

To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.

Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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2SC4463

Silicon NPN Epitaxial

RENESAS

ADE-208-1109A (Z)

2nd. Edition

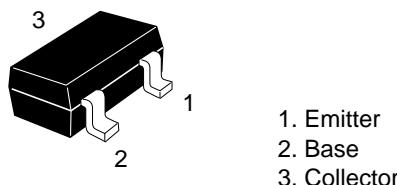
Mar. 2001

Application

UHF frequency converter

Outline

CMPAK



1. Emitter
2. Base
3. Collector

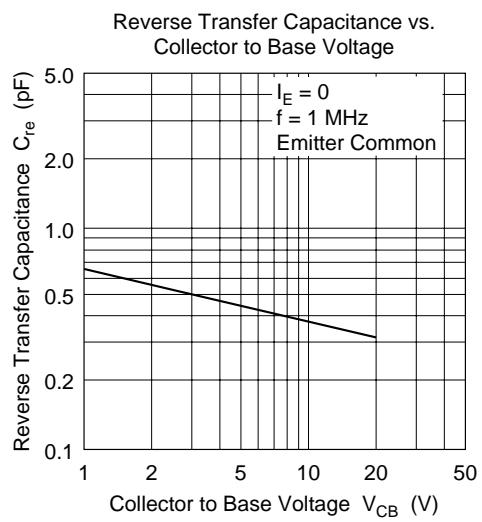
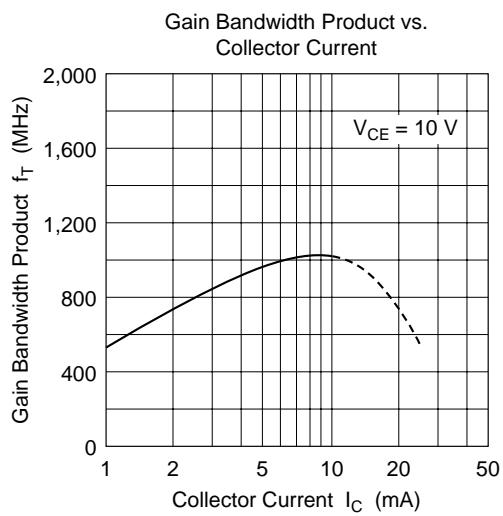
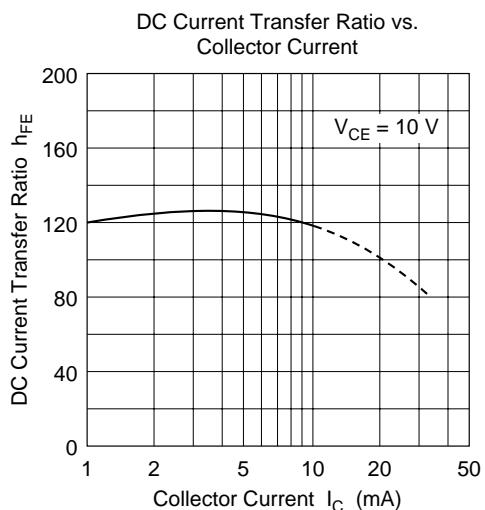
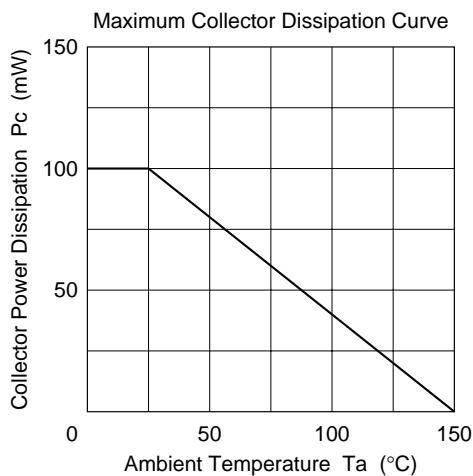
Note: Marking is "HC".

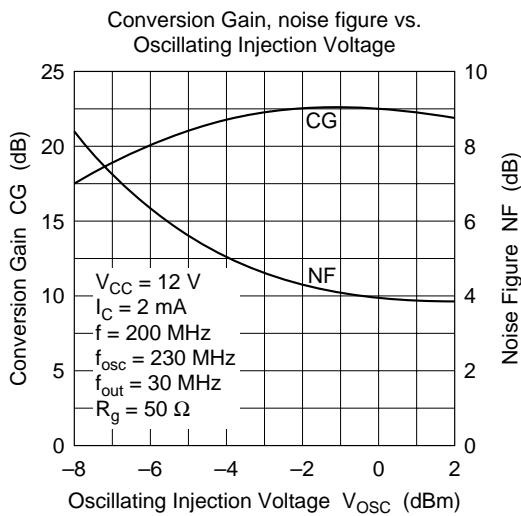
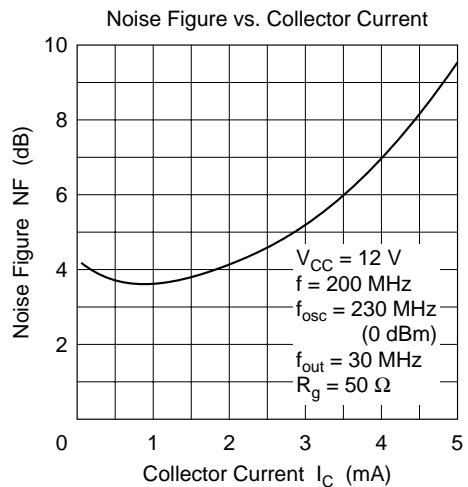
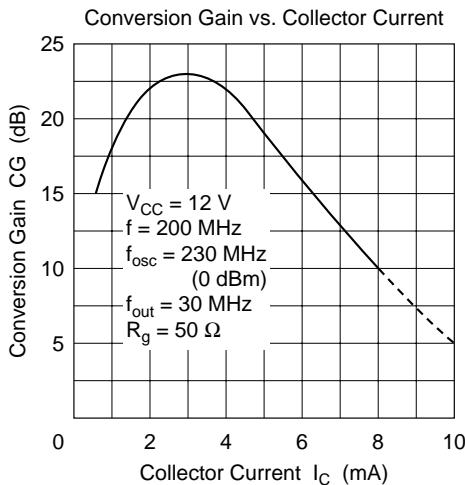
Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	30	V
Collector to emitter voltage	V _{CEO}	20	V
Emitter to base voltage	V _{EBO}	3	V
Collector current	I _C	50	mA
Collector power dissipation	P _C	100	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

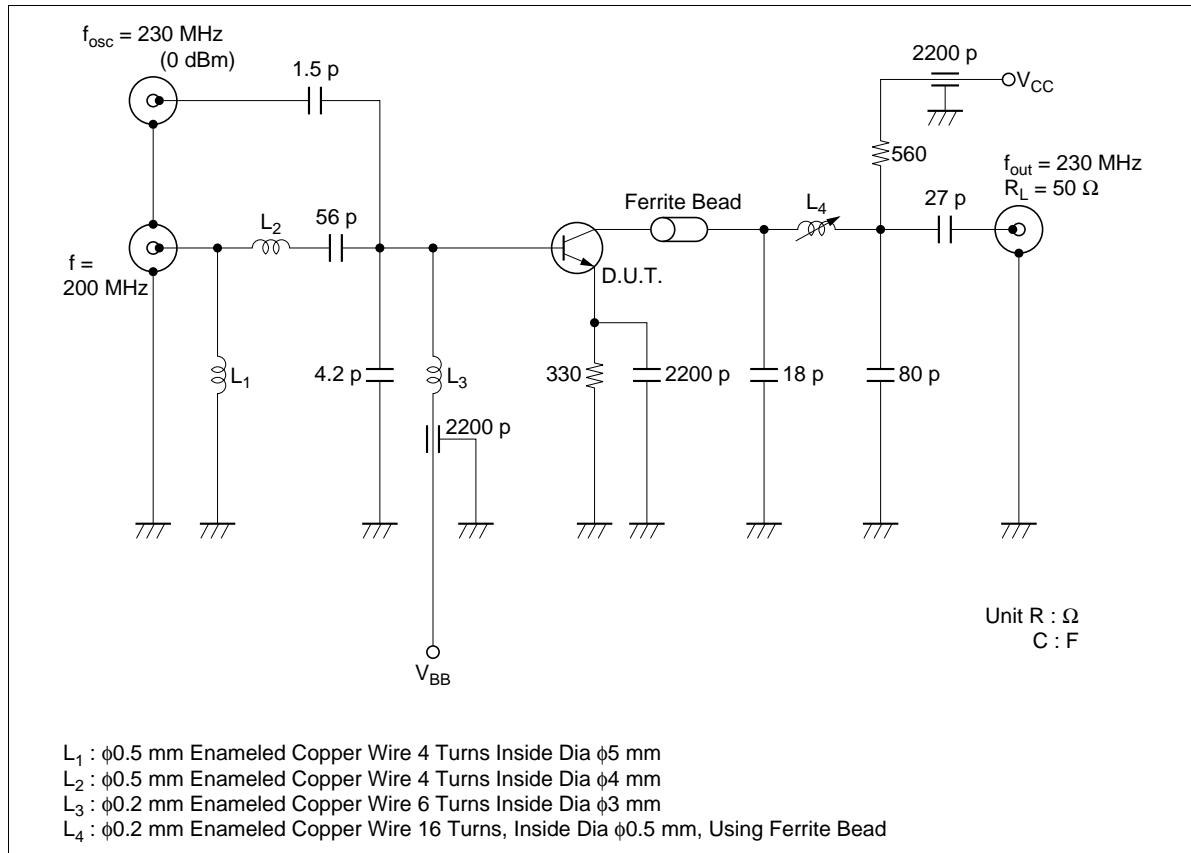
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	V _{(BR)CBO}	30	—	—	V	I _C = 10 μA, I _E = 0
Collector to emitter breakdown voltage	V _{(BR)CEO}	20	—	—	V	I _C = 1 mA, R _{BE} =
Emitter to base breakdown voltage	V _{(BR)EBO}	3	—	—	V	I _E = 10 μA, I _C = 0
Collector cutoff current	I _{CBO}	—	—	0.5	μA	V _{CB} = 10 V, I _E = 0
Collector to emitter saturation voltage	V _{CE(sat)}	—	—	1.0	V	I _C = 20 mA, I _B = 4 mA
DC current transfer ratio	h _{FE}	60	120	—		V _{CE} = 10 V, I _C = 10 mA
Gain bandwidth product	f _T	600	1000	—	MHz	V _{CE} = 10 V, I _C = 10 mA
Reverse transfer capacitance	C _{re}	—	0.35	0.65	pF	V _{CB} = 10 V, I _E = 0, emitter common, f = 1 MHz
Conversion gain	CG	—	21	—	dB	V _{CC} = 12 V, I _C = 2 mA, f = 200 MHz
Noise figure	NF	—	4.0	—	dB	f _{osc} = 230 MHz (0 dBm), f _{out} = 30 MHz



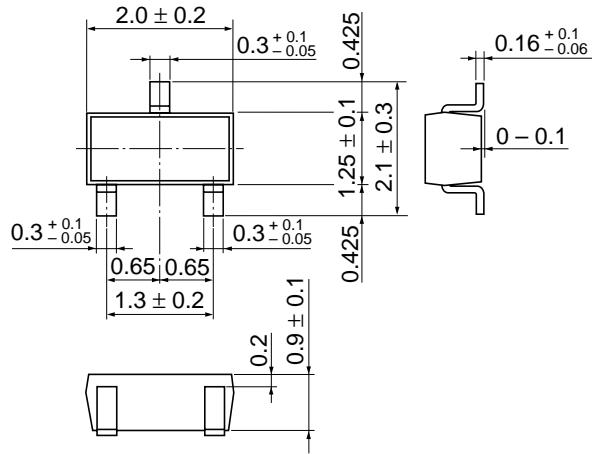


Conversion Gain, Noise Figure Test Circuit



Package Dimensions

As of January, 2001
Unit: mm



Hitachi Code	CMPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.006 g

Cautions

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