2SA872, 2SA872A

Silicon PNP Epitaxial

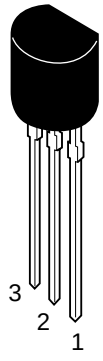
HITACHI

Application

- Low frequency low noise amplifier
- Complementary pair with 2SC1775/A

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	2SA872	2SA872A	Unit
Collector to base voltage	V_{CBO}	–90	–120	V
Collector to emitter voltage	V_{CEO}	–90	–120	V
Emitter to base voltage	V_{EBO}	–5	–5	V
Collector current	I_C	–50	–50	mA
Collector power dissipation	P_C	300	300	mW
Junction temperature	Tj	150	150	°C
Storage temperature	Tstg	–55 to +150	–50 to +150	°C

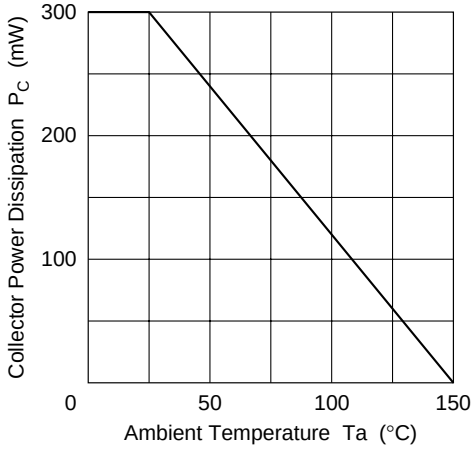
Electrical Characteristics (Ta = 25°C)

		2SA872			2SA872A				
Item	Symbol	Min	Typ	Max	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–90	—	—	–120	—	—	V	I_C = –1 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	–0.5	—	—	—	µA	V_{CB} = –75 V, I_E = 0
		—	—	—	—	—	–0.5	µA	V_{CE} = –100 V, I_E = 0
DC current tarnsfer ratio	h_{FE1}*[1]	250	—	800	250	—	800		V_{CE} = –12 V, I_C = –2 mA
	h_{FE2}	160	—	—	160	—	—		V_{CE} = –12 V, I_C = –0.1 mA
Base to emitter voltage	V_{BE}	—	—	–0.75	—	—	–0.75	V	V_{CE} = –12 V, I_C = –2 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	–0.5	—	—	–0.5	V	I_C = –10 mA, I_B = –1 mA
Gain bandwidth product	f_T	—	120	—	—	120	—	MHz	V_{CE} = –12 V, I_C = –2 mA
Collector output capacitance	Cob	—	1.8	—	—	1.8	—	pF	V_{CB} = –25 V, I_E = 0, f = 1 MHz
Noise figure	NF	—	—	5.0	—	—	5.0	dB	V_{CE} = –6 V, I_C = –50 µA, R_g = 50 kΩ, f = 10 Hz
		—	—	1.5	—	—	1.5	dB	f = 1 kHz

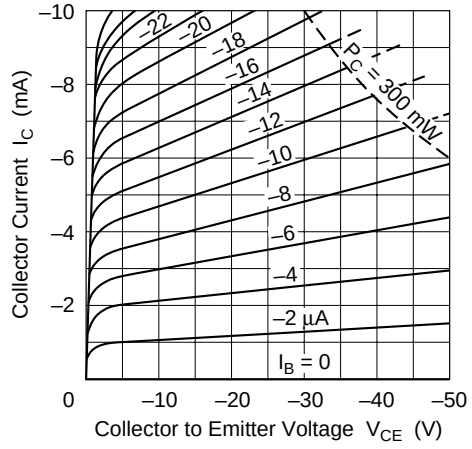
Note: 1. The 2SA872/A is grouped by h_{FE1} as follows.

D	E
250 to 500	400 to 800

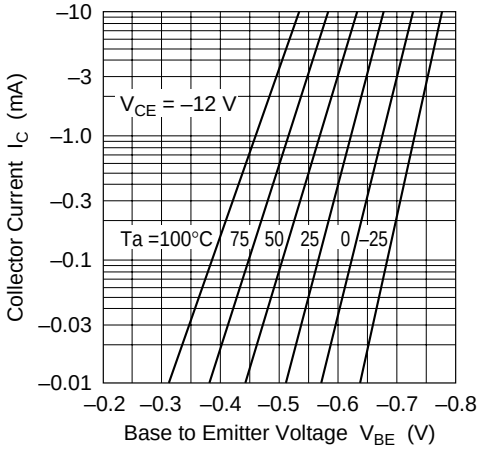
Maximum Collector Dissipation Curve



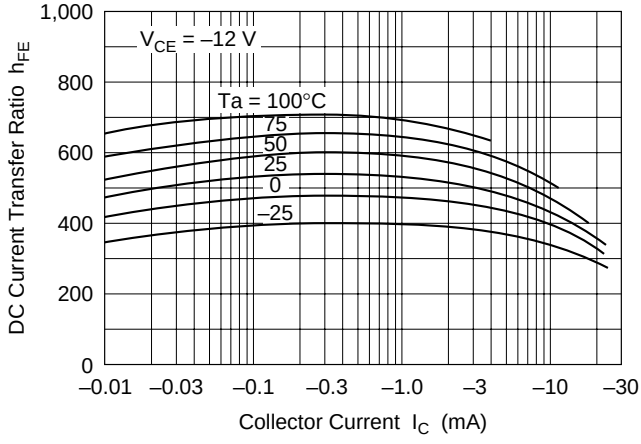
Typical Output Characteristics



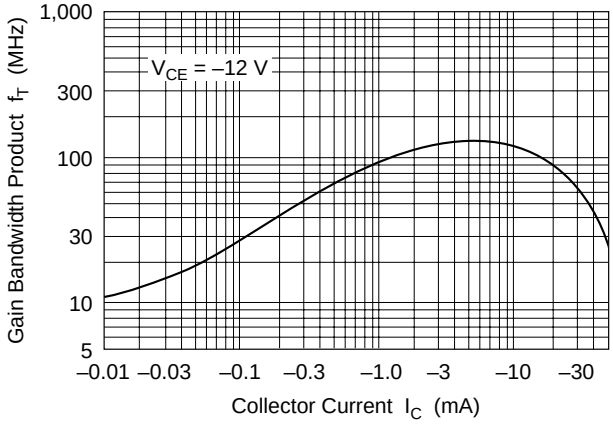
Typical Transfer Characteristics



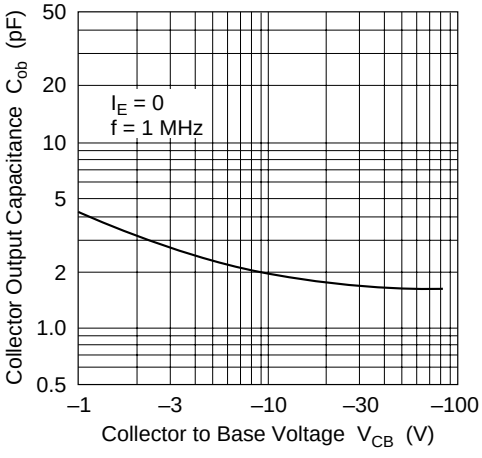
DC Current Transfer Ratio vs. Collector Current



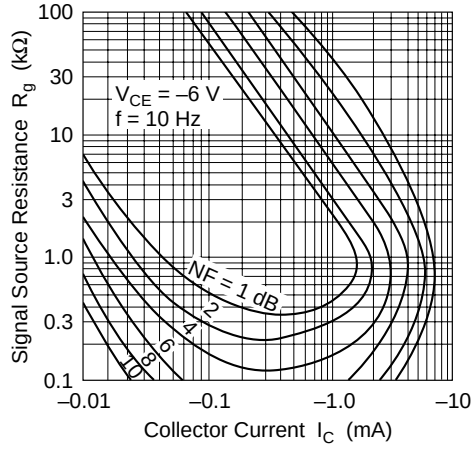
Gain Bandwidth Product vs. Collector Current



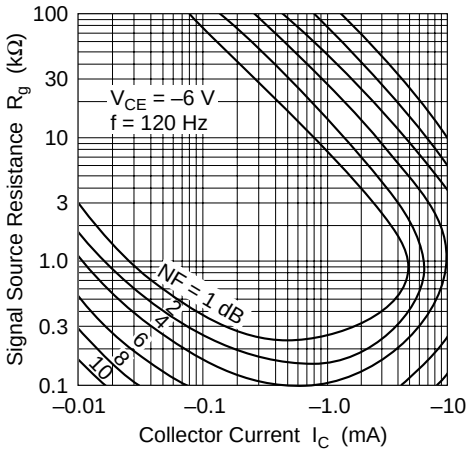
Collector Output Capacitance vs. Collector to Base Voltage



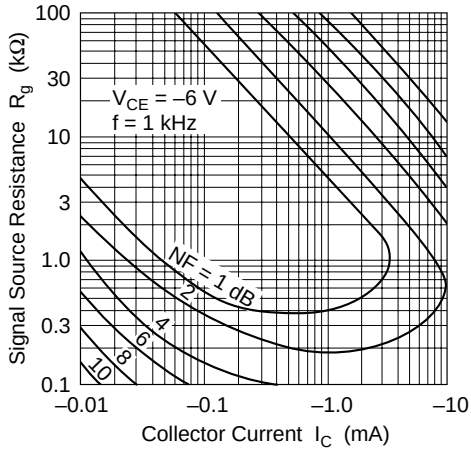
Contours of Constant Noise Figure (1)



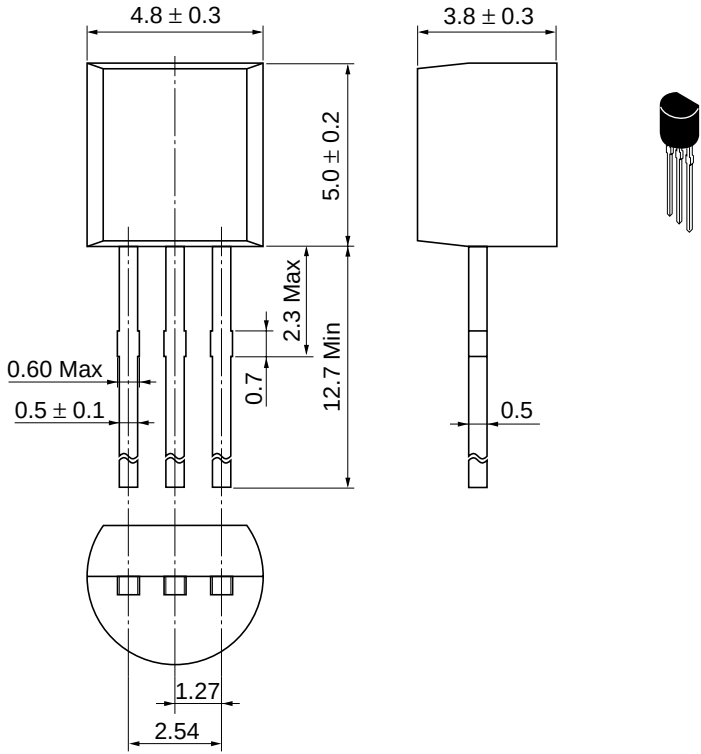
Contours of Constant Noise Figure (2)



Contours of Constant Noise Figure (3)



Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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