

To all our customers

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

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Keep safety first in your circuit designs!

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# 2SB561

Silicon PNP Epitaxial

**RENESAS**

ADE-208-1023 (Z)

1st. Edition

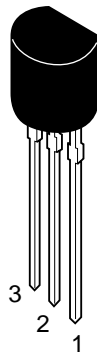
Mar. 2001

## Application

- Low frequency power amplifier
- Complementary pair with 2SD467

## Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings (Ta = 25°C)

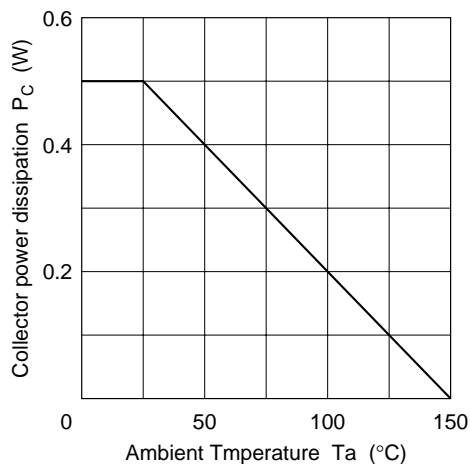
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-25	V
Collector to emitter voltage	$V_{CEO}$	-20	V
Emitter to base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-0.7	A
Collector peak current	$i_{C(peak)}$	-1.0	A
Collector power dissipation	$P_C$	0.5	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

Electrical Characteristics (Ta = 25°C)

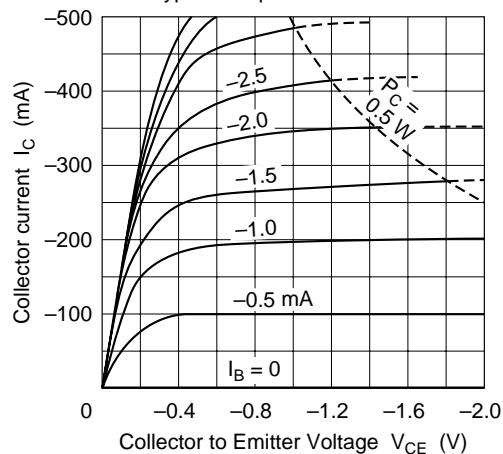
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-25	—	—	V	$I_C = -10\text{ }\mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-20	—	—	V	$I_C = -1\text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10\text{ }\mu\text{A}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-1.0	$\mu\text{A}$	$V_{CB} = -20\text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE}^{*1}$	85	—	240		$V_{CE} = -1\text{ V}$ , $I_C = -0.15\text{ A}$ (Pulse test)
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	-0.2	-0.5	V	$I_C = -0.5\text{ A}$ , $I_B = -0.05\text{ A}$
Base to emitter voltage	$V_{BE}$	—	-0.75	-1.0	V	$V_{CE} = -1\text{ V}$ , $I_C = -0.15\text{ A}$
Gain bandwidth product	$f_T$	—	350	—	MHz	$V_{CE} = -1\text{ V}$ , $I_C = -0.15\text{ A}$
Collector output capacitance	$C_{ob}$	—	20	—	pF	$V_{CB} = -10\text{ V}$ , $I_E = 0$ $f = 1\text{ MHz}$

Note: 1. The 2SB561 is grouped by  $h_{FE}$  as follows.

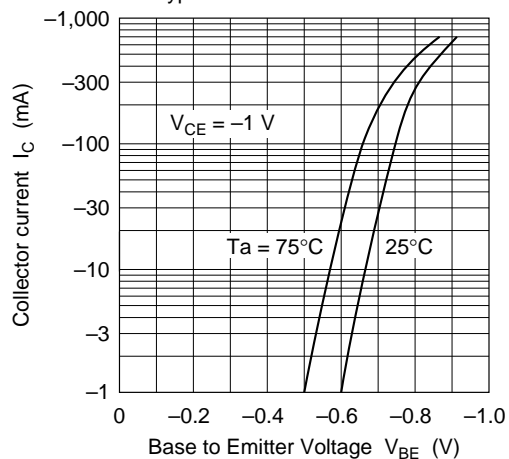
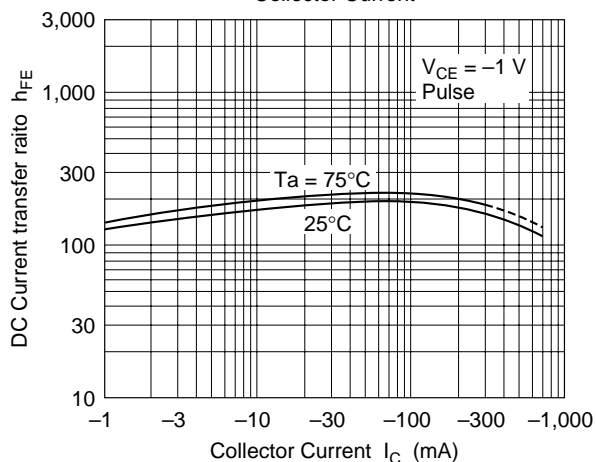
B	C
85 to 170	120 to 240

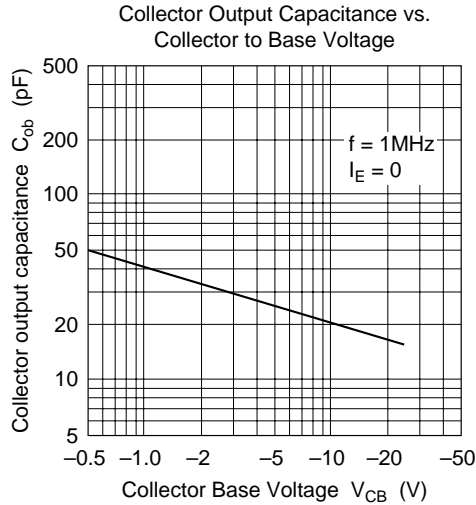
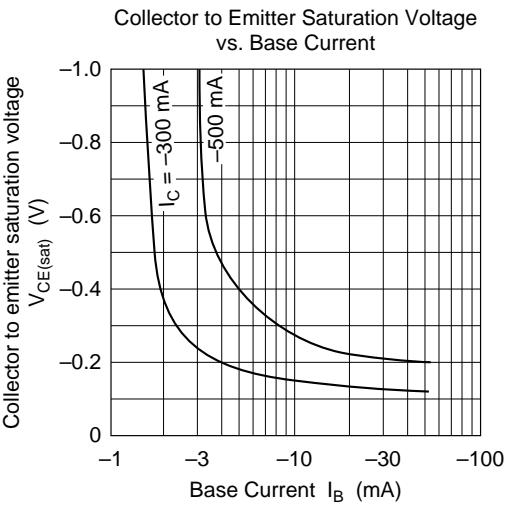
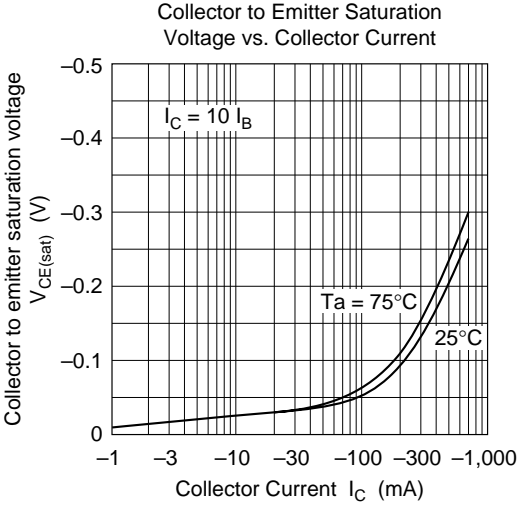
Maximum Collector Dissipation  
Curve

Typical Output Characteristics



Typical Transfer Characteristics

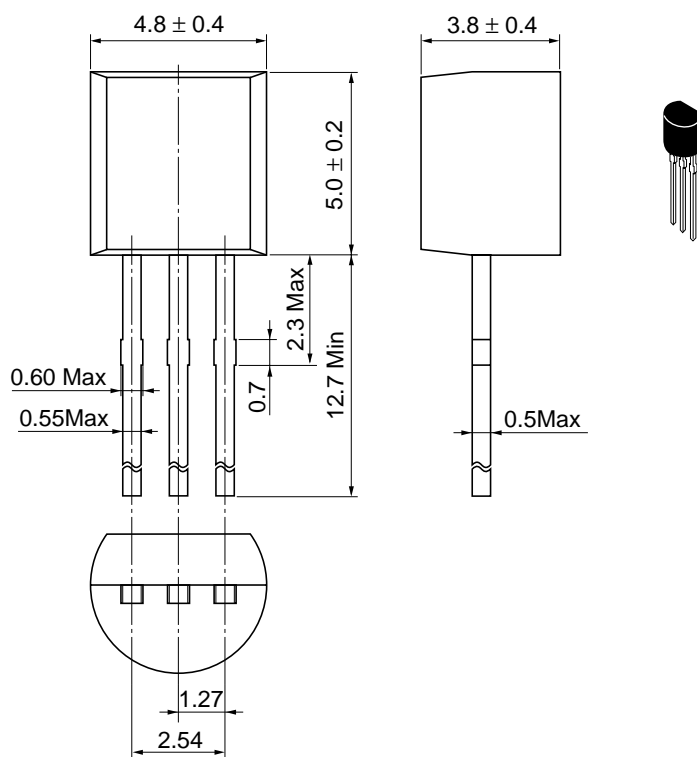
DC Current Transfer Ratio vs.  
Collector Current



## Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	0.25 g

## Cautions

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