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

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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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2SB1002

Silicon PNP Epitaxial

RENESAS

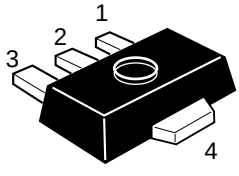
ADE-208-1035 (Z)
1st. Edition
Mar. 2001

Application

- Low frequency power amplifier
- Complementary pair with 2SD1368

Outline

UPAK



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

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	–70	V
Collector to emitter voltage	V_{CEO}	–50	V
Emitter to base voltage	V_{EBO}	–6	V
Collector current	I_C	–1	A
Collector peak current	$i_{C(peak)}$ *1	–1.5	A
Collector power dissipation	P_C *2	1	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 ms, Duty cycle ≤ 20%
2. Value on the alumina ceramic board (12.5 × 20 × 0.7 mm)

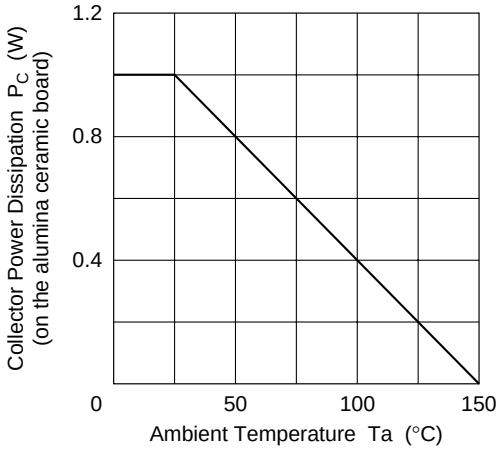
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	–70	—	—	V	I_C = –10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–50	—	—	V	I_C = –1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–6	—	—	V	I_E = –10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–0.1	µA	V_{CB} = –50 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	–0.1	µA	V_{EB} = –4 V, I_C = 0
DC current transfer ratio	h_{FE} *1	100	—	320		V_{CE} = –2 V, I_C = –0.1 A
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	–0.6	V	I_C = –1 A, I_B = –0.1 A (Pulse test)
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	–1.2	V	I_C = –1 A, I_B = –0.1 A (Pulse test)
Gain bandwidth product	f_T	—	150	—	MHz	V_{CE} = –2 V, I_C = –10 mA (Pulse test)
Collector output capacitance	Cob	—	35	—	pF	V_{CB} = –10 V, I_E = 0, f = 1 MHz

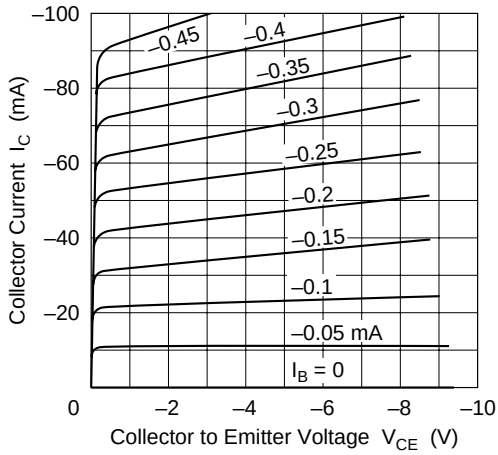
Note: 1. The 2SB1002 is grouped by h_{FE} as follows.

Mark	CH	CJ
h_{FE}	100 to 200	160 to 320

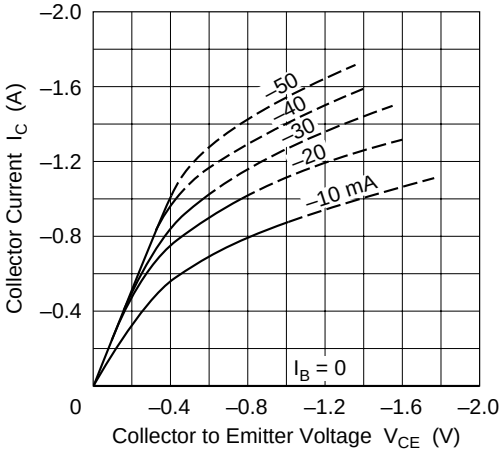
Maximum Collector Dissipation Curve



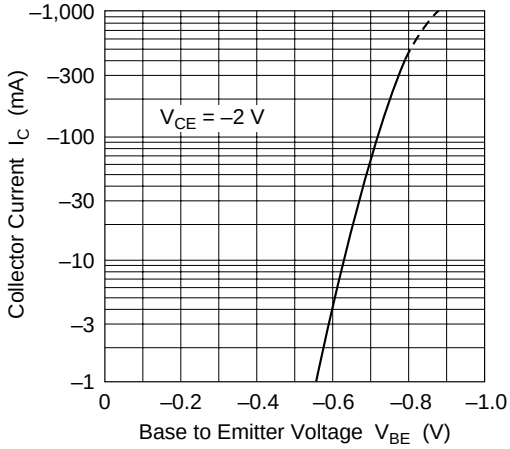
Typical Output Characteristics



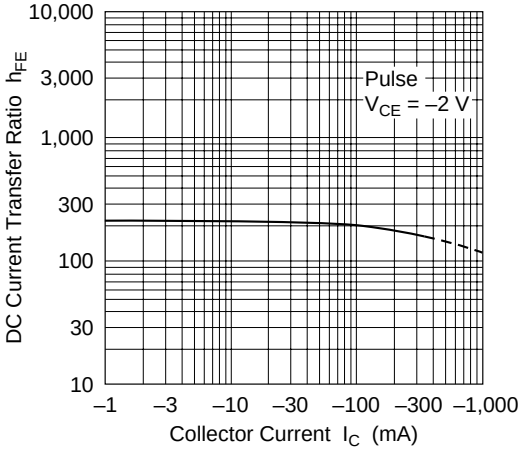
Typical Output Characteristics



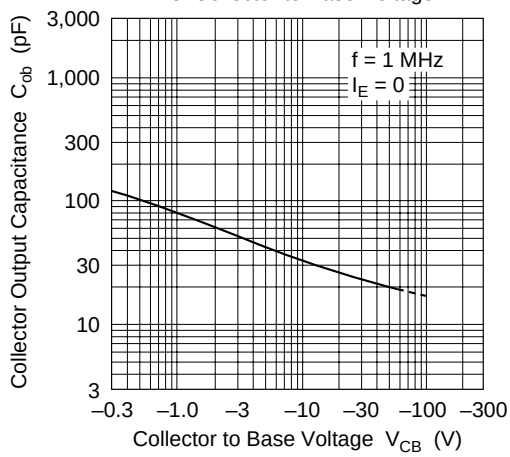
Typical Transfer Characteristics



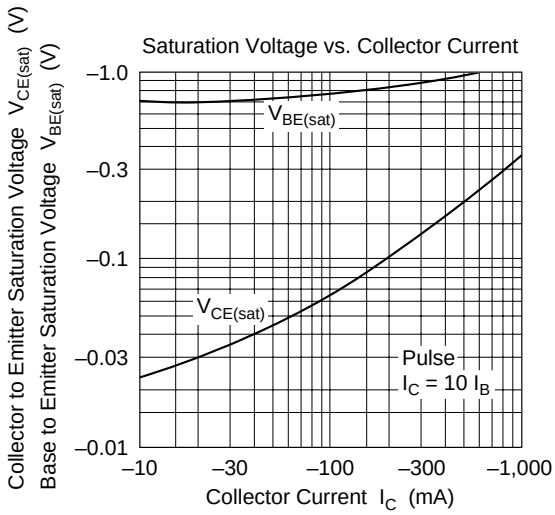
DC Current Transfer Ratio vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage



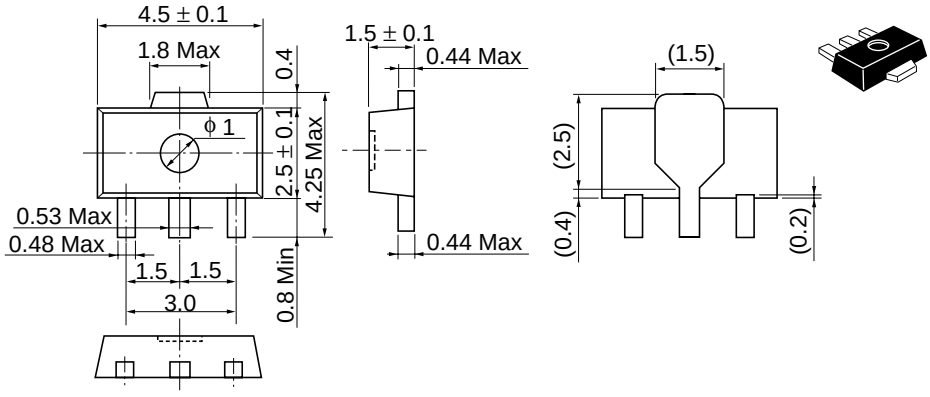
Saturation Voltage vs. Collector Current



Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	UPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.050 g

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