

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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# 2SC4647

Silicon NPN Triple Diffused

**RENESAS**

## Application

High voltage amplifier

## Features

- High break down voltage  
 $V_{(BR)CEO} = 300 \text{ V min.}$

## Outline

TO-92 (1)



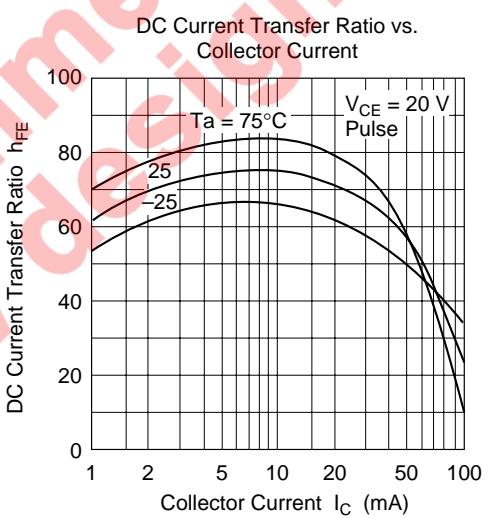
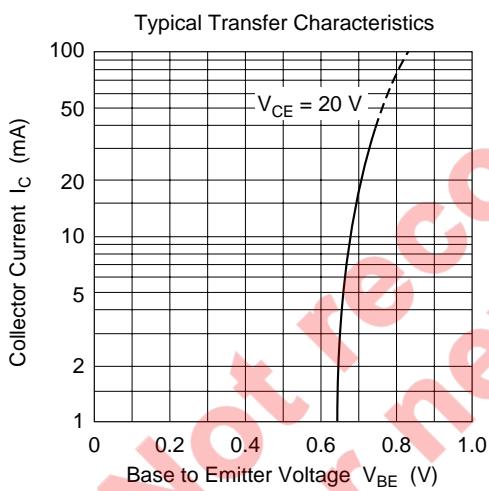
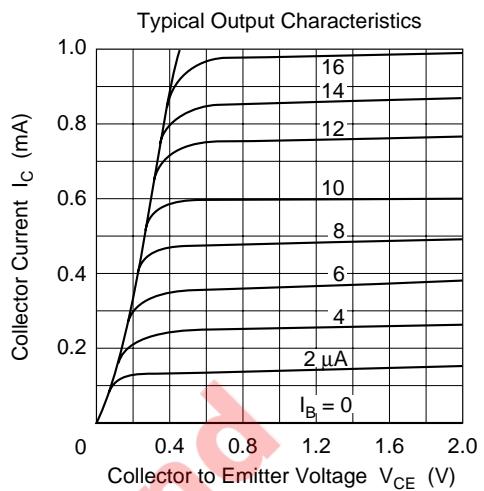
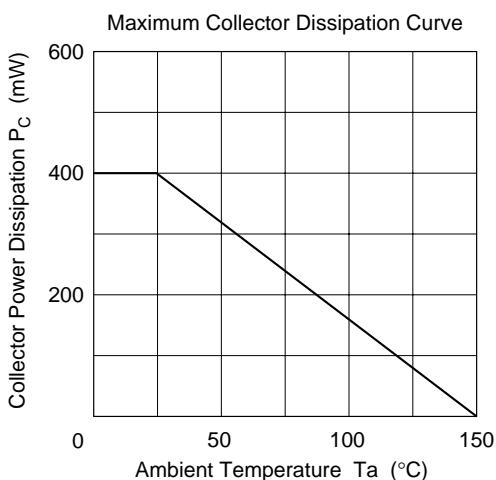
1. Emitter
2. Collector
3. Base

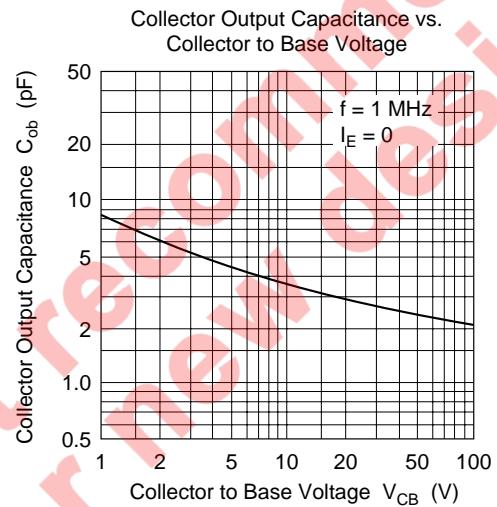
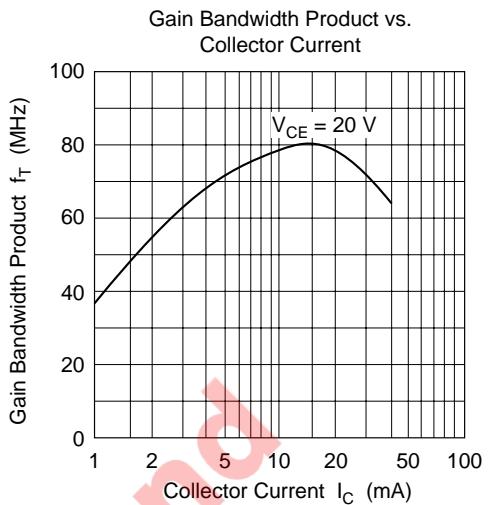
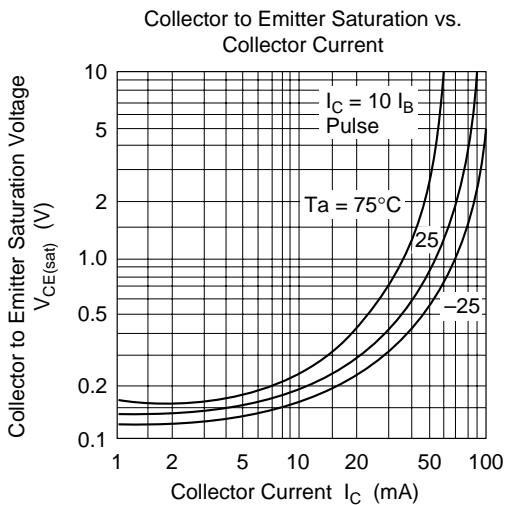
## Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V <sub>CBO</sub>	300	V
Collector to emitter voltage	V <sub>CEO</sub>	300	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	100	mA
Collector power dissipation	P <sub>C</sub>	400	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	−55 to +150	°C

## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	300	—	—	V	I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	300	—	—	V	I <sub>C</sub> = 1 mA, R <sub>BE</sub> = ∞
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	5	—	—	V	I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0
Collector cutoff current	I <sub>CBO</sub>	—	—	1.0	μA	V <sub>CB</sub> = 250 V, R <sub>BE</sub> = ∞
DC current transfer ratio	h <sub>FE</sub>	30	—	200		V <sub>CE</sub> = 20 V, I <sub>C</sub> = 20 mA
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	1.5	V	I <sub>C</sub> = 20 mA, I <sub>B</sub> = 2 mA
Gain bandwidth product	f <sub>T</sub>	50	—	—	MHz	V <sub>CE</sub> = 20 V, I <sub>C</sub> = 20 mA
Collector output capacitance	C <sub>ob</sub>	—	—	4.0	pF	V <sub>CE</sub> = 20 V, I <sub>E</sub> = 0, f = 1 MHz





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