

To all our customers

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Renesas Technology Home Page: <http://www.renesas.com>

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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# 2SC5022

Silicon NPN Triple Diffused

**RENESAS**

ADE-208-896 (Z)  
1st. Edition  
September 2000

## Application

High voltage amplifier

## Features

- High breakdown voltage  $V_{(BR)CEO} = 1500 \text{ V Min}$

## Outline

TO-220FM



1. Base
2. Collector
3. Emitter

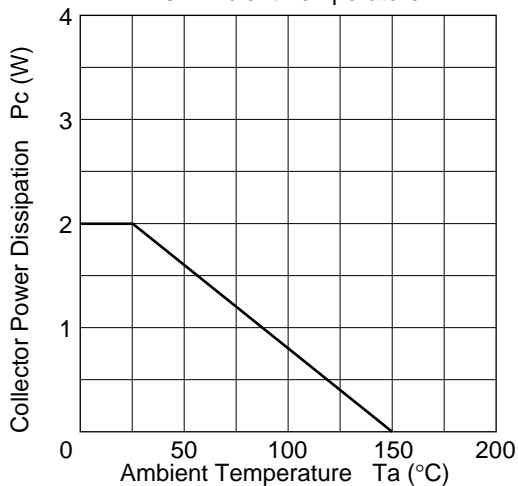
## Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	1500	V
Collector to emitter voltage	$V_{CEO}$	1500	V
Emitter to base voltage	$V_{EBO}$	6	V
Collector current	$I_C$	20	mA
Collector peak current	$I_{C(peak)}$	40	mA
Collector power dissipation	$P_C$	2	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

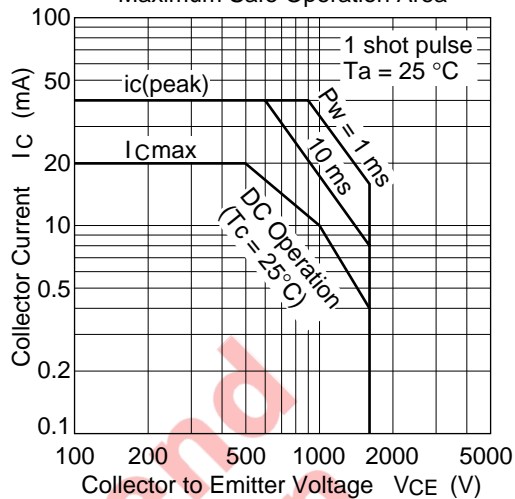
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector cutoff current	$I_{CES}$	—	—	10	$\mu A$	$V_{CE} = 1500 V, R_{BE} = 0$
Collector cutoff current	$I_{CEO}$	—	—	100	$\mu A$	$V_{CE} = 1500 V, R_{BE} =$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 6 V, I_C = 0$
DC current transfer ratio	$h_{FE}$	10	—	—		$V_{CE} = 5 V, I_C = 1 mA$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	5.0	V	$I_C = 10 mA, I_B = 2 mA$

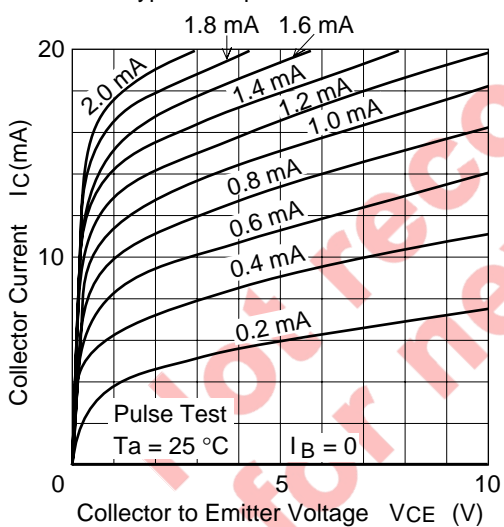
Collector Power Dissipation vs. Ambient Temperature



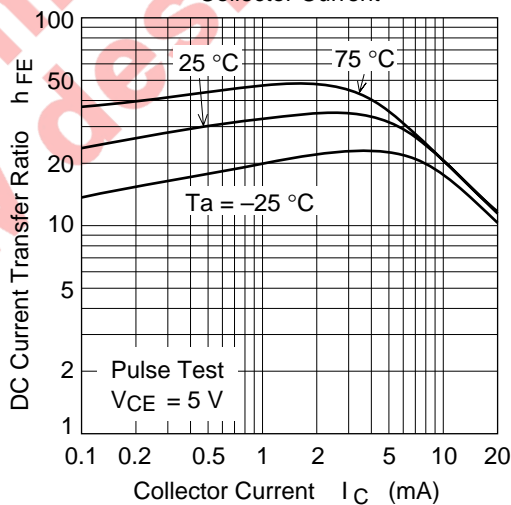
Maximum Safe Operation Area



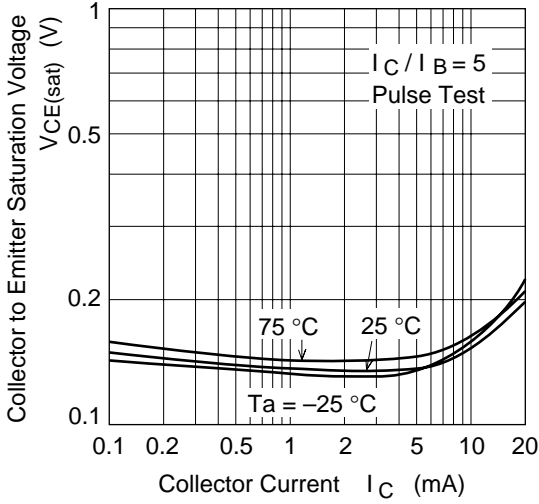
Typical Output Characteristics



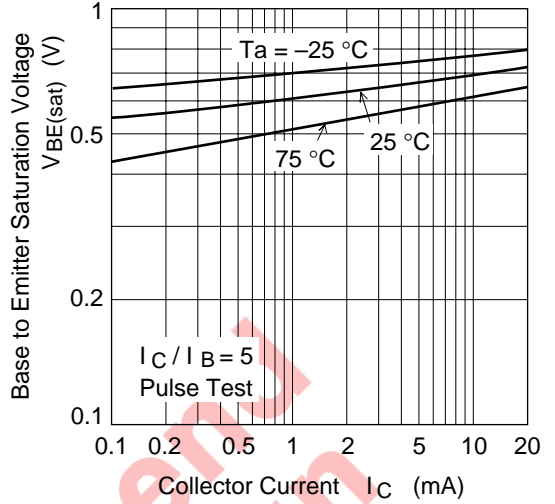
DC Current Transfer Ratio vs. Collector Current



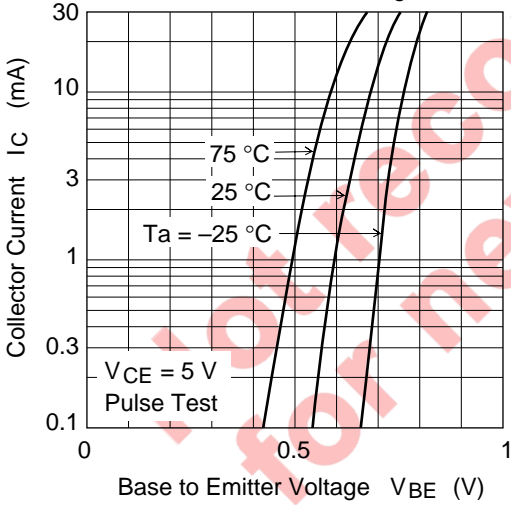
Collector to Emitter Saturation Voltage vs. Collector Current



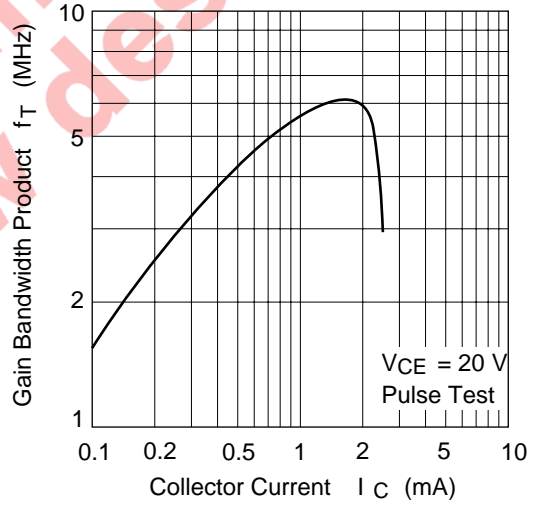
Base to Emitter Saturation Voltage vs. Collector Current

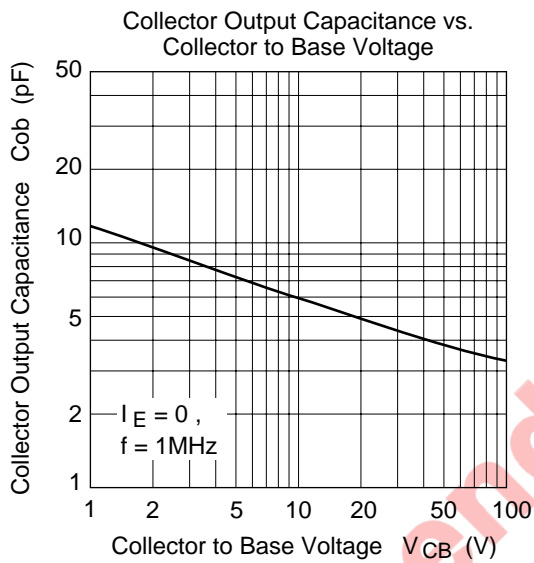


Collector Current vs. Base to Emitter Voltage



Gain Bandwidth Product vs. Collector Current





Not recommended  
for new design

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