

## 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

(Ta = 25°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	°C
Storage temperature	$T_{stg}$	-50 to +150	°C

## Electrical Characteristics

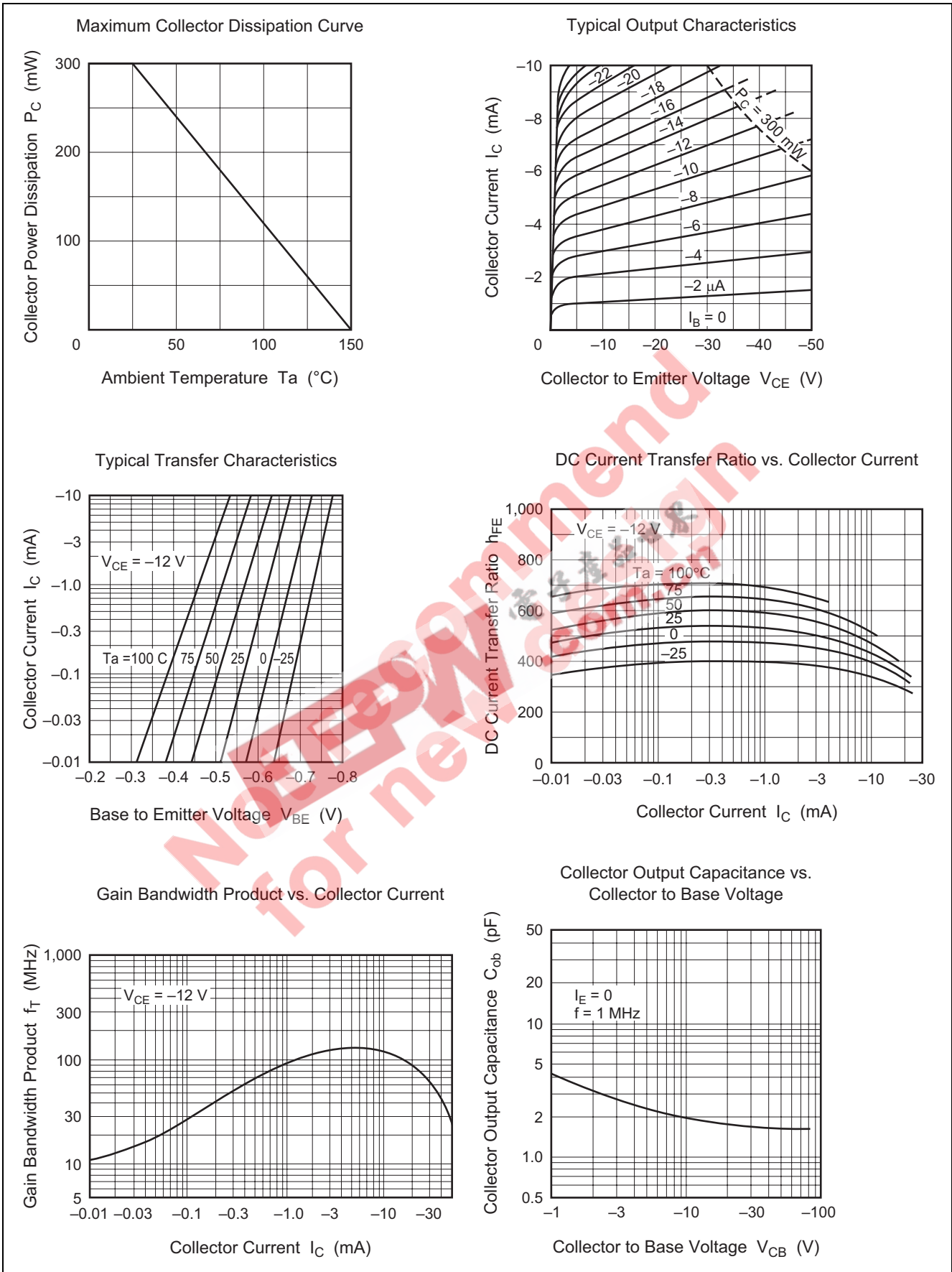
(Ta = 25°C)

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	$I_{CBO}$	—	—	—	$\mu\text{A}$	$V_{CB} = -75 \text{ V}$ , $I_E = 0$
		—	—	-0.5	$\mu\text{A}$	$V_{CE} = -100 \text{ V}$ , $I_E = 0$
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	$V_{CE} = -6 \text{ V}$ , $f = 10 \text{ Hz}$ $I_C = -50 \mu\text{A}$ $R_g = 50 \text{ k}\Omega$
		—	—	1.5	dB	$f = 1 \text{ kHz}$

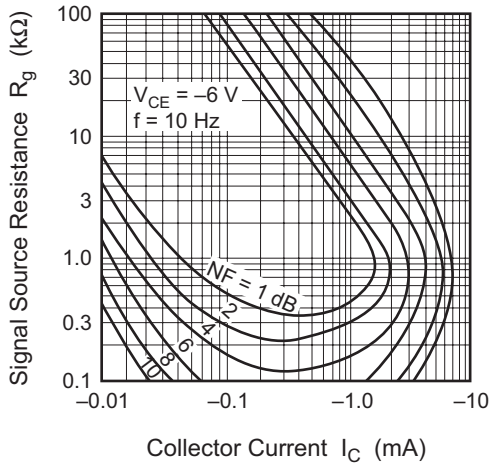
Note: 1. The 2SA872A is grouped by  $h_{FE1}$  as follows.

D	E
250 to 500	400 to 800

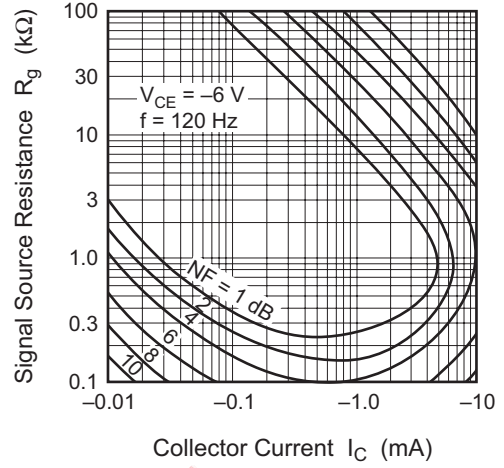
Main Characteristics



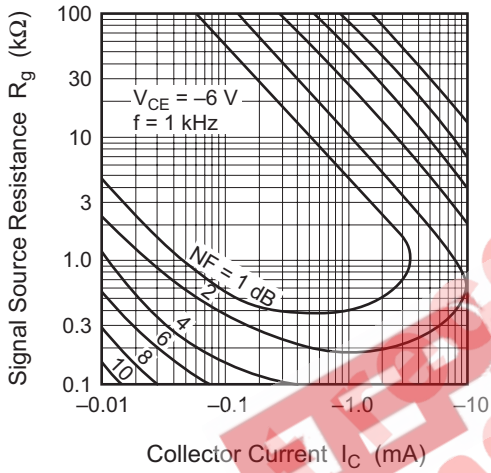
Contours of Constant Noise Figure (1)



Contours of Constant Noise Figure (2)

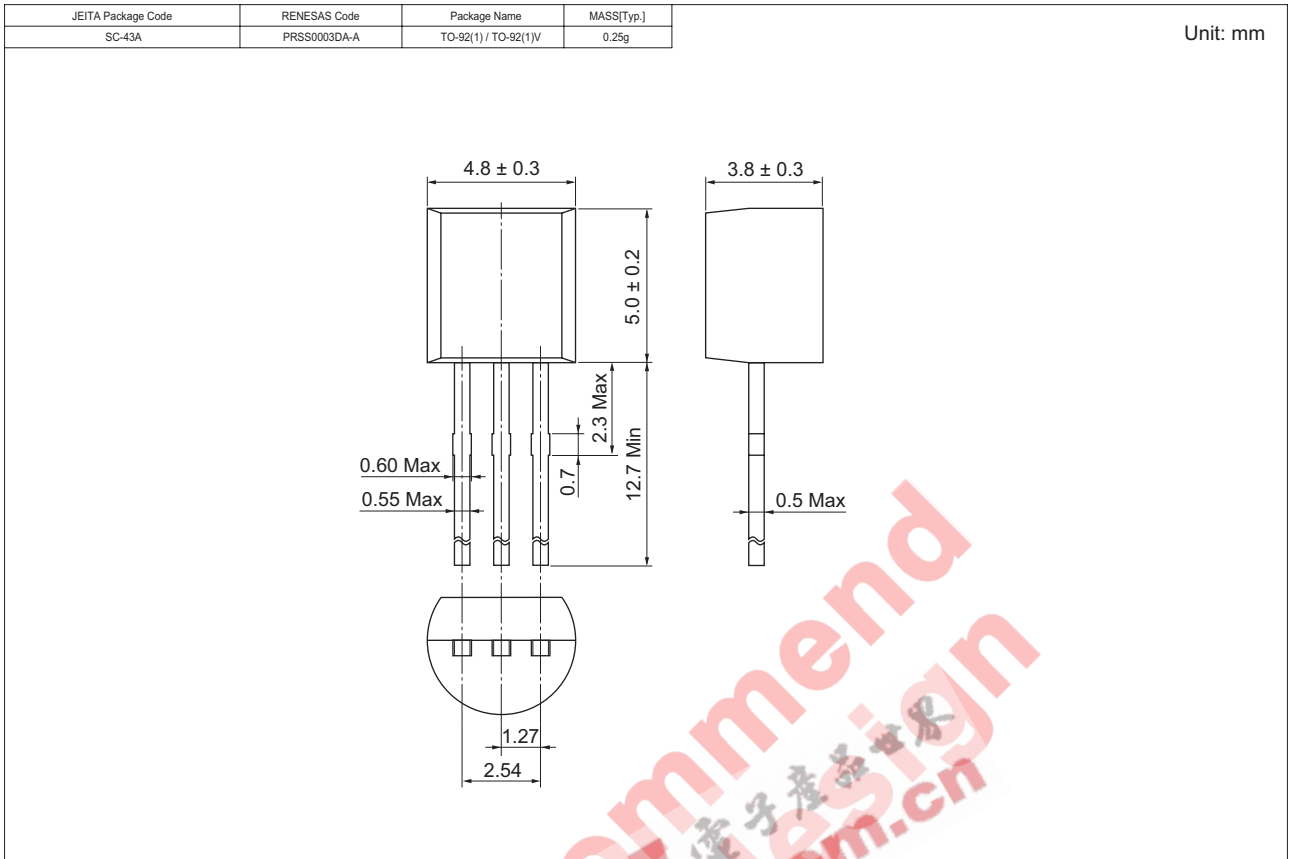


Contours of Constant Noise Figure (3)



Not recommended  
 for new design  
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### 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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