

2SA836

Silicon PNP Epitaxial

REJ03G0629-0200
(Previous ADE-208-316)
Rev.2.00
Aug.10.2005

Application

Low frequency low noise amplifier

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_{CB0}	-55	V
Collector to emitter voltage	V_{CE0}	-55	V
Emitter to base voltage	V_{EB0}	-5	V
Collector current	I_C	-100	mA
Emitter current	I_E	100	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics

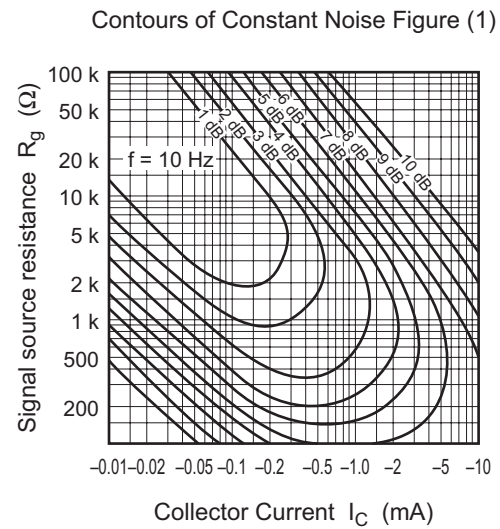
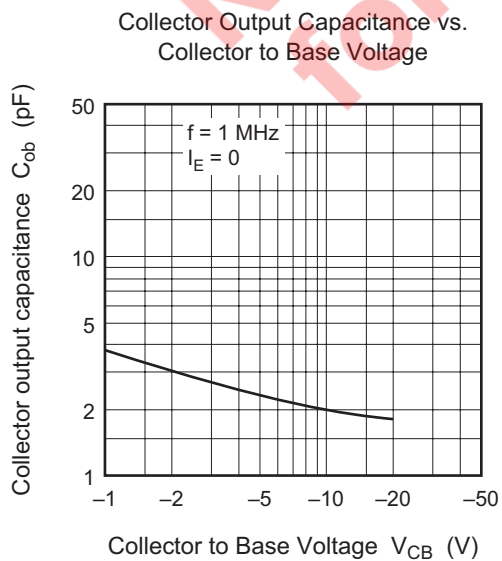
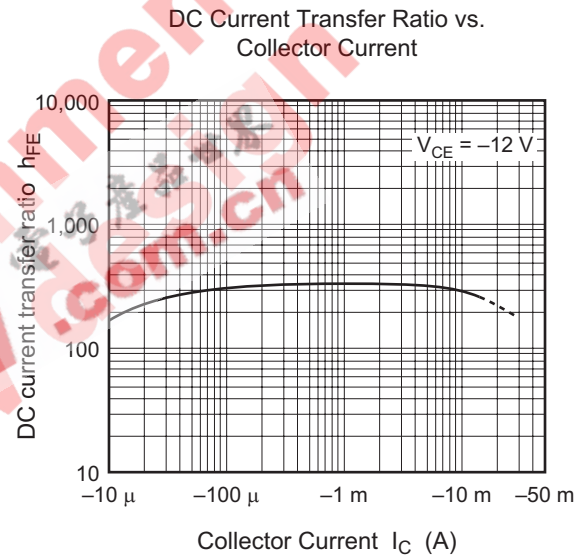
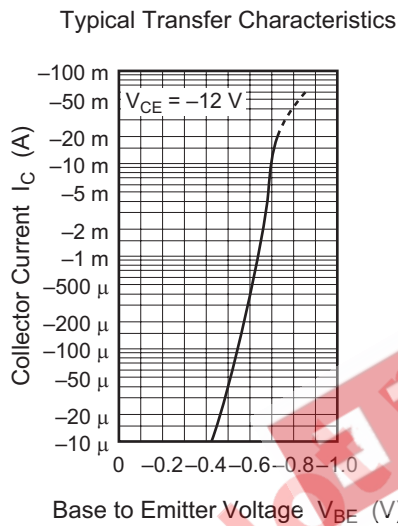
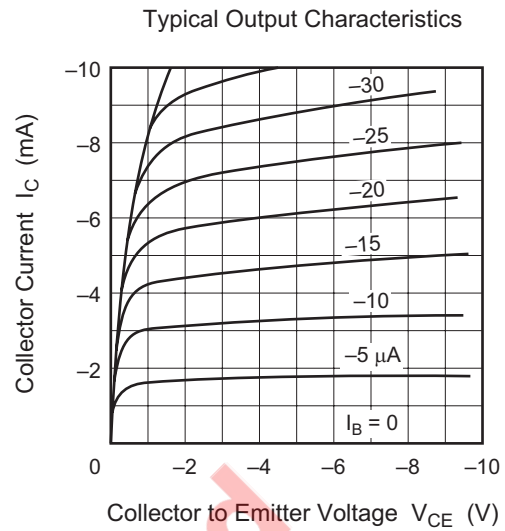
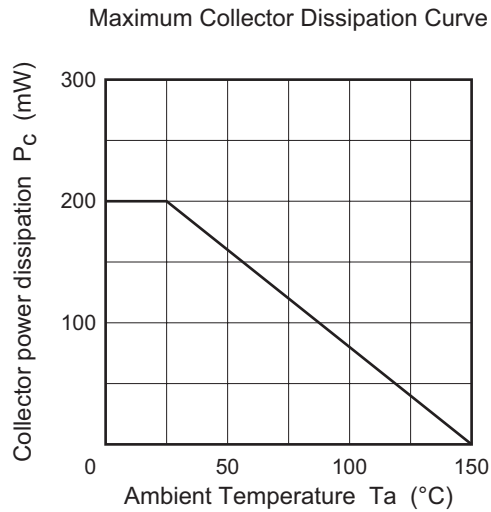
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-55	—	—	V	$I_C = -10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-55	—	—	V	$I_C = -1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	-100	nA	$V_{CB} = -18 \text{ V}, I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	-50	nA	$V_{EB} = -2 \text{ V}, I_C = 0$
DC current transfer ratio	h_{FE}^{*1}	160	—	500		$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	-0.1	-0.5	V	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$
Base to emitter voltage	V_{BE}	—	-0.66	-0.75	V	$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$
Gain bandwidth product	f_T	—	200	—	MHz	$V_{CE} = -12 \text{ V}, I_E = -2 \text{ mA}$
Collector output capacitance	C_{ob}	—	2.0	—	pF	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Noise figure	NF	—	1	5	dB	$V_{CE} = -6 \text{ V},$ $f = 10 \text{ Hz}$
		—	0.5	1	dB	$I_C = -0.1 \text{ mA},$ $R_g = 10 \text{ k}\Omega$ $f = 1 \text{ kHz}$

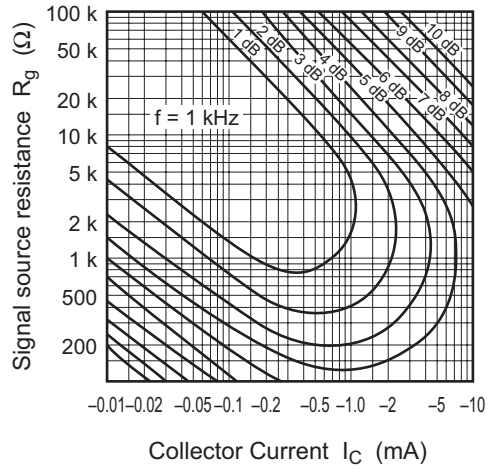
Note: 1. The 2SA836 is grouped by h_{FE} as follows.

C	D
160 to 320	250 to 500

Main Characteristics



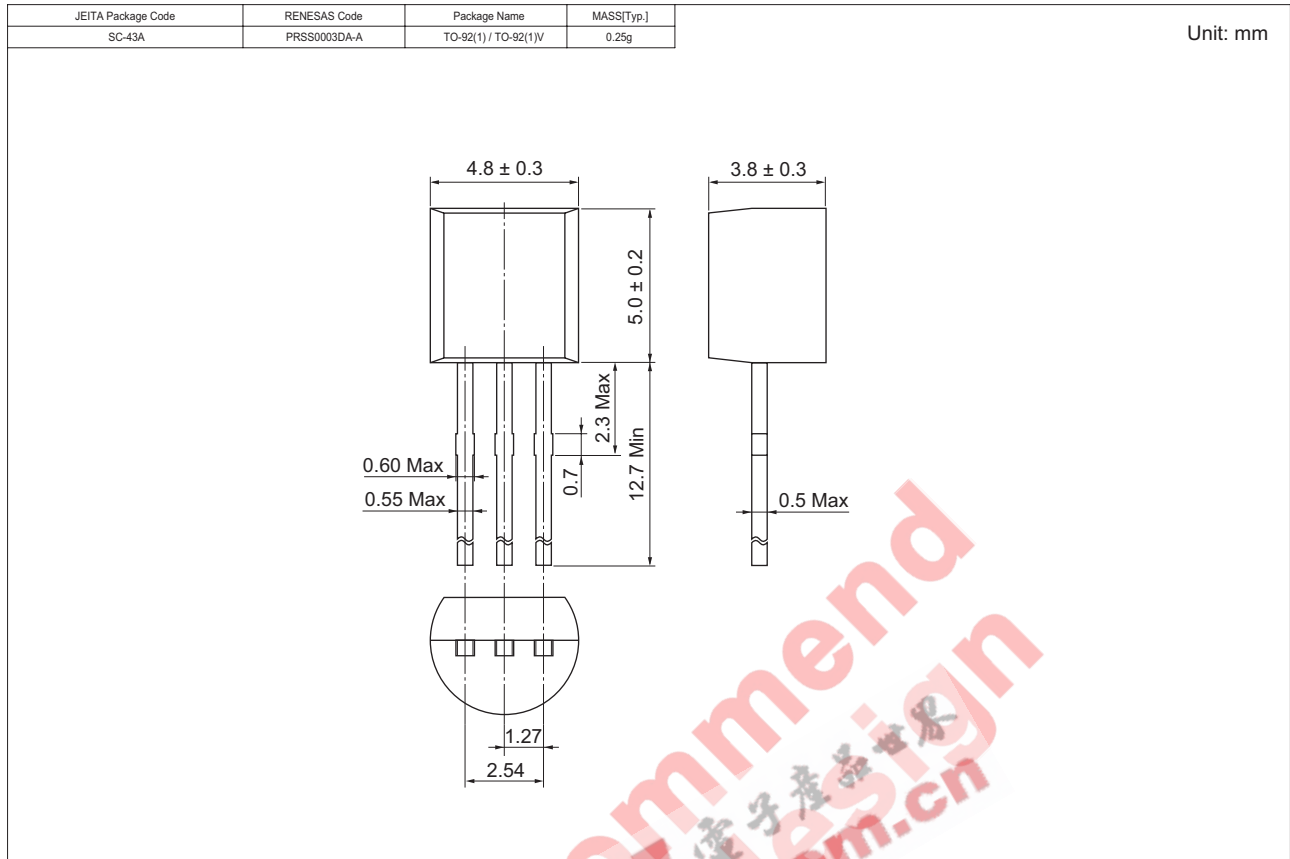
Contours of Constant Noise Figure (2)



NOT RECOMMENDED
for new design

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Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SA836CTZ	2500	Hold Box, Radial Taping
2SA836DTZ		

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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