



2SC1775A

Silicon NPN Epitaxial

REJ03G0690-0300
(Previous ADE-208-1056)
Rev.3.00
Mar 03, 2006

Application

- Low frequency low noise amplifier
- Complementary pair with 2SA872A

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	Rating	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

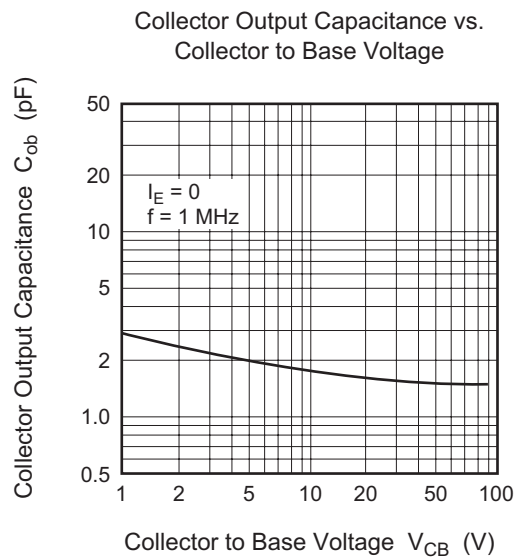
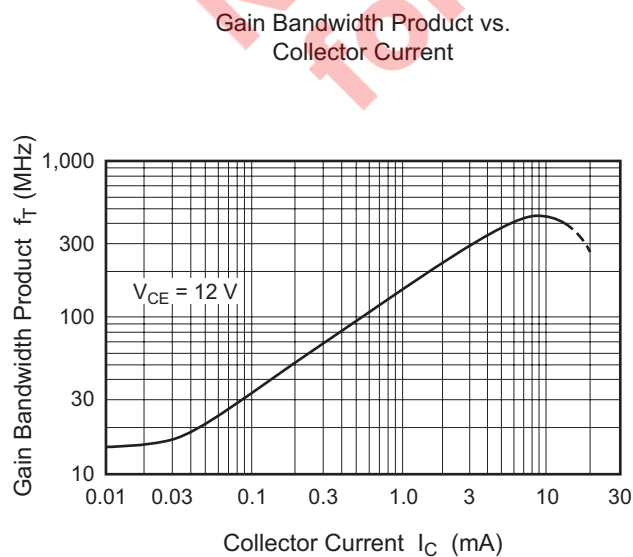
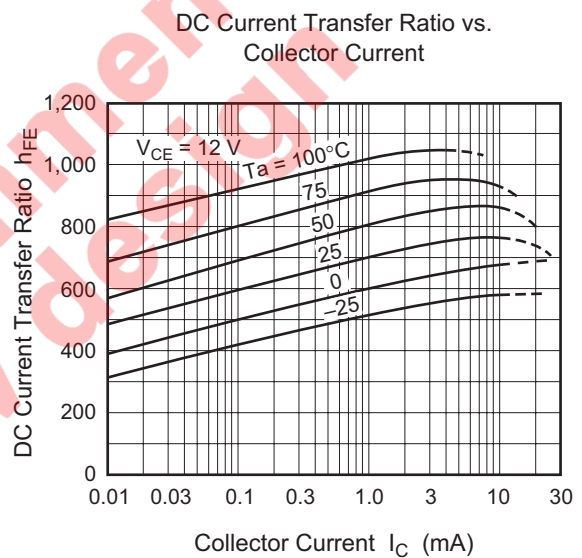
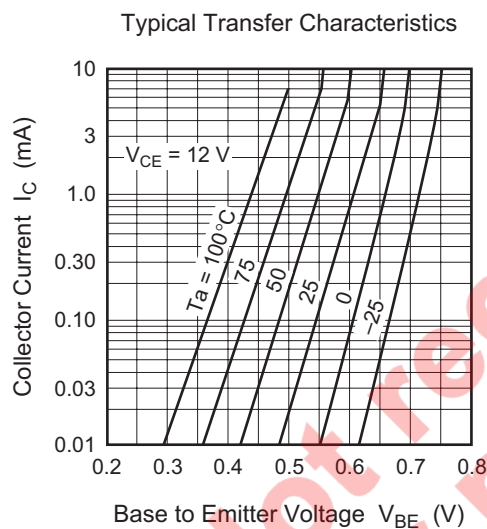
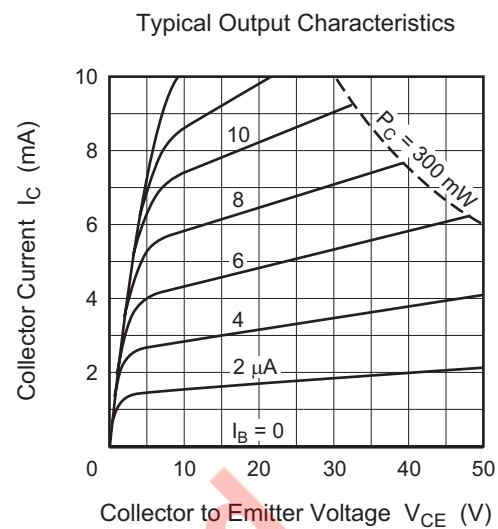
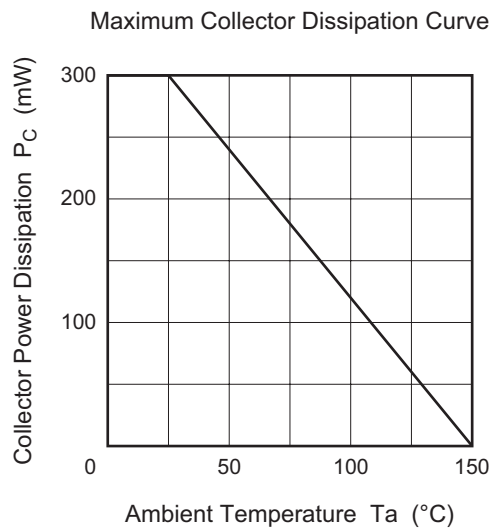
(Ta = 25°C)

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}	—	—	0.5	μA	$V_{CB} = 100 \text{ V}$, $I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	400	—	1200		$V_{CE} = 12 \text{ V}$, $I_C = 2 \text{ mA}$
	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	—	200	—	MHz	$V_{CE} = 12 \text{ V}$, $I_C = 2 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.6	—	pF	$V_{CB} = 25 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$
Noise figure	NF	—	—	5.0	dB	$V_{CE} = 6 \text{ V}$, $I_C = 50 \mu\text{A}$, $f = 10 \text{ Hz}$
		—	—	1.5	dB	$R_g = 50 \text{ k}\Omega$, $f = 1 \text{ kHz}$

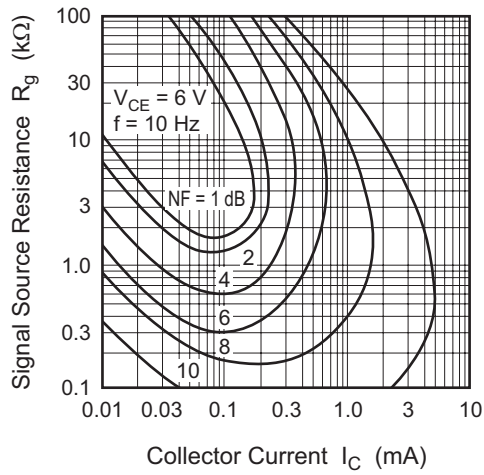
Note: 1. The 2SC1775A is grouped by h_{FE1} as follows.

E	F
400 to 800	600 to 1200

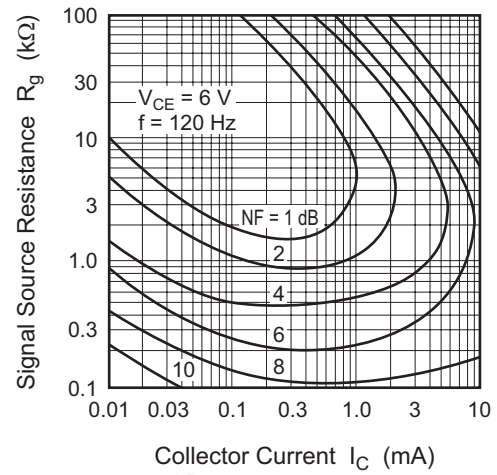
Main Characteristics



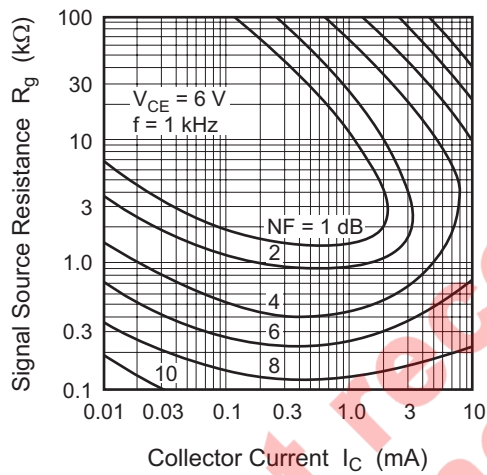
Contours of Constant Noise Figure



Contours of Constant Noise Figure



Contours of Constant Noise Figure



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
TO-92(1)	SC-43A	PRSS0003DA-A	TO-92(1) / TO-92(1)V	0.25g	

The drawing illustrates the mechanical specifications of the TO-92 package. The top view shows a rectangular body with a width of 4.8 ± 0.3 mm and a length of 5.0 ± 0.2 mm. The side view shows a height of 3.8 ± 0.3 mm. The bottom view shows three leads with a pitch of 1.27 mm and a total width of 2.54 mm. Lead dimensions include a maximum width of 0.60 mm, a maximum thickness of 0.55 mm, and a maximum length of 2.3 mm. A minimum lead length of 12.7 mm is also specified. A circular feature on the bottom view has a diameter of 0.7 mm. A large diagonal watermark 'Not recommend for new design' is overlaid on the drawing.

Ordering Information

Part Name	Quantity	Shipping Container
2SC1775AETZ 2SC1775AFTZ	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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