

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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# 2SB861

Silicon PNP Triple Diffused

## RENESAS

ADE-208-862 (Z)  
1st. Edition  
September 2000

### Application

Low frequency power amplifier color TV vertical deflection output complementary pair with 2SD1138

### Outline

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter

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

Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	-200	V
Collector to emitter voltage	$V_{CEO}$	-150	V
Emitter to base voltage	$V_{EBO}$	-6	V
Collector current	$I_C$	-2	A
Collector peak current	$I_{C(peak)}$	-5	A
Collector power dissipation	$P_C$	1.8	W
	$P_C^{*1}$	30	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-45 to +150	°C

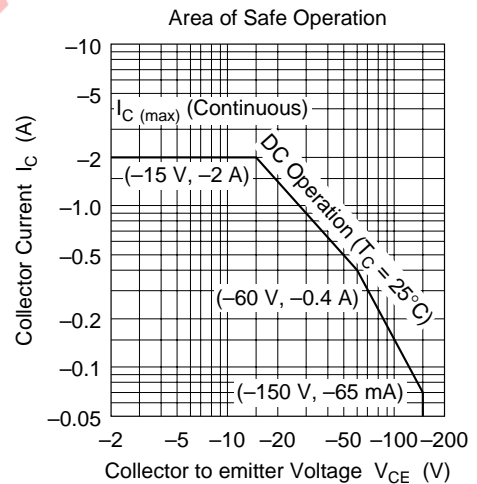
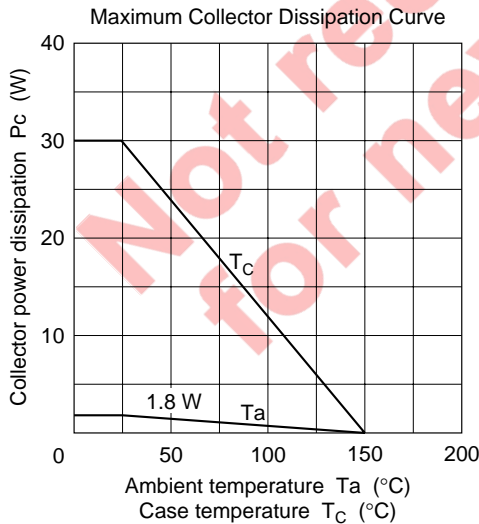
Note: 1. Value at  $T_C = 25^\circ\text{C}$

## Electrical Characteristics (Ta = 25°C)

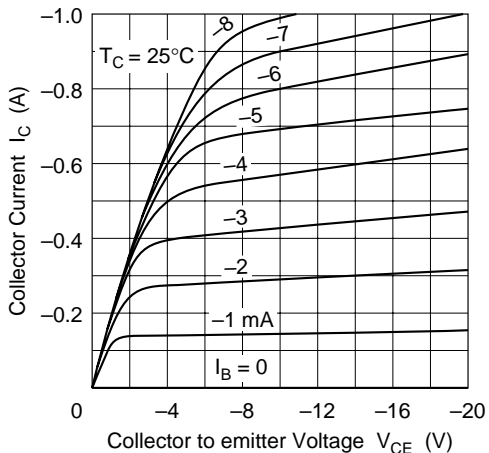
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CBO}$	-150	—	—	V	$I_C = -50 \text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-6	—	—	V	$I_E = -5 \text{ mA}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-1	$\mu\text{A}$	$V_{CB} = -120 \text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	60	—	200		$V_{CE} = -4 \text{ V}$ , $I_C = -50 \text{ mA}$
	$h_{FE2}$	60	—	—		$V_{CE} = -10 \text{ V}$ , $I_C = -500 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-3	V	$I_C = -500 \text{ mA}$ , $I_B = -50 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	—	-1	V	$V_{CE} = -4 \text{ V}$ , $I_C = -50 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	30	—	pF	$V_{CB} = -100 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

Notes: 1. The 2SB861 is grouped by  $h_{FE1}$  as follows.  
2. Pulse test

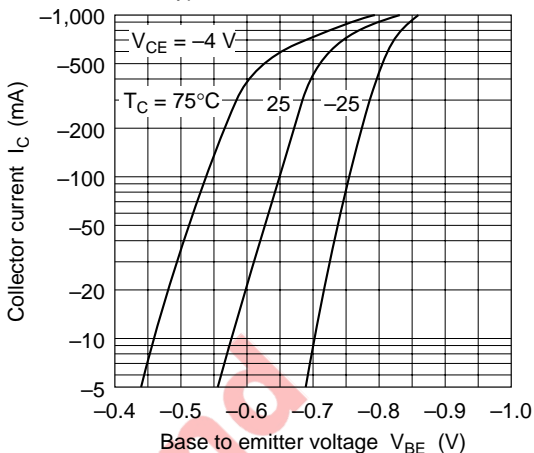
B	C
60 to 120	100 to 200



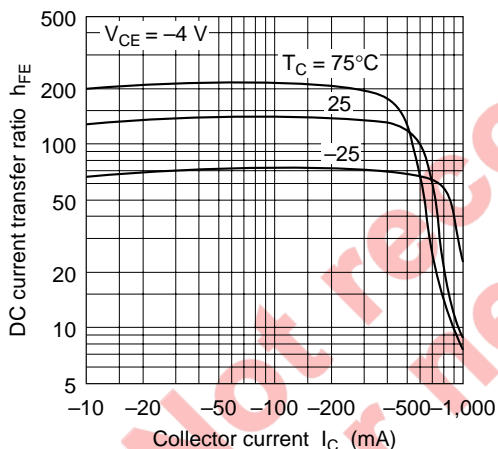
Typical Output Characteristics



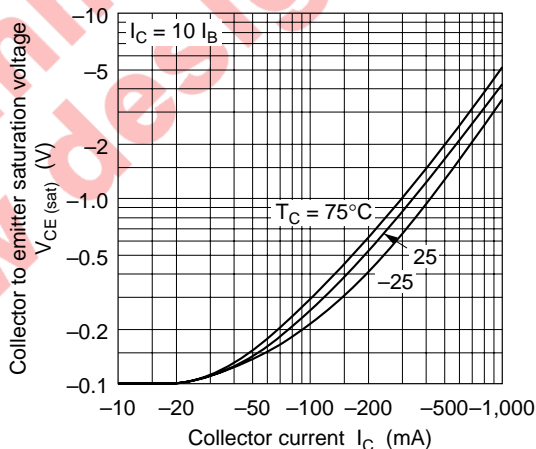
Typical Transfer Characteristics



DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Collector Current



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