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_{CBO}	–55	V
Collector to emitter voltage	V_{CEO}	–55	V
Emitter to base voltage	V_{EBO}	–5	V
Collector current	I_C	–100	mA
Emitter current	I_E	100	mA
Collector power dissipation	P_C	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics

(Ta = 25°C)

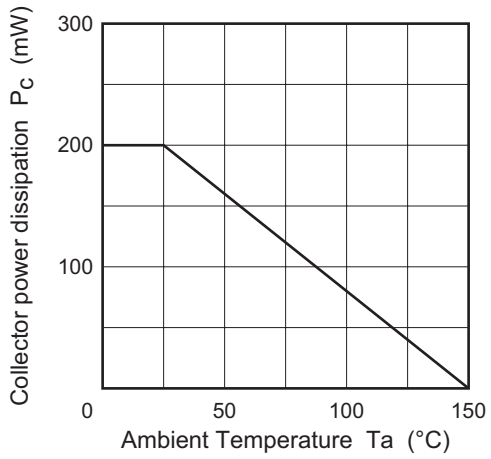
Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Collector to base breakdown voltage	$V_{(BR)CBO}$	–55	—	—	V	I_C = –10 µA, I_E = 0	
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–55	—	—	V	I_C = –1 mA, R_{BE} = ∞	
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–5	—	—	V	I_E = –10 µA, I_C = 0	
Collector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

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

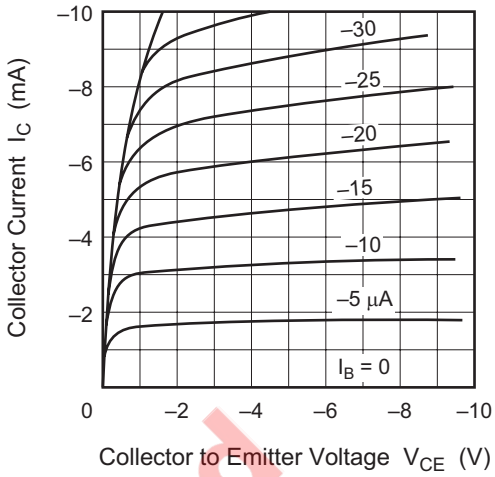
C	D
160 to 320	250 to 500

Main Characteristics

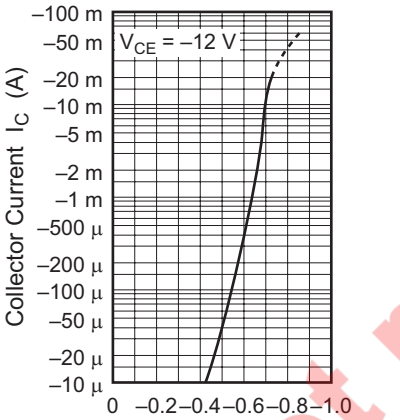
Maximum Collector Dissipation Curve



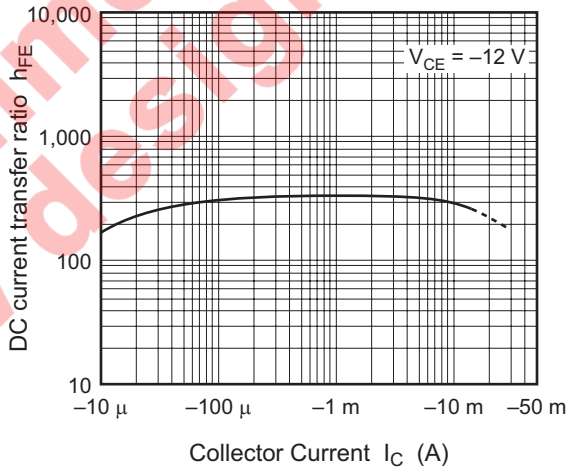
Typical Output Characteristics



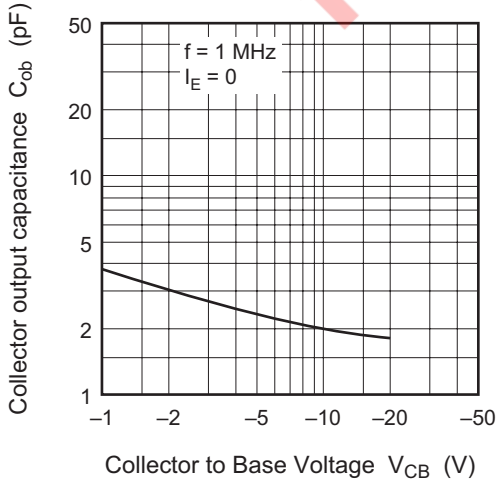
Typical Transfer Characteristics



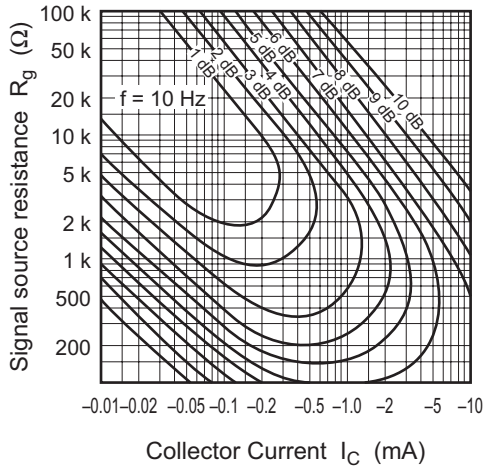
DC Current Transfer Ratio vs. Collector Current



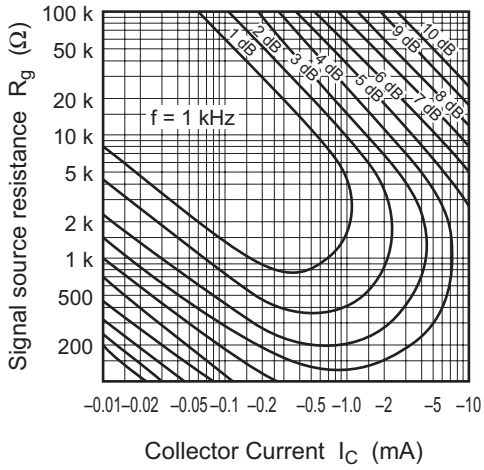
Collector Output Capacitance vs. Collector to Base Voltage



Contours of Constant Noise Figure (1)



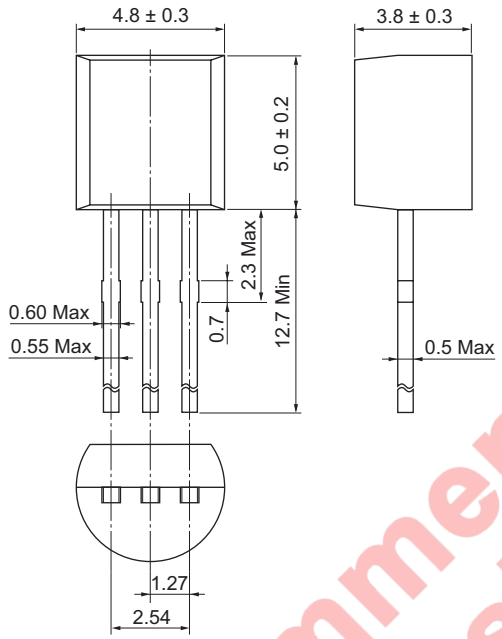
Contours of Constant Noise Figure (2)



Package Dimensions

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

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
2SA836CTZ 2SA836DTZ	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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http://www.renesas.com

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