To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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2SC1890A

Silicon NPN Epitaxial

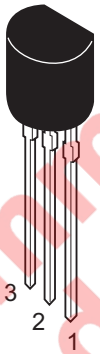
REJ03G0692-0200
(Previous ADE-208-1057)
Rev.2.00
Aug.10.2005

Application

- Low frequency high voltage amplifier
- Complementary pair with 2SA893A

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	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics

(Ta = 25°C)

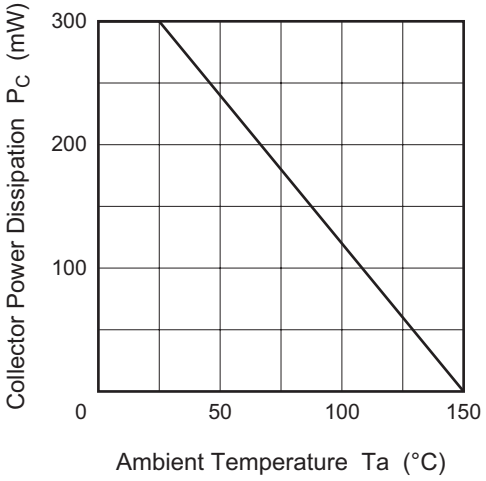
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	I_C = 1 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	—	µA	V_{CB} = 75 V, I_E = 0
		—	—	0.5	µA	V_{CB} = 100 V, I_E = 0
DC current transfer ratio	h_{FE}*[1]	250	—	1200		V_{CE} = 12 V, I_C = 2 mA
Base to emitter voltage	V_{BE}	—	—	0.75	V	V_{CE} = 12 V, I_C = 2 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	I_C = 10 mA, I_B = 1 mA
Gain bandwidth product	f_T	—	200	—	MHz	V_{CE} = 12 V, I_C = 2 mA
Collector output capacitance	Cob	—	1.6	—	pF	V_{CB} = 25 V, I_E = 0, f = 1 MHz
Noise figure	NF	—	2	10	dB	V_{CE} = 6 V, I_C = 50 µA, R_g = 50 kΩ, f = 1 kHz

Note: 1. The 2SC1890A is grouped by h_{FE} as follows.

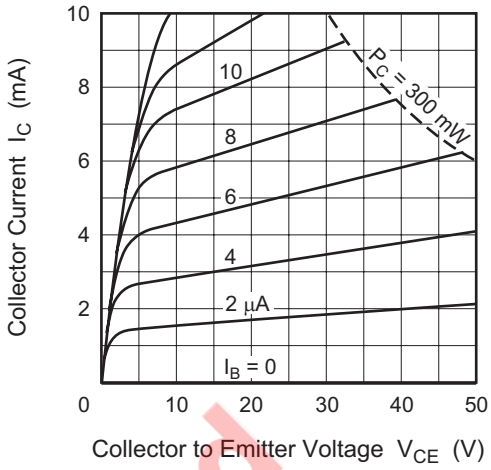
D	E	F
250 to 500	400 to 800	600 to 1200

Main Characteristics

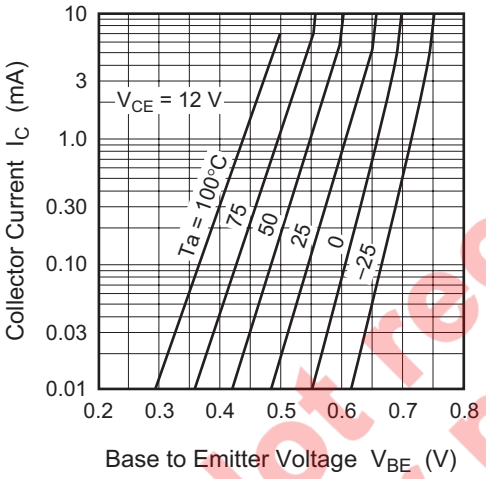
Maximum Collector Dissipation Curve



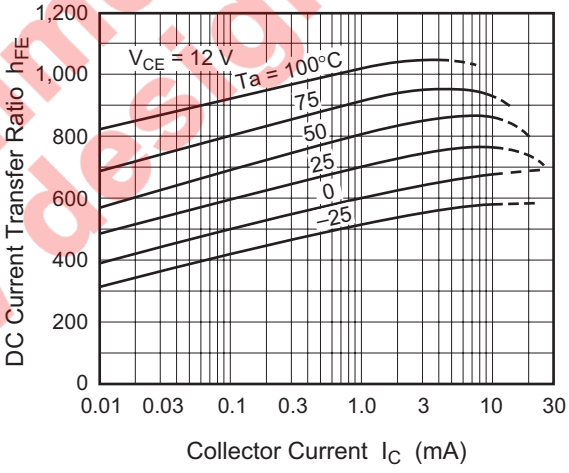
Typical Output Characteristics



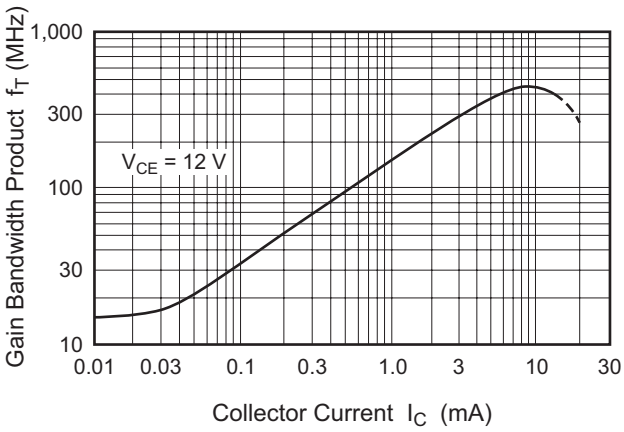
Typical Transfer Characteristics



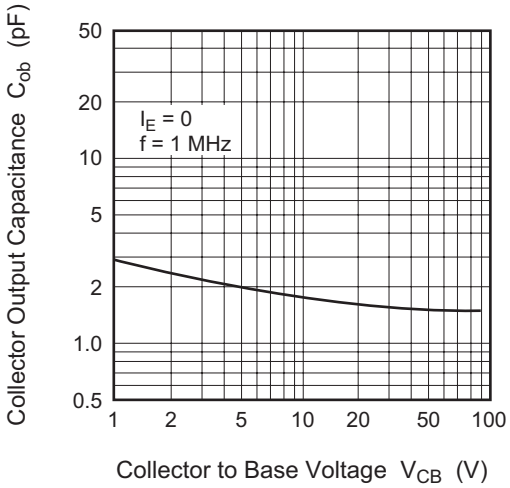
DC Current Transfer Ratio vs. Collector Current



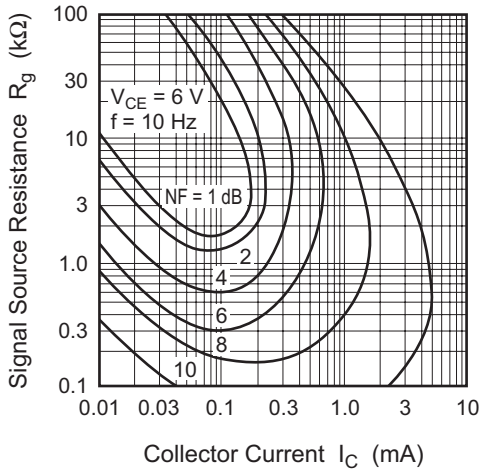
Gain Bandwidth Product vs. Collector Current



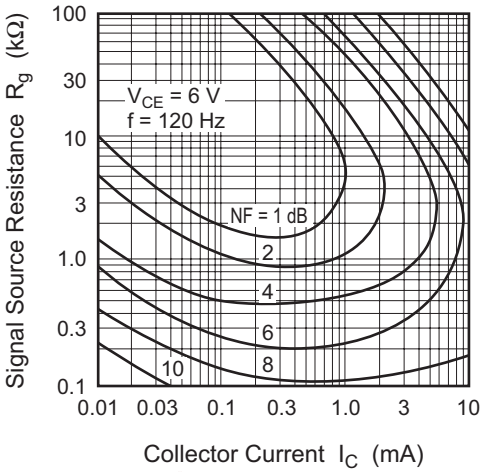
Collector Output Capacitance vs. Collector to Base Voltage



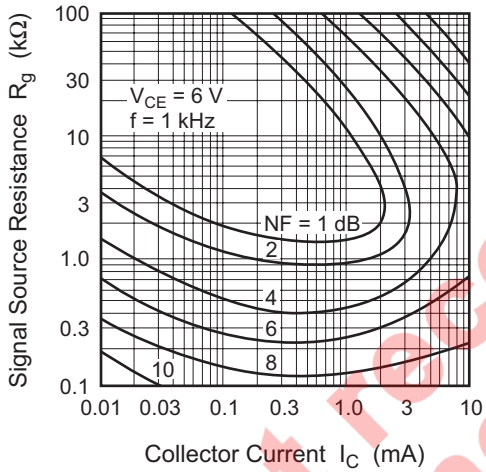
Contours of Constant Noise Figure



Contours of Constant Noise Figure



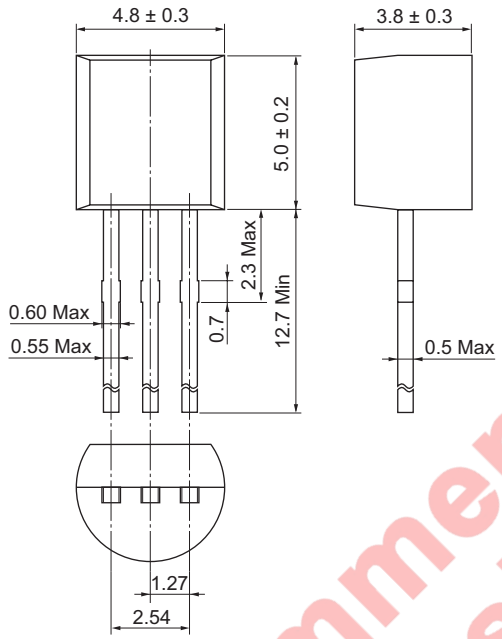
Contours of Constant Noise Figure



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
2SC1890ADTZ 2SC1890AETZ 2SC1890AFTZ	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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