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Old Company Name in Catalogs and Other Documents

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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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EOL product

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2SC5851

Silicon NPN Epitaxial

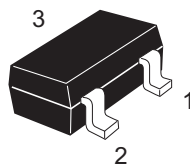
REJ03G0761-0100
 (Previous ADE-208-1480)
 Rev.1.00
 Aug.10.2005

Features

High frequency amplifier

Outline

RENESAS Package code: PTSP0003ZA-A
 (Package name: CMPAK[®])



1. Emitter
2. Base
3. Collector

*CMPAK is a trademark of Renesas Technology Corp.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	30	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C^*	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +125	°C

*Value on the glass epoxy board (10 mm x 10 mm x 0.7 mm)

Electrical Characteristics

(Ta = 25°C)

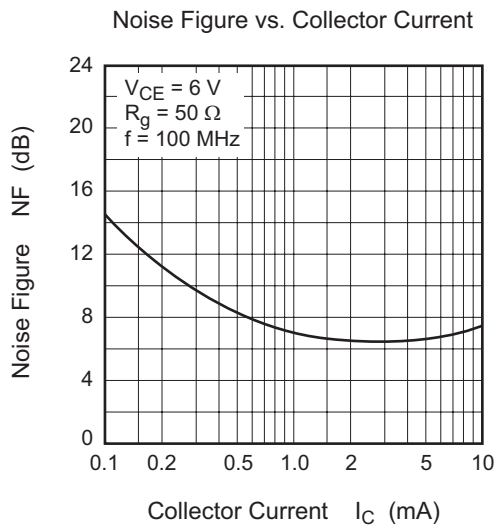
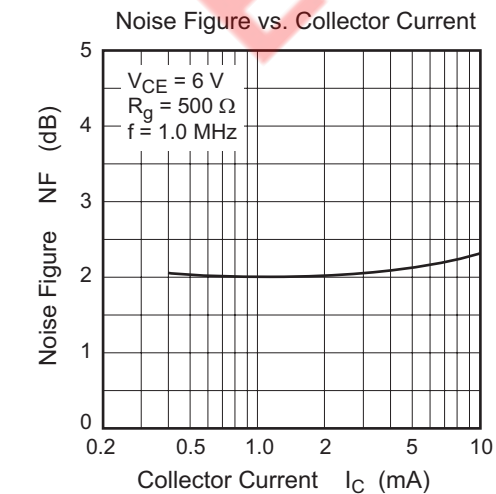
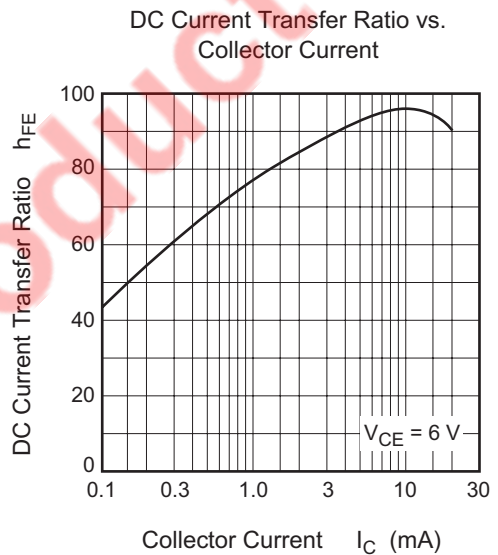
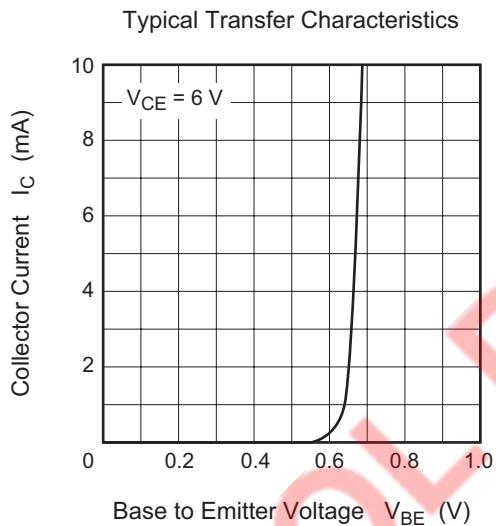
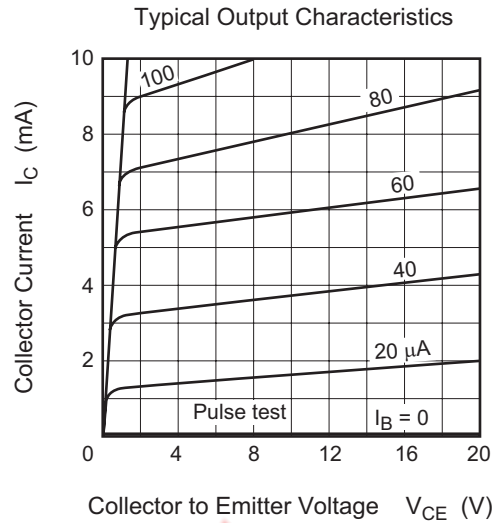
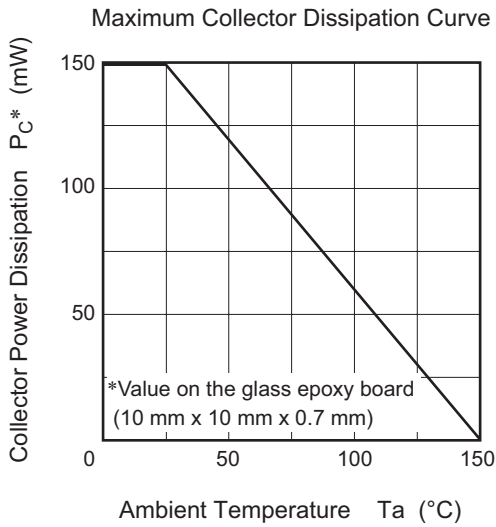
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	30	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 20 \text{ V}, I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 2 \text{ V}, I_C = 0$
DC current transfer ratio	h_{FE}^{*1}	35	—	200		$V_{CE} = 12 \text{ V}, I_C = 2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.1	V	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$
Base to emitter voltage	V_{BE}	—	—	0.75	V	$V_{CE} = 12 \text{ V}, I_C = 2 \text{ mA}$
Gain bandwidth product	f_T	—	230	—	MHz	$V_{CE} = 12 \text{ V}, I_C = 2 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.6	—	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Noise figure	NF	—	5.5	—	dB	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA},$ $f = 100 \text{ MHz}, R_g = 100 \Omega$

Notes: 1. The 2SC5851 is grouped by h_{FE} as follows.

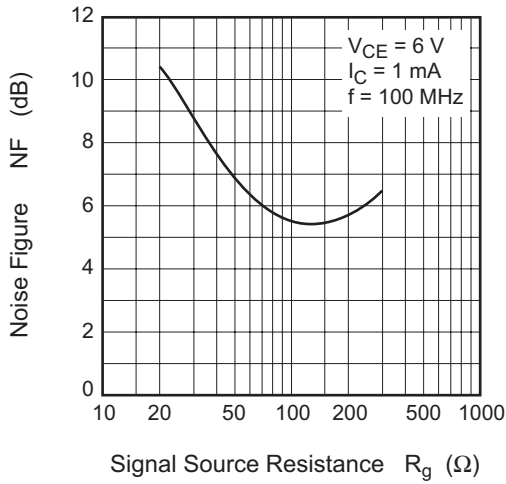
Grade	A	B	C
Mark	FA	FB	FC
h_{FE}	35 to 75	60 to 120	100 to 200

EOL Product

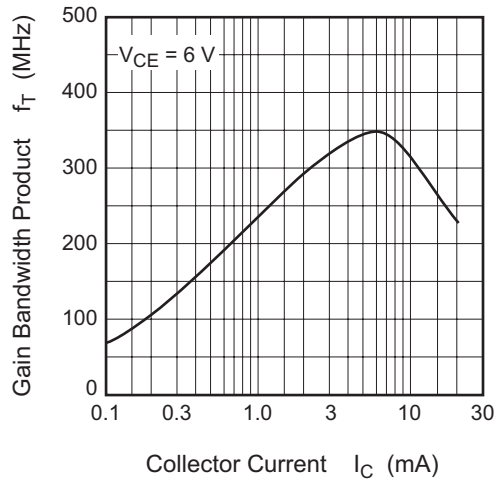
Main Characteristics



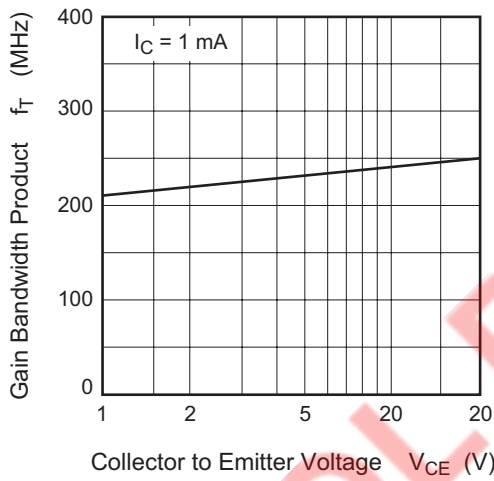
Noise Figure vs. Signal Source Resistance



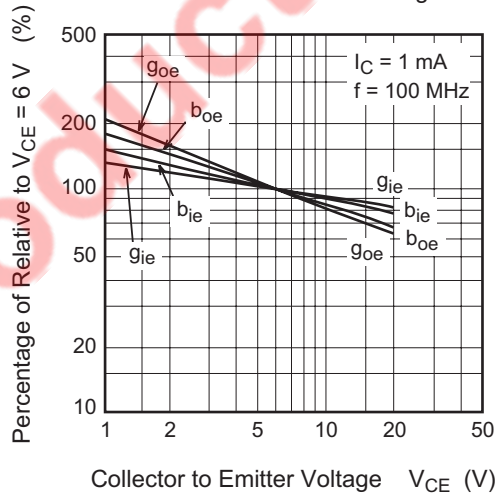
Gain Bandwidth Product vs. Collector Current



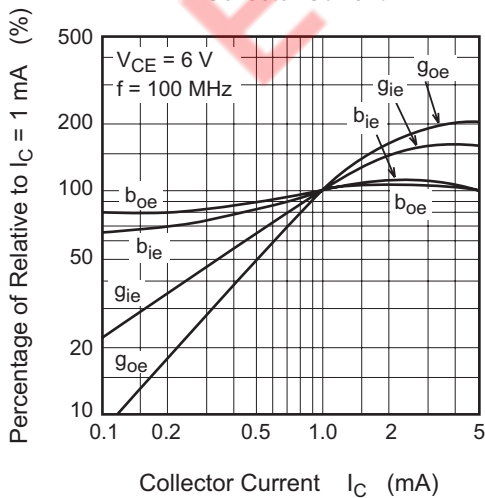
Gain Bandwidth Product vs. Collector to Emitter Voltage



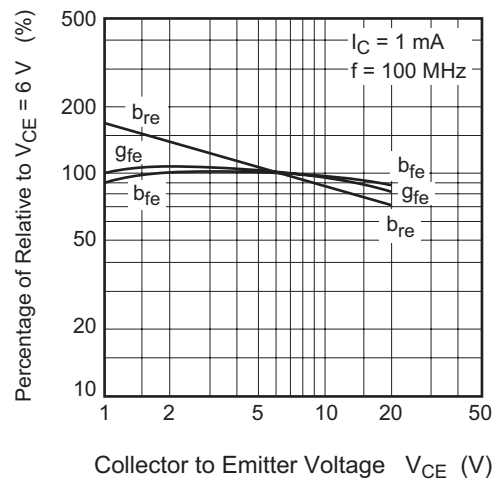
Input/Output Admittance vs. Collector to Emitter Voltage

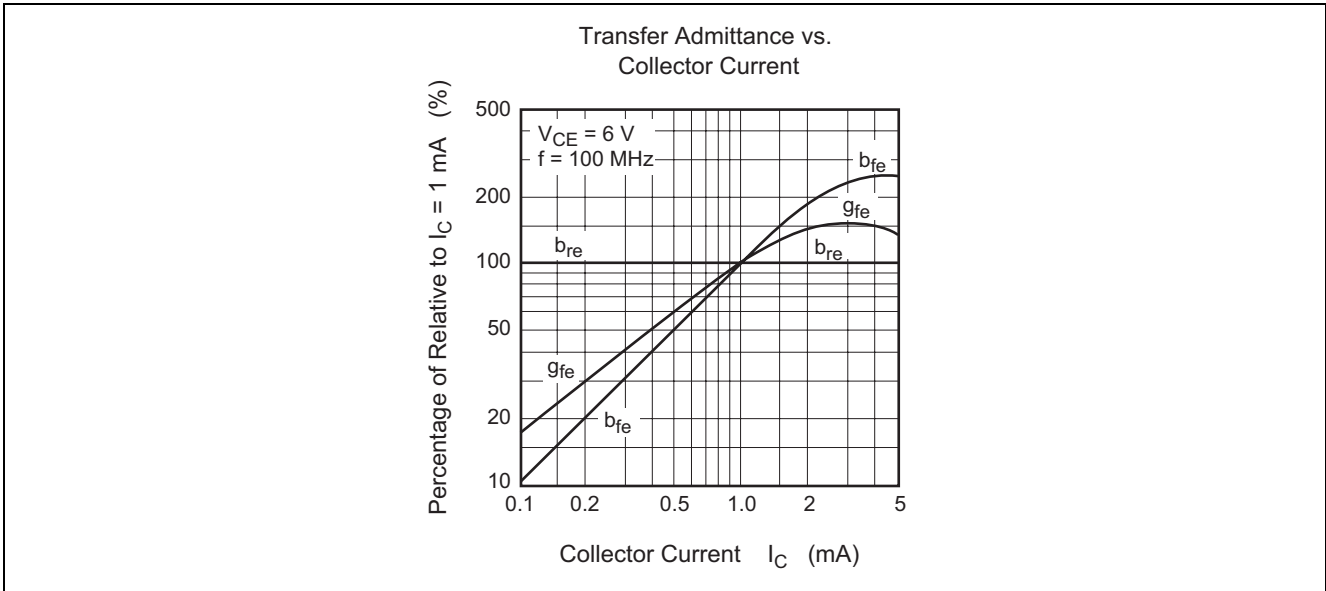


Input/Output Admittance vs. Collector Current



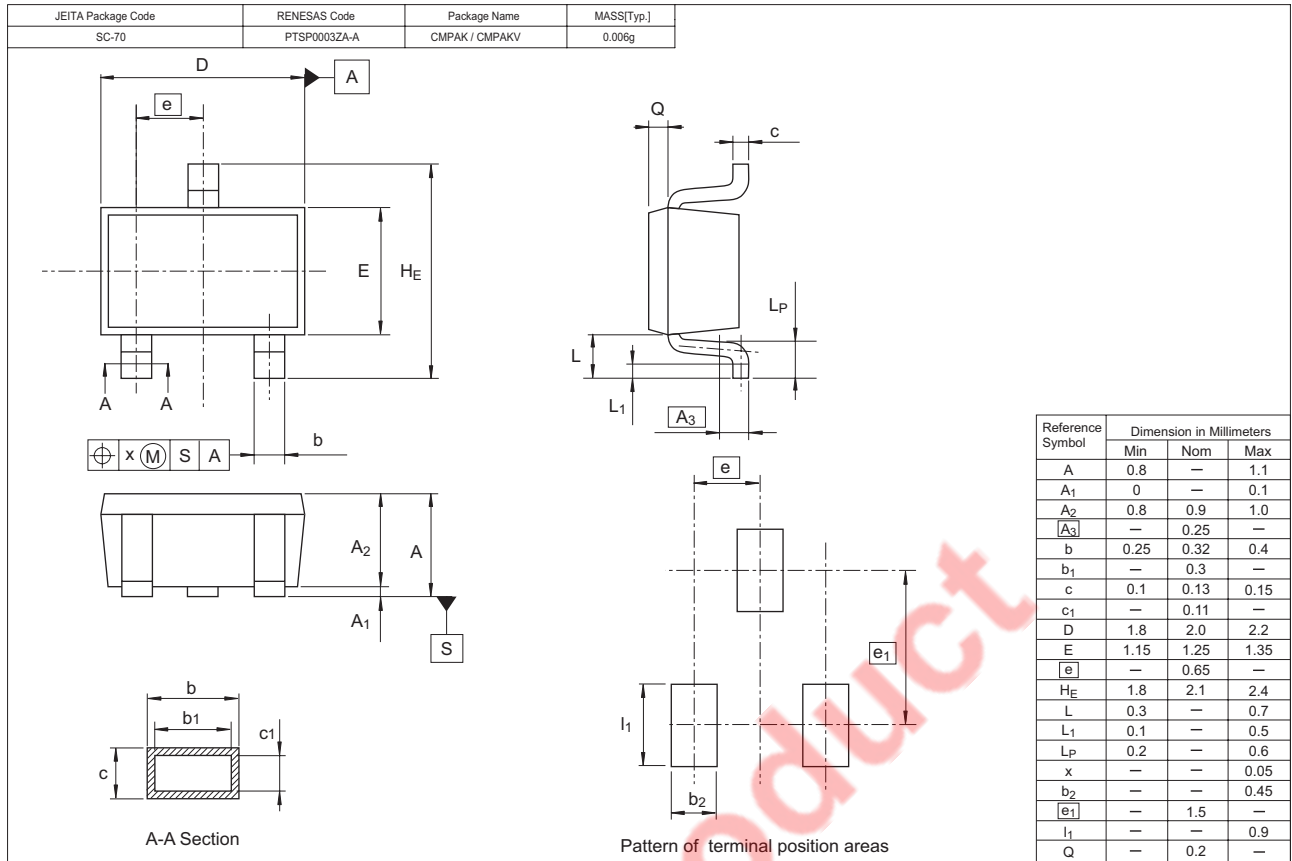
Transfer Admittance vs. Collector to Emitter Voltage





EOL Product

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SC5851FATL-E	3000	φ 178 mm Reel, 8 mm Emboss Taping
2SC5851FBTL-E		
2SC5851FCTL-E		

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