

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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# 2SC4537

Silicon NPN Epitaxial

# RENESAS

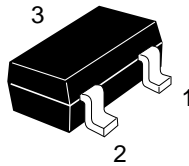
ADE-208-1110A (Z)  
2nd. Edition  
Mar. 2001

## Application

UHF / VHF wide band amplifier

## Outline

CMPAK



1. Emitter
2. Base
3. Collector

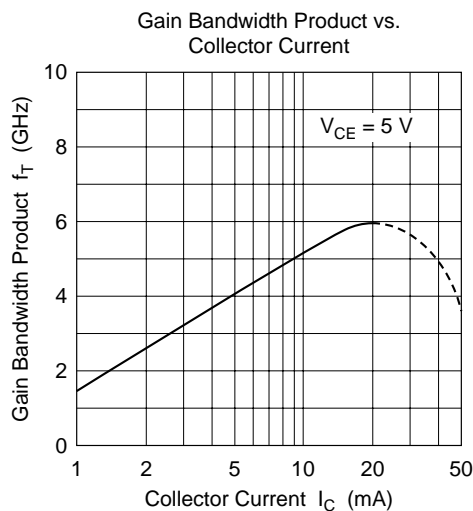
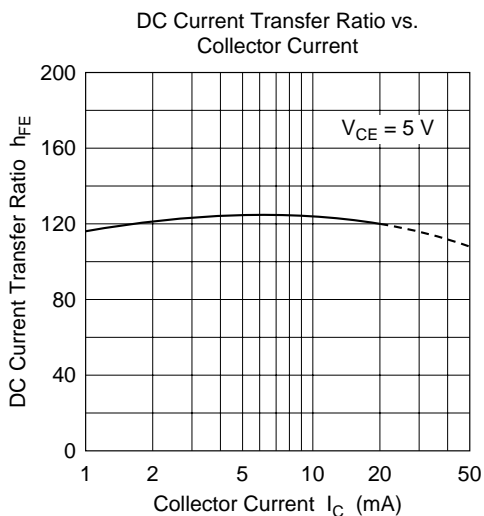
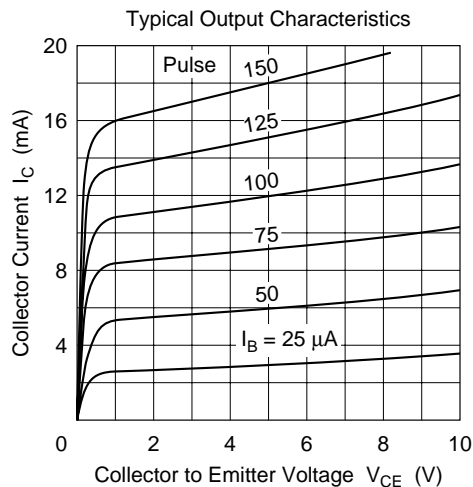
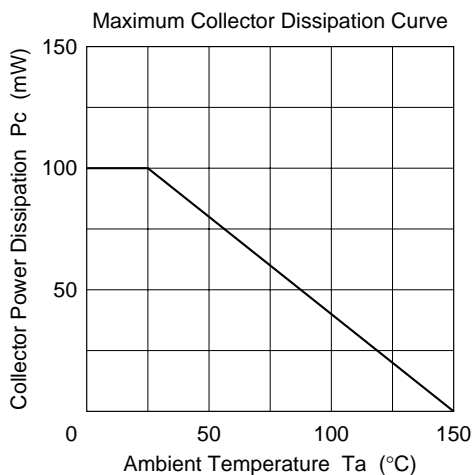
Note: Marking is "IS-".

## Absolute Maximum Ratings (Ta = 25°C)

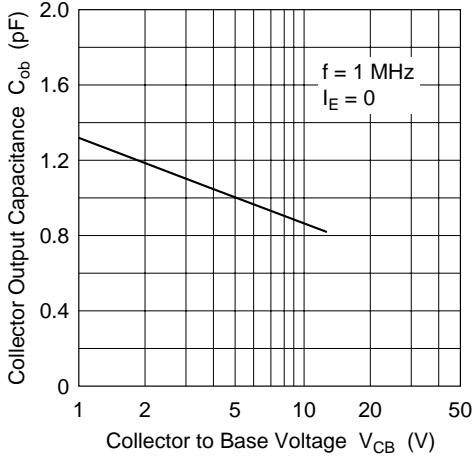
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	15	V
Collector to emitter voltage	$V_{CEO}$	11	V
Emitter to base voltage	$V_{EBO}$	2	V
Collector current	$I_C$	50	mA
Collector power dissipation	$P_C$	100	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

## Electrical Characteristics (Ta = 25°C)

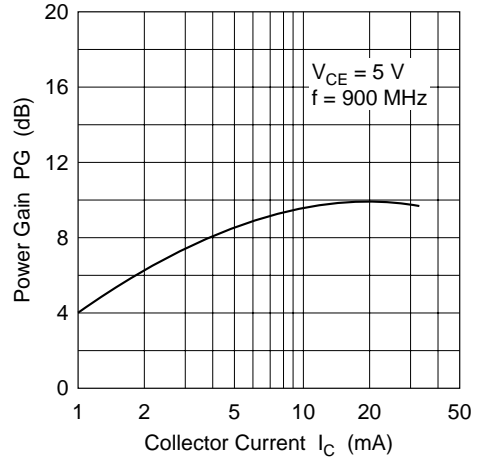
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector cutoff current	$I_{CBO}$	—	—	1	$\mu A$	$V_{CB} = 12 V, I_E = 0$
Collector cutoff current	$I_{CEO}$	—	—	1	$\mu A$	$V_{CE} = 10 V, I_E =$
Emitter cutoff current	$I_{EBO}$	—	—	1	$\mu A$	$V_{EB} = 1 V, I_C = 0$
DC current transfer ratio	$h_{FE}$	50	120	250	—	$V_{CE} = 5 V, I_C = 20 mA$
Collector output capacitance	$C_{ob}$	—	1.0	1.5	pF	$V_{CB} = 5 V, I_E = 0,$ $f = 1MHz$
Gain bandwidth product	$f_T$	4.5	6.0	—	GHz	$V_{CE} = 5 V, I_C = 20 mA$
Power gain	PG	—	10	—	dB	$V_{CE} = 5 V, I_C = 20 mA,$ $f = 900 MHz$
Noise figure	NF	—	1.6	—	dB	$V_{CE} = 5 V, I_C = 5 mA,$ $f = 900 MHz$



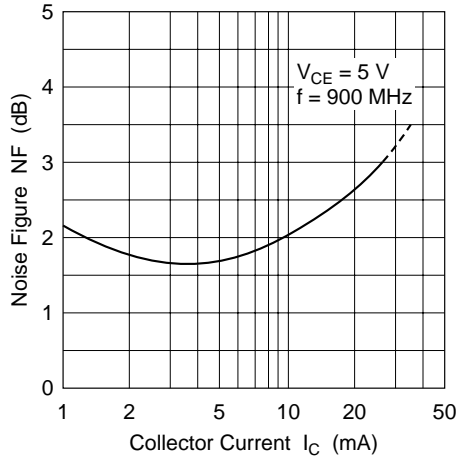
Collector Output Capacitance vs. Collector to Base Voltage



Power Gain vs. Collector Current



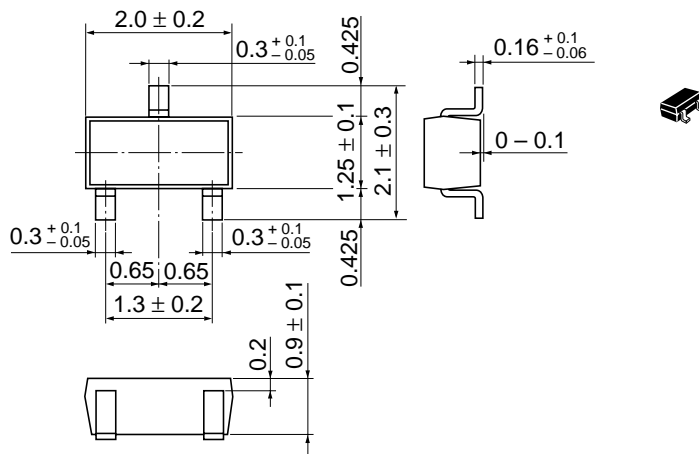
Noise Figure vs. Collector Current



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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