

To our customers,

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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Not recommended
for new design

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2SC5051

Silicon NPN Epitaxial

REJ03G0741-0300
(Previous ADE-208-1131A)
Rev.3.00
Aug.10.2005

Application

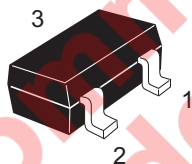
VHF / UHF wide band amplifier

Features

- High gain bandwidth product
 $f_T = 11$ GHz Typ
- High gain, low noise figure
PG = 14.5 dB Typ, NF = 1.1 dB Typ at $f = 900$ MHz

Outline

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



1. Emitter
2. Base
3. Collector

Note: Marking is "YZ-".

*CMPAK is a trademark of Renesas Technology Corp.

Attention: This device is very sensitive to electro static discharge.

It is recommended to adopt appropriate cautions when handling this transistor.

Absolute Maximum Ratings

($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	8	V
Emitter to base voltage	V_{EBO}	1.5	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

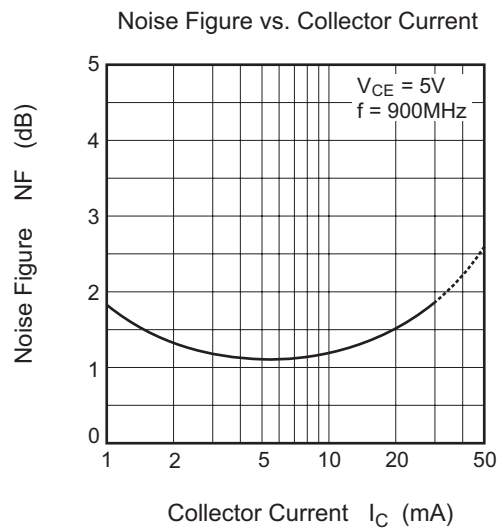
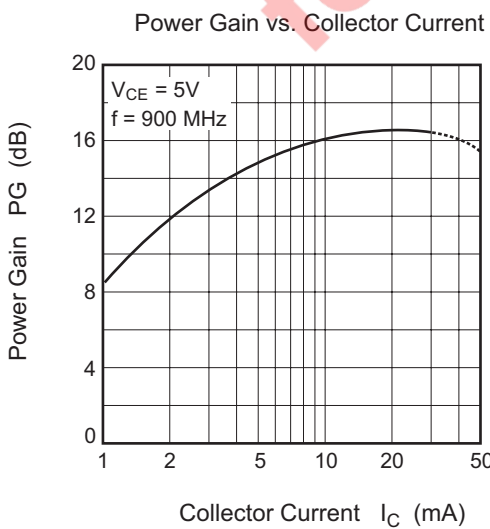
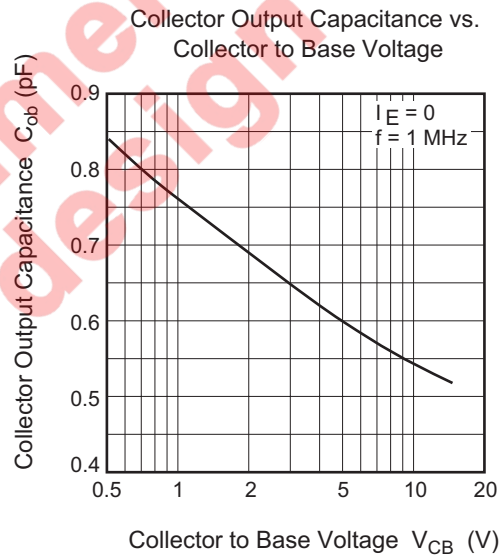
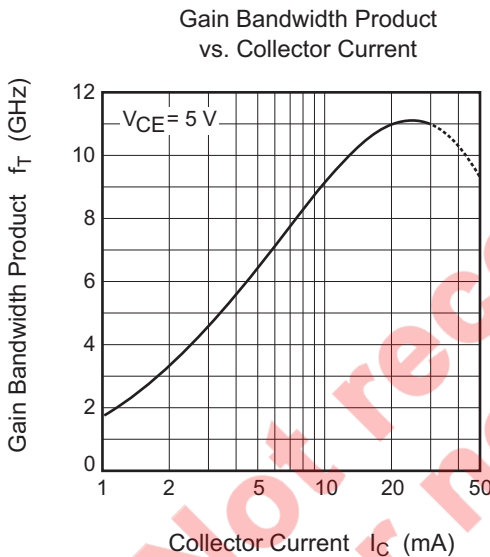
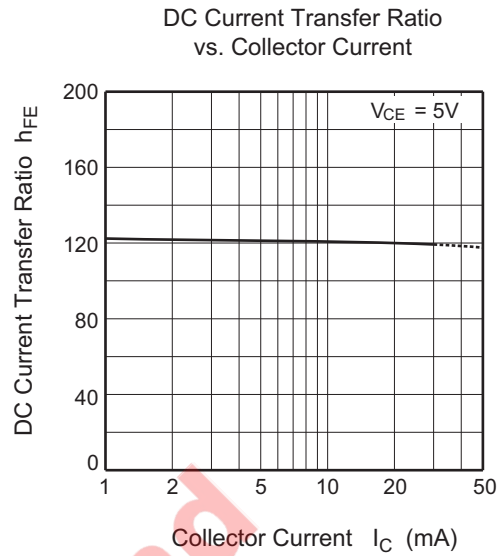
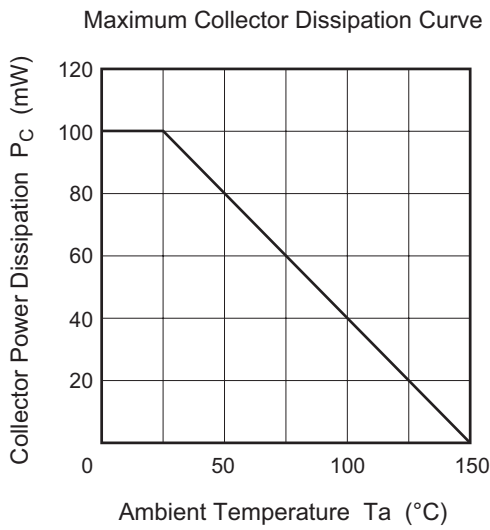
Electrical Characteristics

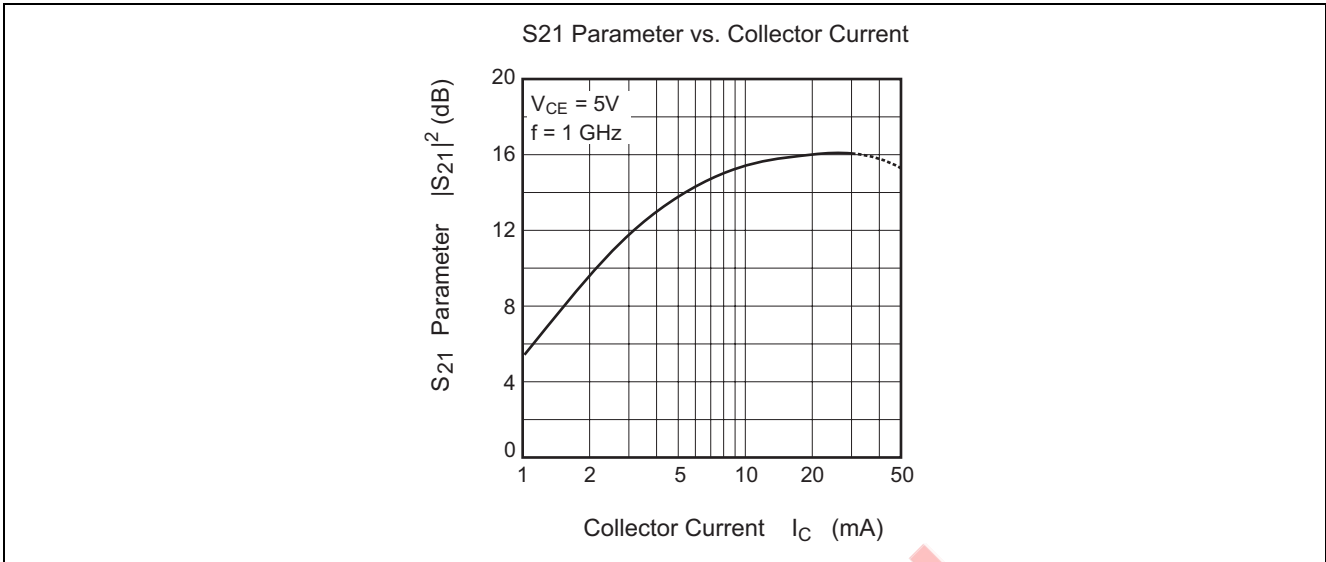
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 12 V, I_E = 0$
	I_{CEO}	—	—	1	mA	$V_{CE} = 8 V, R_{BE} = \infty$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{EB} = 1.5 V, I_C = 0$
DC current transfer ratio	h_{FE}	50	120	250		$V_{CE} = 5 V, I_C = 20 mA$
Collector output capacitance	C_{ob}	—	0.65	1.15	pF	$V_{CB} = 5 V, I_E = 0, f = 1 MHz$
Gain bandwidth product	f_T	8.0	11.0	—	GHz	$V_{CE} = 5 V, I_C = 20 mA$
S21 Parameter	$ S_{21} ^2$	—	14.0	—	dB	$V_{CE} = 5 V, I_C = 20 mA,$ $f = 1000 MHz$
Power gain	PG	11.5	14.5	—	dB	$V_{CE} = 5 V, I_C = 20 mA,$ $f = 900 MHz$
Noise figure	NF	—	1.1	2.0	dB	$V_{CE} = 5 V, I_C = 5 mA,$ $f = 900 MHz$

Not recommended
for new design

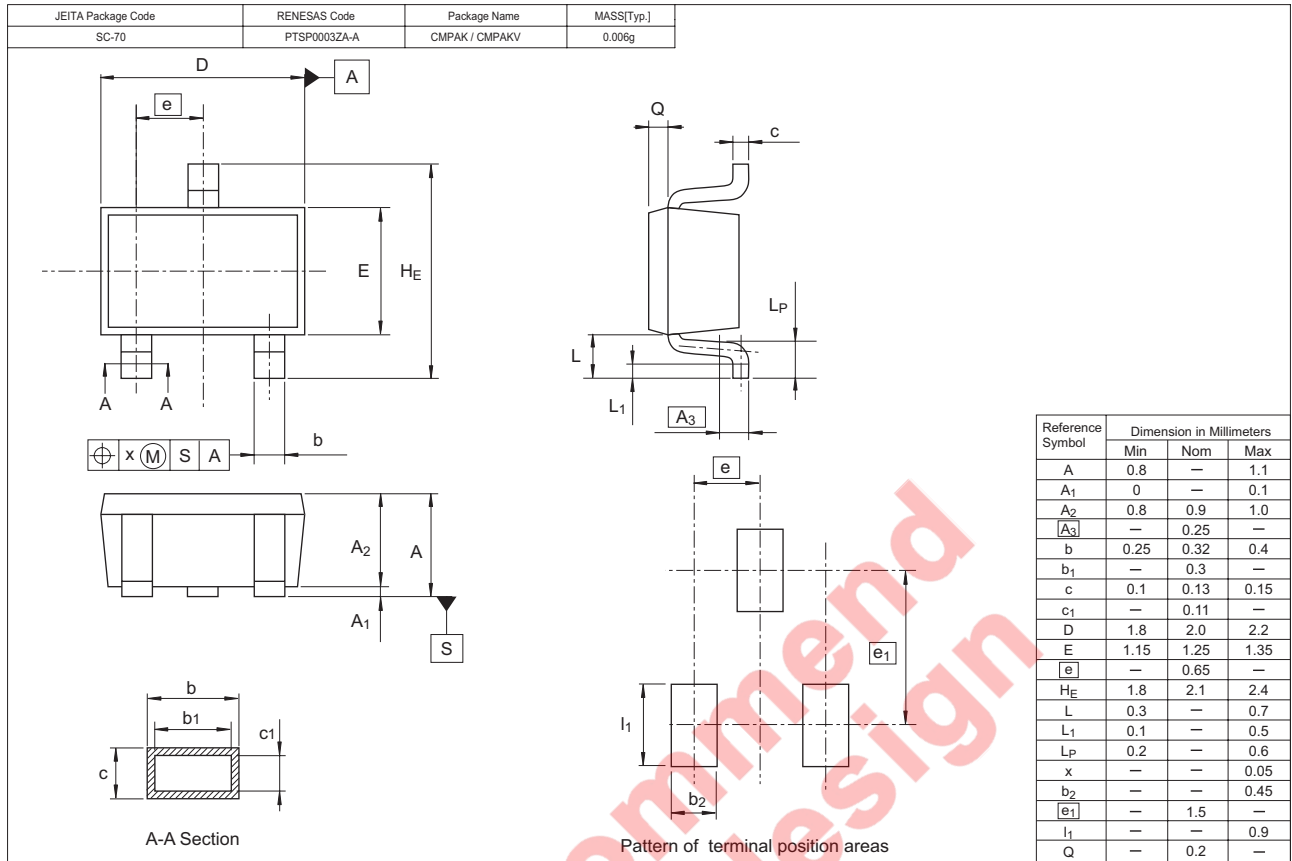
Main Characteristics





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Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SC5051YZ-TR-E	3000	φ 178 mm Reel, 8 mm Emboss Taping

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