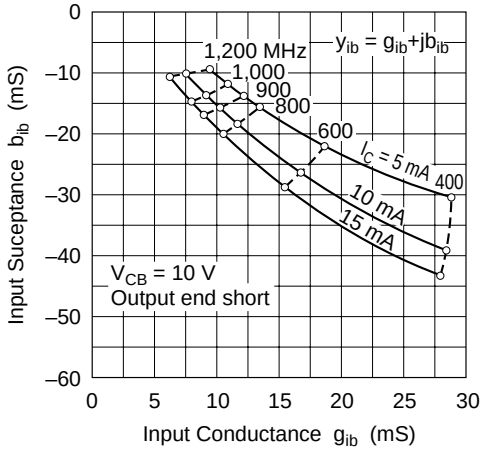
Gain Bandwidth Product vs. Collector Current



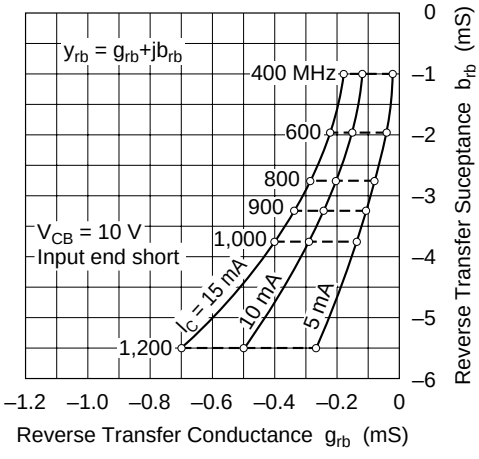
Base Time Constant vs. Collector Current

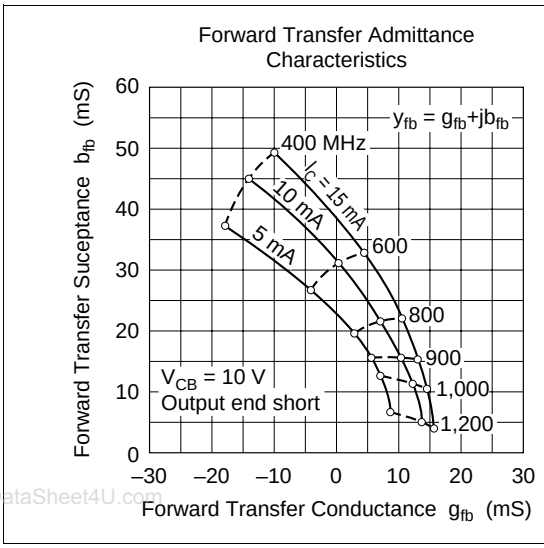


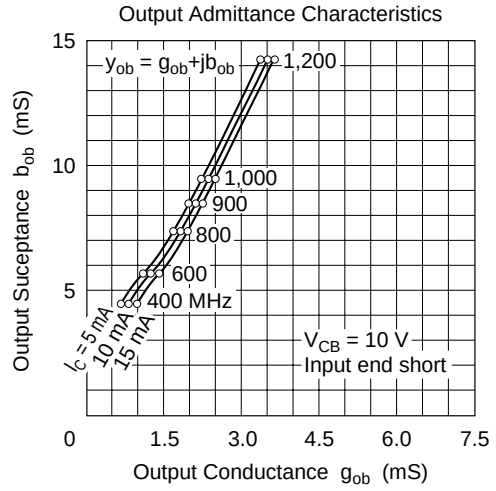
Input Admittance Characteristics



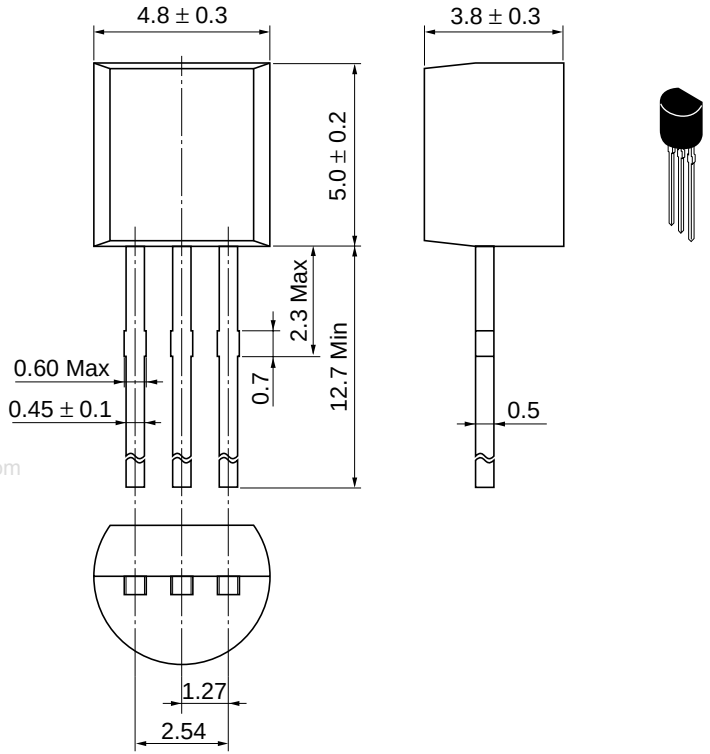
Reverse Transfer Admittance Characteristics







Unit: mm



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

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