

2SA872A

Silicon PNP Epitaxial

REJ03G0631-0200
(Previous ADE-208-1001)
Rev.2.00
Aug.10.2005

Application

- Low frequency low noise amplifier
- Complementary pair with 2SC1775A

Outline

RENESAS Package code: PRSS0003DA-A
(Package name: TO-92 (1))



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}	-120	V
Collector to emitter voltage	V_{CEO}	-120	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current	I_C	-50	mA
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-50 to +150	$^\circ\text{C}$

Electrical Characteristics

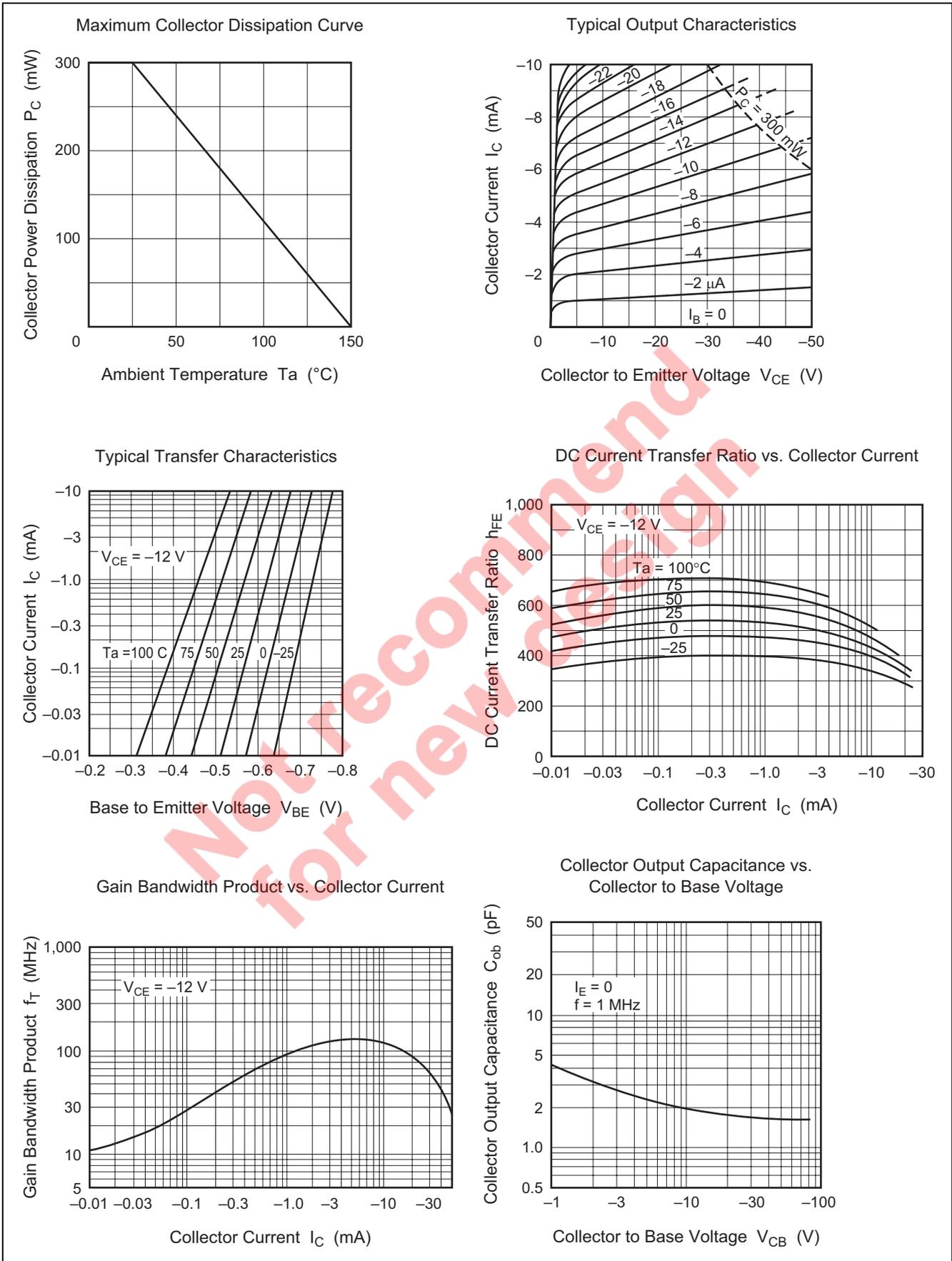
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-120	—	—	V	$I_C = -1 \text{ mA}$, $R_{BE} = \infty$
Collector cutoff current	I_{CBO}	—	—	—	μA	$V_{CB} = -75 \text{ V}$, $I_E = 0$
		—	—	-0.5	μA	$V_{CE} = -100 \text{ V}$, $I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	250	—	800		$V_{CE} = -12 \text{ V}$, $I_C = -2 \text{ mA}$
	h_{FE2}	160	—	—		$V_{CE} = -12 \text{ V}$, $I_C = -0.1 \text{ mA}$
Base to emitter voltage	V_{BE}	—	—	-0.75	V	$V_{CE} = -12 \text{ V}$, $I_C = -2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.5	V	$I_C = -10 \text{ mA}$, $I_B = -1 \text{ mA}$
Gain bandwidth product	f_T	—	120	—	MHz	$V_{CE} = -12 \text{ V}$, $I_C = -2 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.8	—	pF	$V_{CB} = -25 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$
Noise figure	NF	—	—	5.0	dB	$V_{CE} = -6 \text{ V}$, $I_C = -50 \mu\text{A}$, $R_g = 50 \text{ k}\Omega$, $f = 10 \text{ Hz}$
		—	—	1.5	dB	$f = 1 \text{ kHz}$

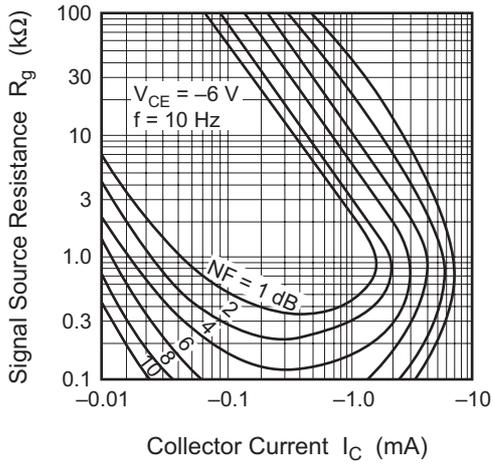
Note: 1. The 2SA872A is grouped by h_{FE1} as follows.

D	E
250 to 500	400 to 800

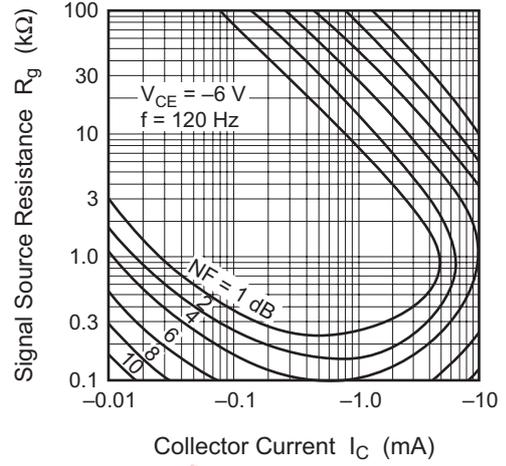
Main Characteristics



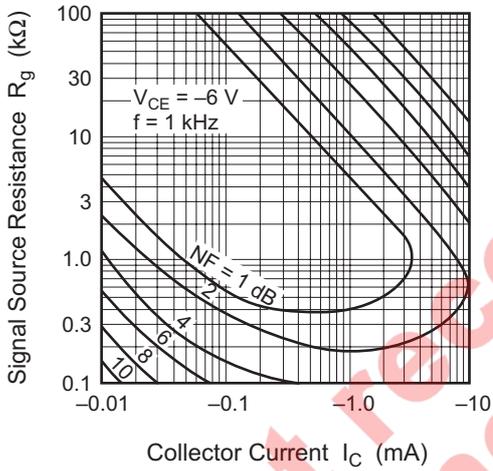
Contours of Constant Noise Figure (1)



Contours of Constant Noise Figure (2)

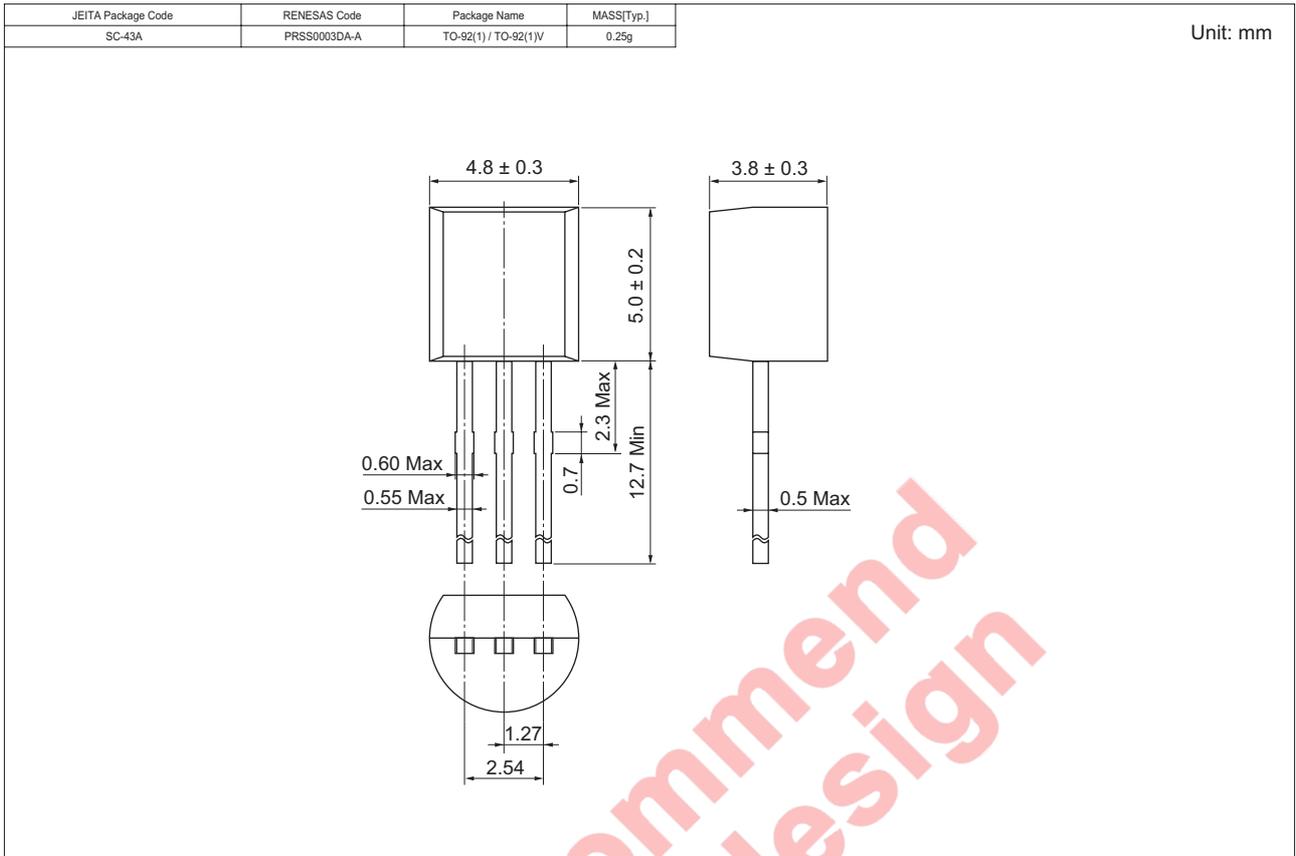


Contours of Constant Noise Figure (3)



Not recommended for new design

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SA872ADTZ 2SA872AETZ	2500	Hold Box, Radial Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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