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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   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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2SB859

Silicon PNP Triple Diffused

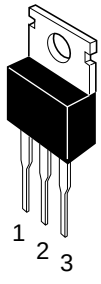
ADE-208-860 (Z)
1st. Edition
September 2000

Application

Low frequency power amplifier complementary pair with 2SD1135

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}	–100	V
Collector to emitter voltage	V_{CEO}	–80	V
Emitter to base voltage	V_{EBO}	–5	V
Collector current	I_C	–4	A
Collector peak current	$I_{C(peak)}$	–8	A
Collector power dissipation	P_C*[1]	40	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–45 to +150	°C

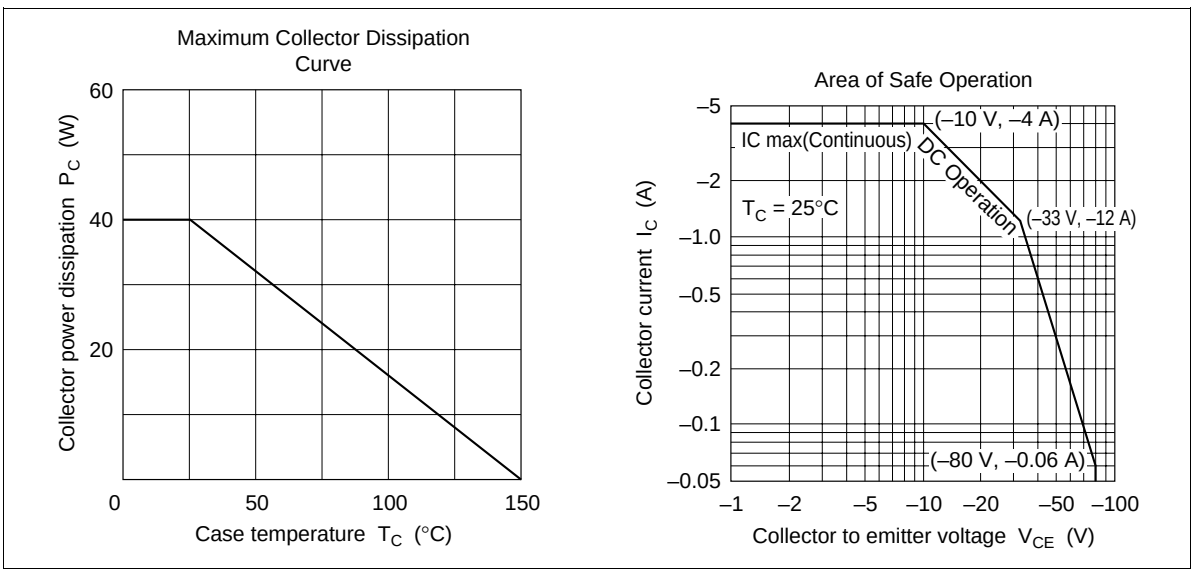
Note: 1. Value at T_C = 25°C

Electrical Characteristics (Ta = 25°C)

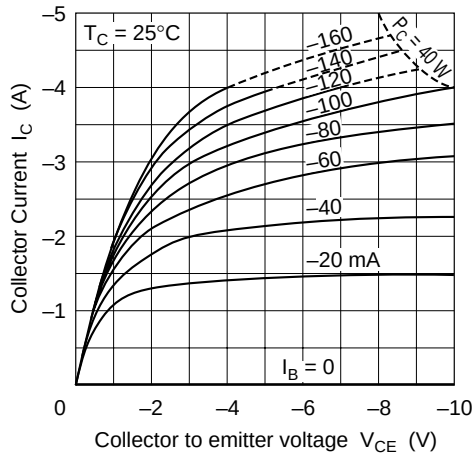
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–80	—	—	V	I_C = –50 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–5	—	—	V	I_E = –10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–0.1	mA	V_{CB} = –80 V, I_E = 0
DC current transfer ratio	h_{FE1}*[1]	60	—	200		V_{CE} = –5 V, I_C = –1 A*[2]
	h_{FE2}	35	—	—		V_{CE} = –5 V, I_C = –0.1 A*[2]
Base to emitter voltage	V_{BE}	—	—	–1.5	V	V_{CE} = –5 V, I_C = –1 A*[2]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	–2	V	I_C = –2 A, I_B = –0.2 A*[2]
Gain bandwidth product	f_T	—	20	—	MHz	V_{CE} = –5 V, I_C = –0.5 A*[2]
Collector output capacitance	Cob	—	75	—	pF	V_{CB} = –20 V, I_E = 0, f = 1 MHz

Notes: 1. The 2SB859 is grouped by h_{FE1} as follows.
2. Pulse test

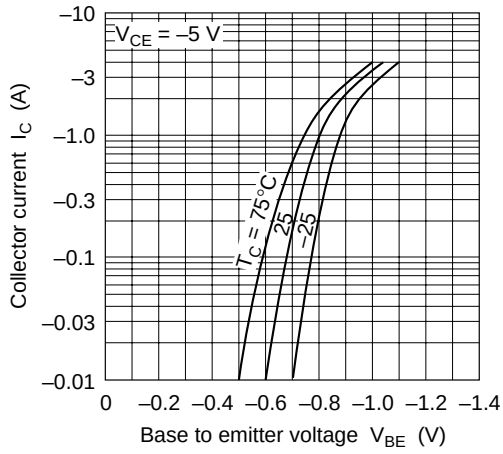
B	C
60 to 120	100 to 200



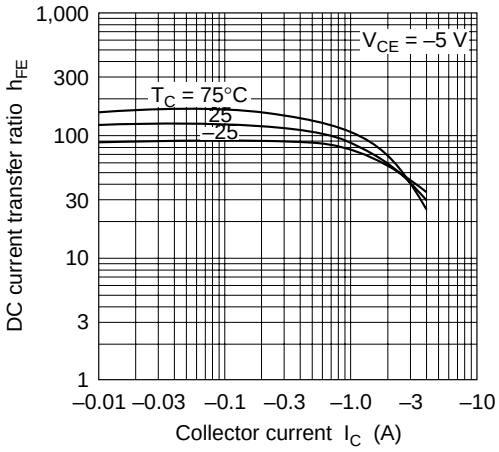
Typical Output Characteristics



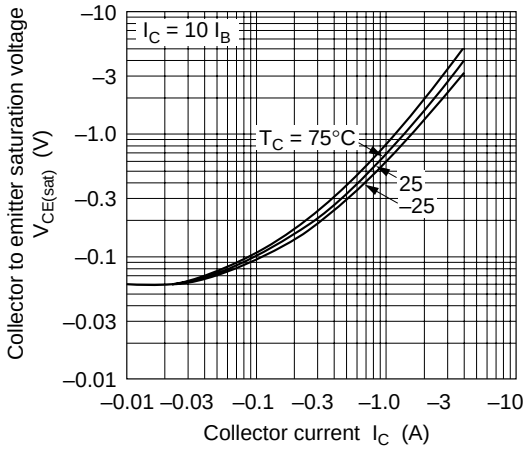
Typical Transfer Characteristcs



DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Collector Current



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HITACHI

Hitachi, Ltd.
Semiconductor & IC Div.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100, Japan
Tel: Tokyo (03) 3270-2111
Fax: (03) 3270-5109

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA. 94005-1835
U S A
Tel: 415-589-8300
Fax: 415-583-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher Straße 3
D-85622 Feldkirchen
München
Tel: 089-9 91 80-0
Fax: 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 0104
Tel: 535-2100
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 706, North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel: 27359218
Fax: 27306071

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