

2SC1775, 2SC1775A

Silicon NPN Epitaxial

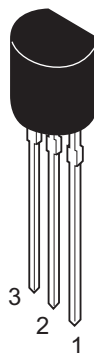
REJ03G0690-0200
(Previous ADE-208-1056)
Rev.2.00
Aug.10.2005

Application

- Low frequency low noise amplifier
- Complementary pair with 2SA872/A

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	2SC1775	2SC1775A	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	T_j	150	150	°C
Storage temperature	T_{stg}	-55 to +150	-50 to +150	°C

Electrical Characteristics

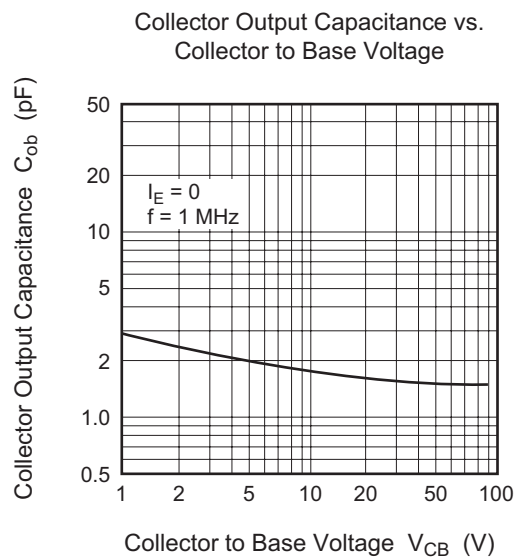
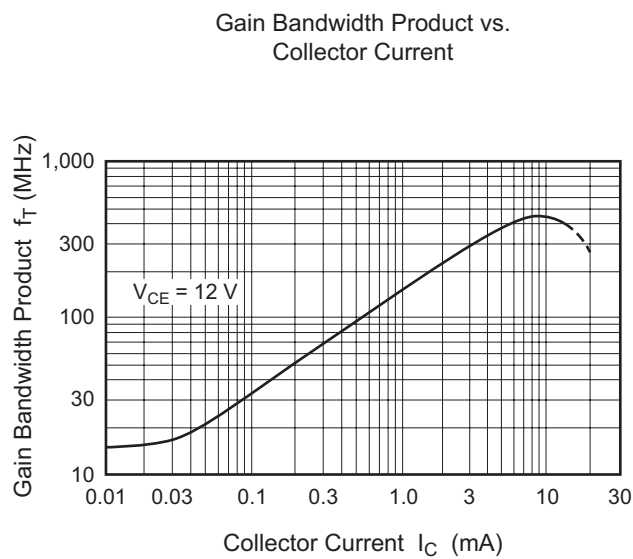
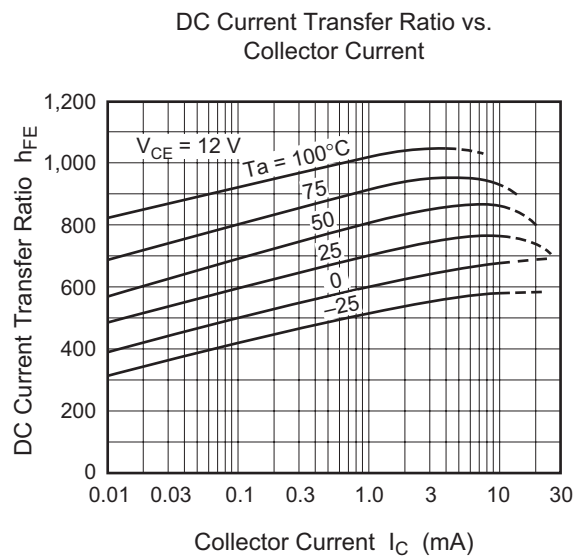
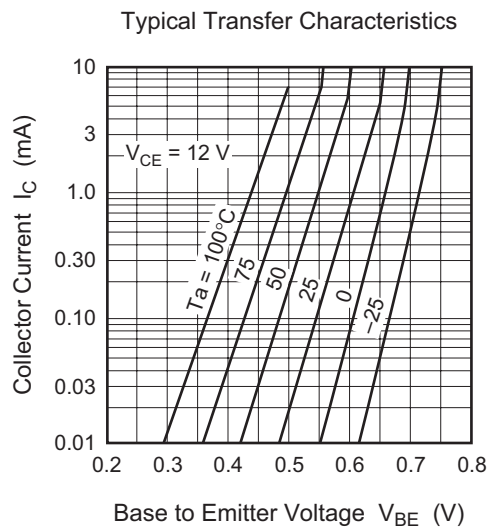
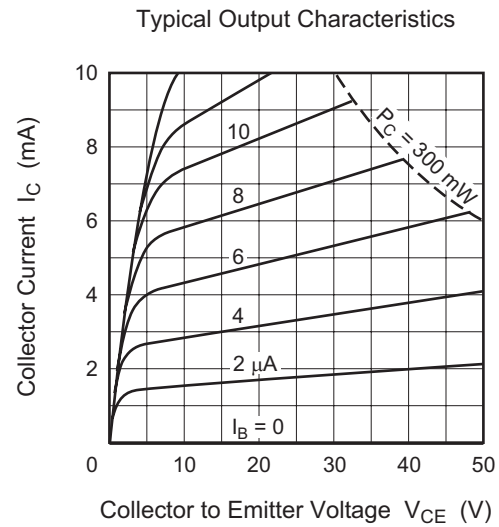
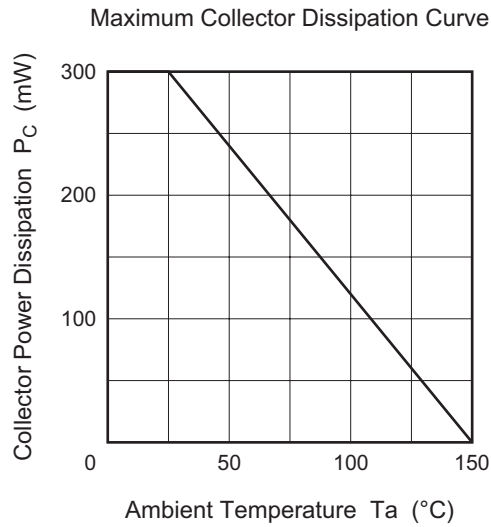
(Ta = 25°C)

Item	Symbol	2SC1775			2SC1775A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	90	—	—	120	—	—	V	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$
Collector cutoff current	I_{CBO}	—	—	0.5	—	—	—	μA	$V_{CB} = 75 \text{ V}$, $I_E = 0$
		—	—	—	—	—	0.5	μA	$V_{CB} = 100 \text{ V}$, $I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	400	—	1200	400	—	1200		$V_{CE} = 12 \text{ V}$, $I_C = 2 \text{ mA}$
	h_{FE2}	160	—	—	160	—	—		$V_{CE} = 12 \text{ V}$, $I_C = 0.1 \text{ mA}$
Base to emitter voltage	V_{BE}	—	—	0.75	—	—	0.75	V	$V_{CE} = 12 \text{ V}$, $I_C = 2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	—	—	0.5	V	$I_C = 10 \text{ mA}$, $I_B = 1 \text{ mA}$
Gain bandwidth product	f_T	—	200	—	—	200	—	MHz	$V_{CE} = 12 \text{ V}$, $I_C = 2 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.6	—	—	1.6	—	pF	$V_{CB} = 25 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$
Noise figure	NF	—	—	5.0	—	—	5.0	dB	$V_{CE} = 6 \text{ V}$, $I_C = 50 \mu\text{A}$, $R_g = 50 \text{ k}\Omega$
		—	—	1.5	—	—	1.5	dB	$f = 1 \text{ kHz}$

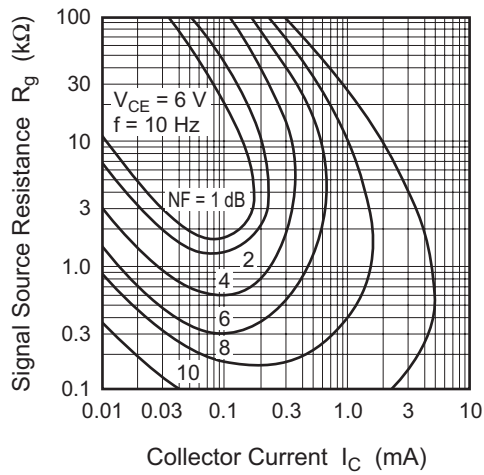
Note: 1. The 2SC1775/A is grouped by h_{FE1} as follows.

E	F
400 to 800	600 to 1200

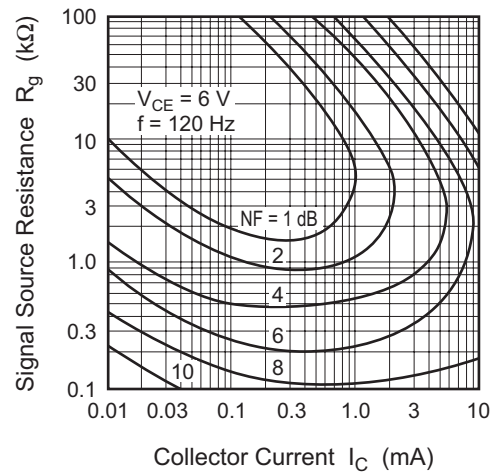
Main Characteristics



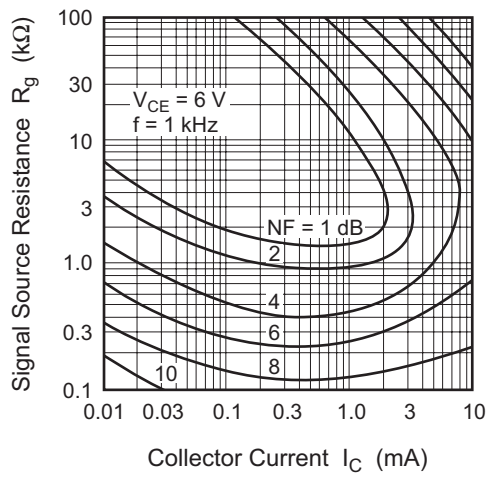
Contours of Constant Noise Figure



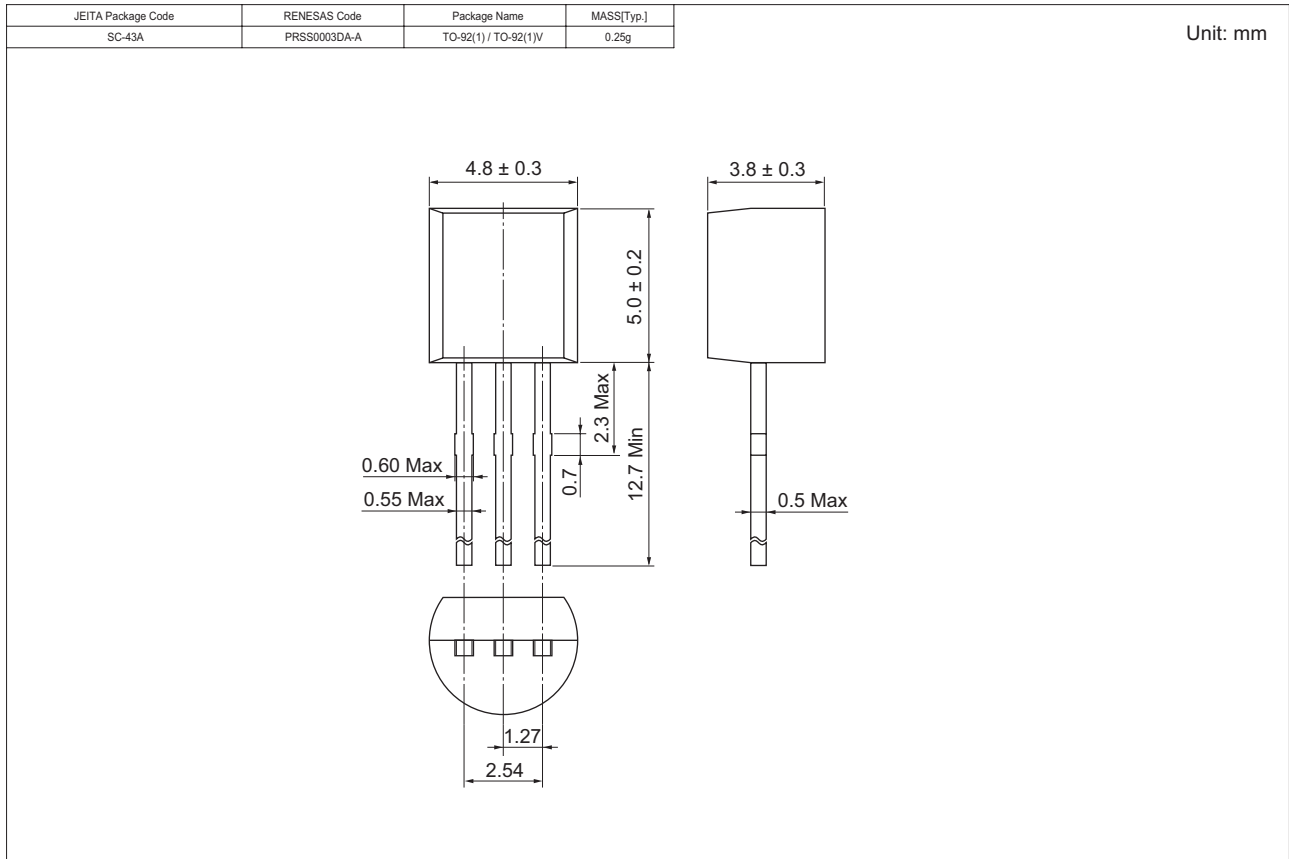
Contours of Constant Noise Figure



Contours of Constant Noise Figure



Package Dimensions



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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