

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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# 2SC5852

Silicon NPN Epitaxial Planar

# RENESAS

ADE-208-1481 (Z)

Rev.0  
Feb. 2002

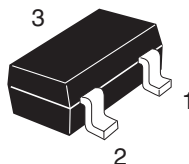
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## Features

- VHF amplifier, local oscillator

## Outline

CMPAK



1. Emitter
2. Base
3. Collector

# 2SC5852

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## 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	$V_{EBO}$	4	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C^*$	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

## Electrical Characteristics

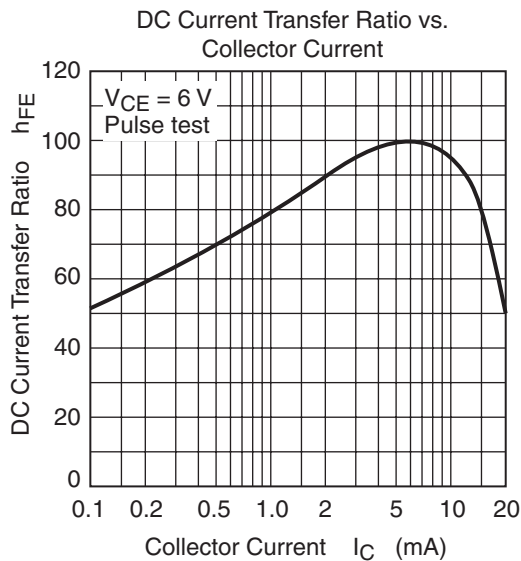
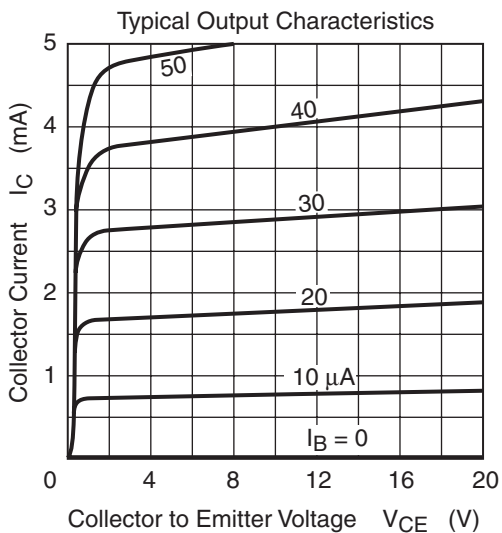
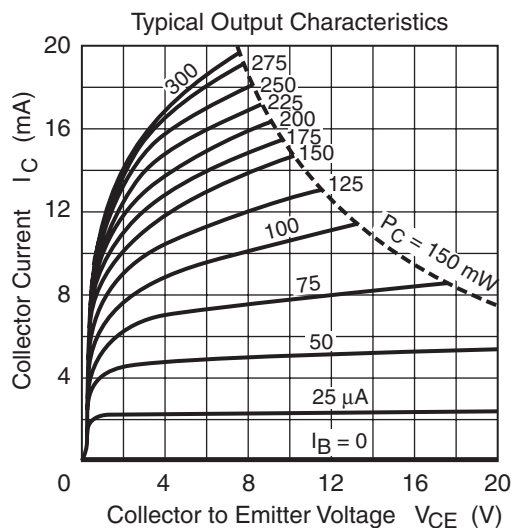
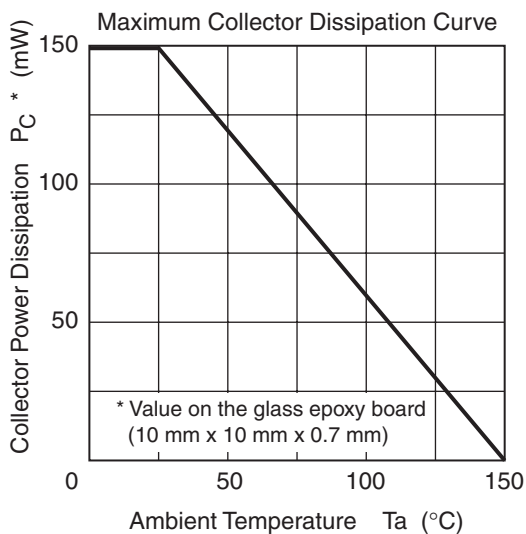
(Ta = 25°C)

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	$V_{(BR)CEO}$	20	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	4	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	$I_{CEO}$	—	—	0.5	$\mu A$	$V_{CE} = 10 \text{ V}, R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB} = 2 \text{ V}, I_C = 0$
DC current transfer ratio	$h_{FE}^{*1}$	60	—	200	—	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.17	—	V	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	0.72	—	V	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$
Gain bandwidth product	$f_T$	—	940	—	MHz	$V_{CE} = 6 \text{ V}, I_C = 5 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	0.9	—	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$

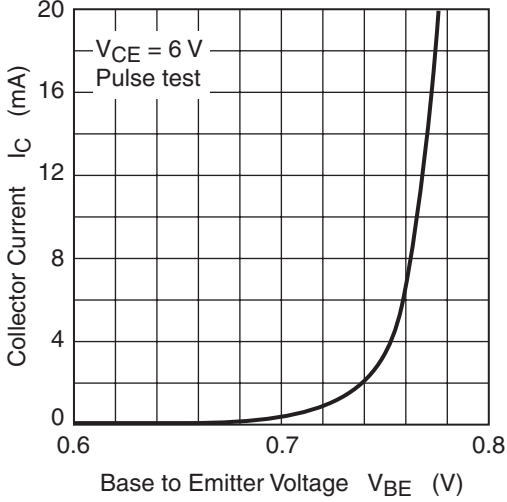
Notes: 1. The 2SC5852 is grouped by  $h_{FE}$  as follows.

Grade	B	C
Mark	QB	QC
$h_{FE}$	60 to 120	100 to 200

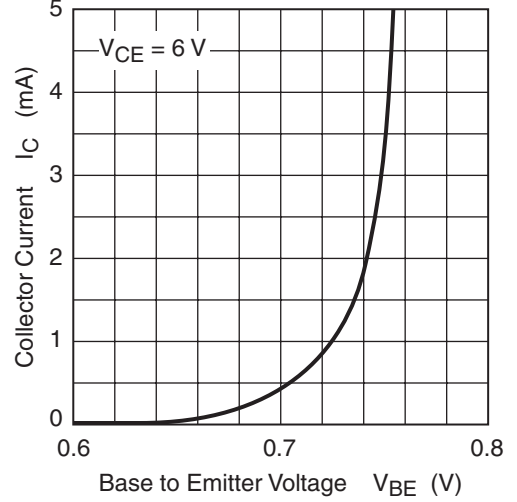
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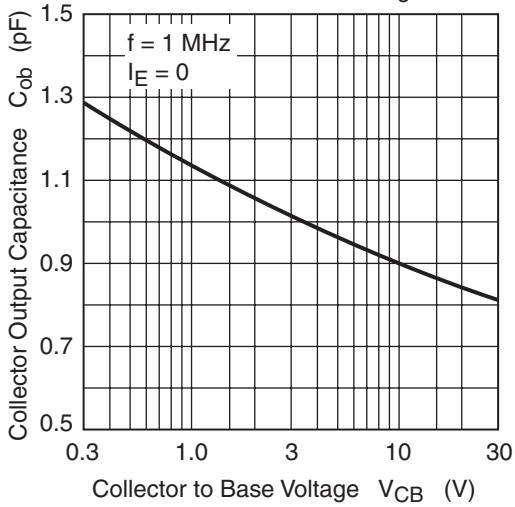
Typical Transfer Characteristics (1)



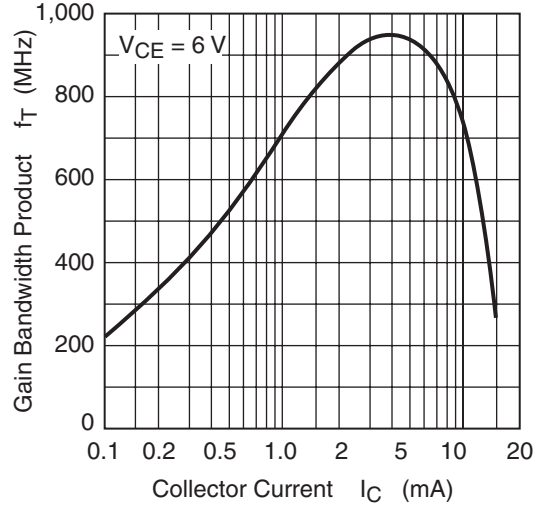
Typical Transfer Characteristics (2)



Collector Output Capacitance vs. Collector to Base Voltage



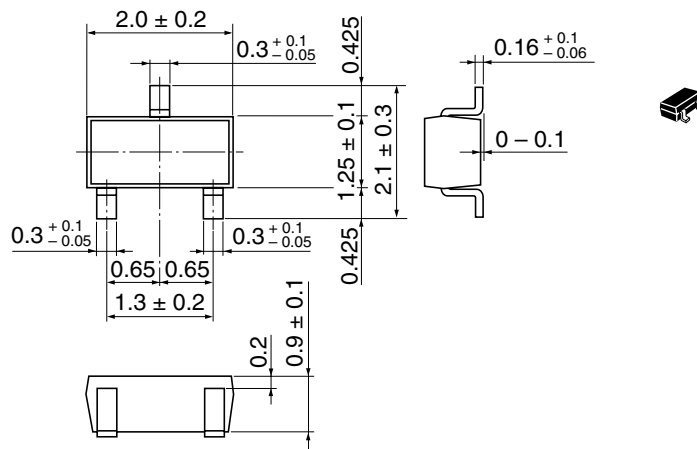
Gain Bandwidth Product vs. Collector Current



## Package Dimensions

As of July, 2001

Unit: mm



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

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