
2SC1907

Silicon NPN Epitaxial Planar

HITACHI

ADE-208-1059 (Z)

1st. Edition

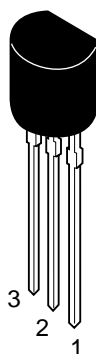
Mar. 2001

Application

UHF TV Tuner, Local oscillator

Outline

TO-92 (2)



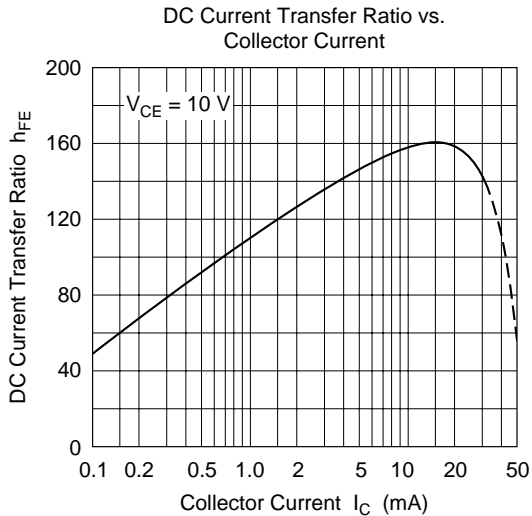
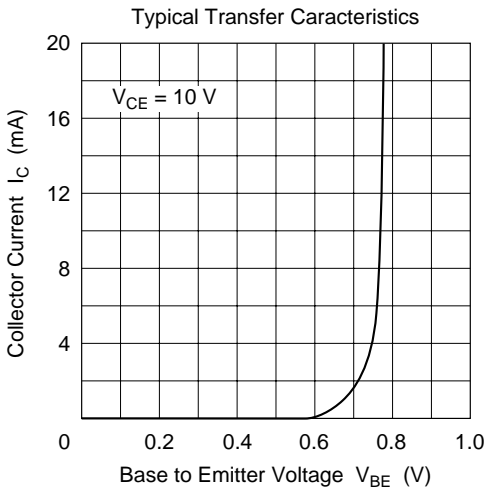
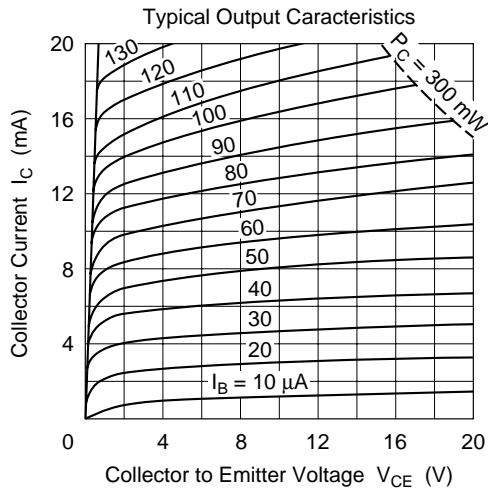
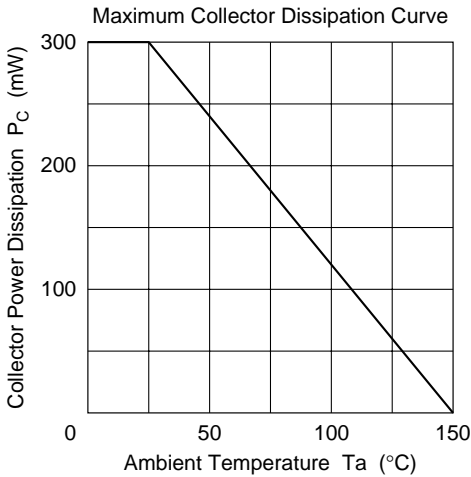
- 1. Emitter
- 2. Collector
- 3. Base

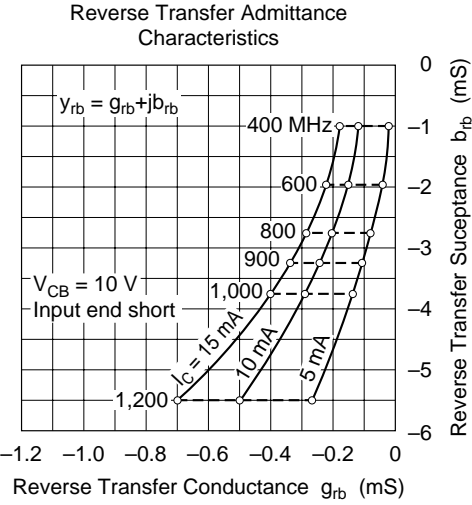
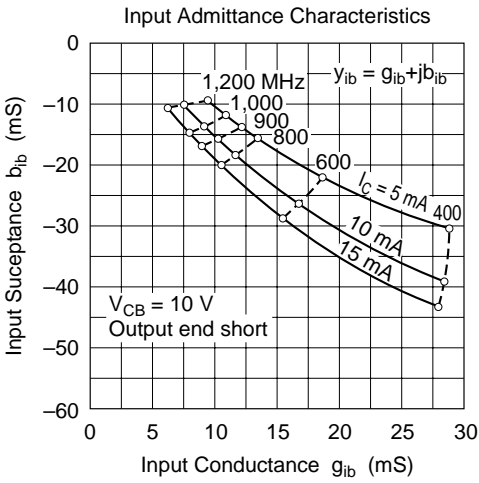
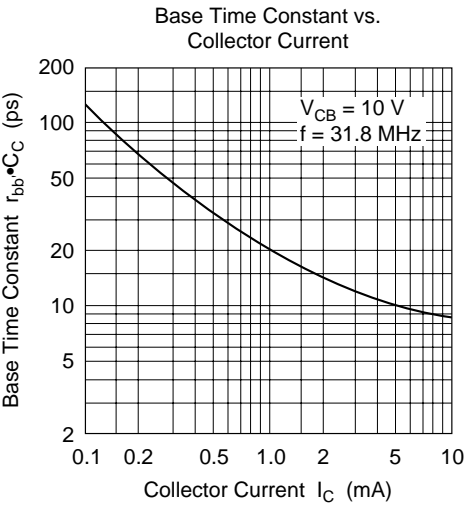
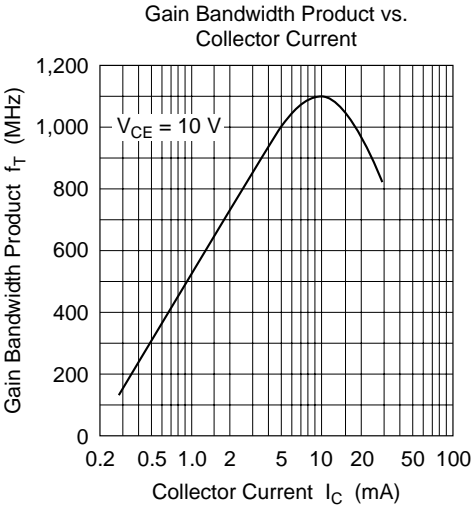
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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	$^\circ\text{C}$
Storage temperature	T_{stg}	−55 to +150	$^\circ\text{C}$

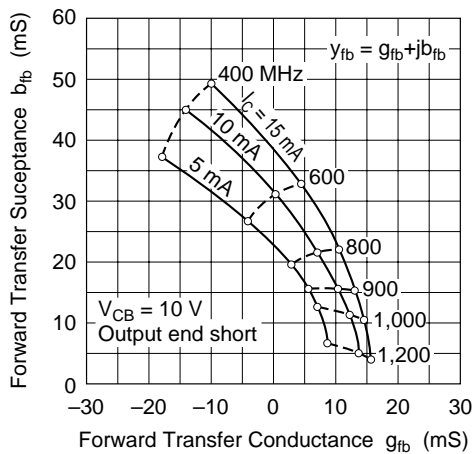
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	30	—	—	V	$I_{\text{C}} = 10\text{ }\mu\text{A}$, $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	19	—	—	V	$I_{\text{C}} = 3\text{ mA}$, $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	2	—	—	V	$I_{\text{E}} = 10\text{ }\mu\text{A}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{\text{CB}} = 10\text{ V}$, $I_{\text{E}} = 0$
DC current transfer ratio	h_{FE}	40	—	—		$V_{\text{CE}} = 10\text{ V}$, $I_{\text{C}} = 10\text{ mA}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	0.2	1.0	V	$I_{\text{C}} = 20\text{ mA}$, $I_{\text{B}} = 4\text{ mA}$
Collector output capacitance	C_{ob}	—	1.0	2.0	pF	$V_{\text{CB}} = 10\text{ V}$, $I_{\text{E}} = 0$, $f = 1\text{ MHz}$
Gain bandwidth product	f_{T}	900	1100	—	MHz	$V_{\text{CE}} = 10\text{ V}$, $I_{\text{C}} = 10\text{ mA}$
Base time constant	$r_{\text{bb}'} \cdot C_{\text{C}}$	—	10	25	ps	$V_{\text{CB}} = 10\text{ V}$, $I_{\text{C}} = 10\text{ mA}$, $f = 31.8\text{ MHz}$
Oscillation output power	P_{out}	—	8	—	mW	$V_{\text{CB}} = 10\text{ V}$, $I_{\text{C}} = 10\text{ mA}$, $f = 930\text{ MHz}$

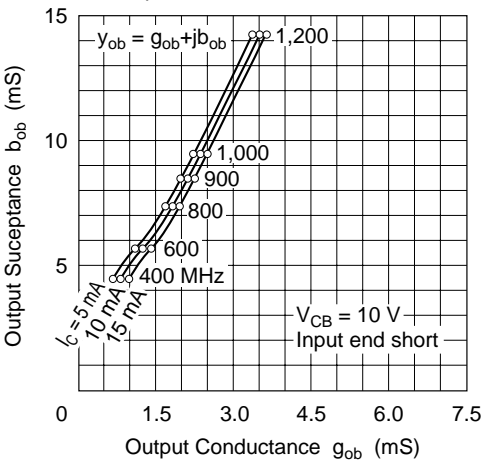




Forward Transfer Admittance Characteristics

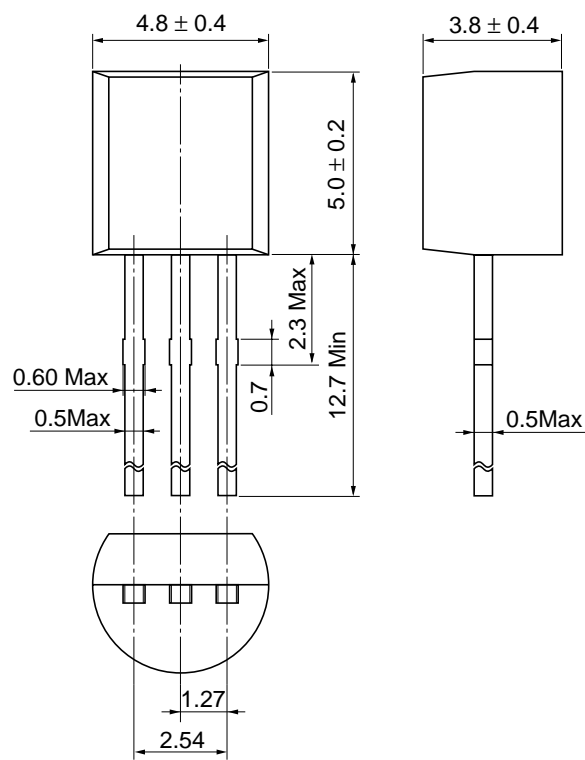


Output Admittance Characteristics



Package Dimensions

As of January, 2001
Unit: mm



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

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