

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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2SB1407(L)/(S)

Silicon PNP Epitaxial

RENESAS

ADE-208-876 (Z)

1st. Edition

September 2000

Application

Low frequency power amplifier complementary Pair with 2SD2121(L)/(S)

Outline

DPAK



S Type



L Type

- 1. Base
- 2. Collector
- 3. Emitter
- 4. Collector

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	−35	V
Collector to emitter voltage	V _{CEO}	−35	V
Emitter to base voltage	V _{EBO}	−5	V
Collector current	I _C	−2.5	A
Collector peak current	I _{C(peak)}	−3	A
Collector power dissipation	P _C ^{*1}	18	W
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

Note: 1. Value at T_C = 25°C.

Electrical Characteristics (Ta = 25°C)

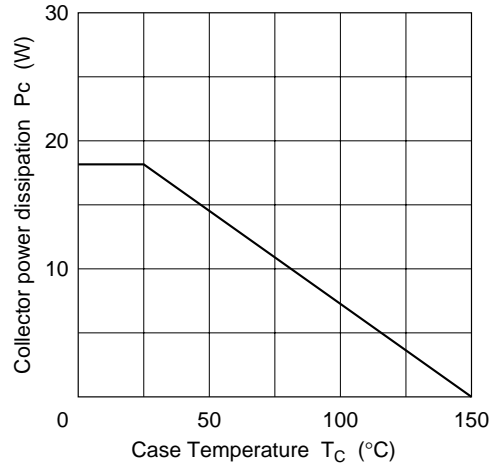
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	V _{(BR)CBO}	−35	—	—	V	I _C = −1 mA, I _E = 0
Collector to emitter breakdown voltage	V _{(BR)CEO}	−35	—	—	V	I _C = −10 mA, R _{BE} = ∞
Emitter to base breakdown voltage	V _{(BR)EBO}	−5	—	—	V	I _E = −1 mA, I _C = 0
Collector cutoff current	I _{CBO}	—	—	−20	μA	V _{CB} = −35 V, I _E = 0
DC current transfer ratio	h _{FE1} ^{*1}	60	—	320		V _{CE} = −2 V, I _C = −0.5 A ^{*2}
	h _{FE2}	20	—	—		V _{CE} = −2 V, I _C = −1.5 A ^{*2}
Base to emitter voltage	V _{BE}	—	—	−1.5	V	V _{CE} = −2 V, I _C = −1.5 A ^{*2}
Collector to emitter saturation voltage	V _{CE(sat)}	—	—	−1.0	V	I _C = −2 A, I _B = −0.2 A ^{*2}

Notes: 1. The 2SB1407(L)/(S) is grouped by h_{FE1} as follows.

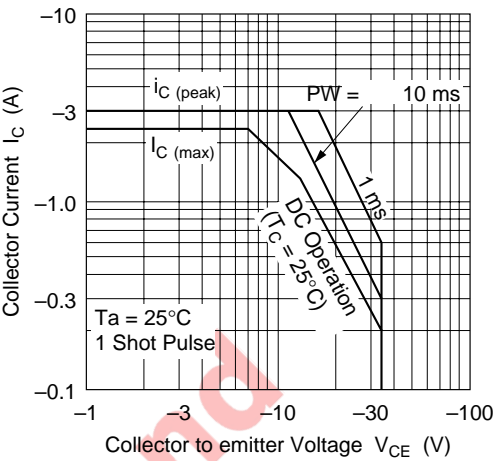
B	C	D
60 to 120	100 to 200	160 to 320

2. Pulse test.

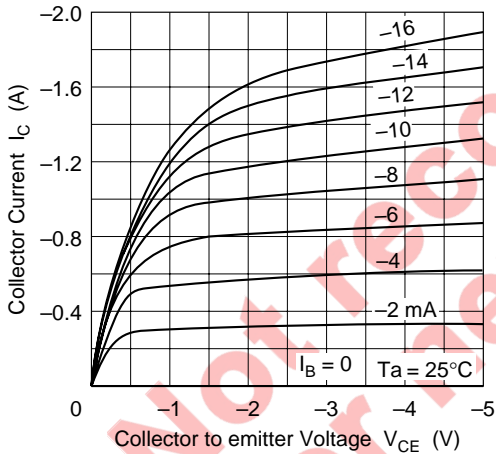
Maximum Collector Dissipation Curve



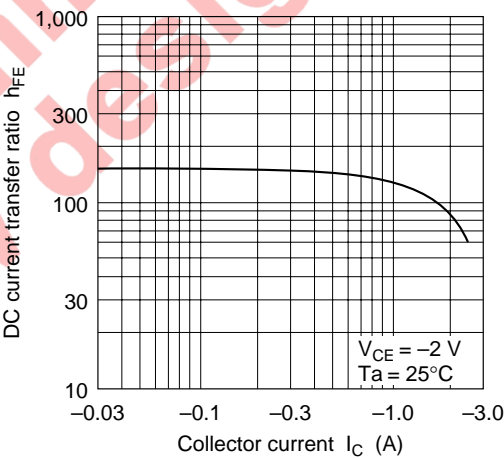
Area of Safe Operation

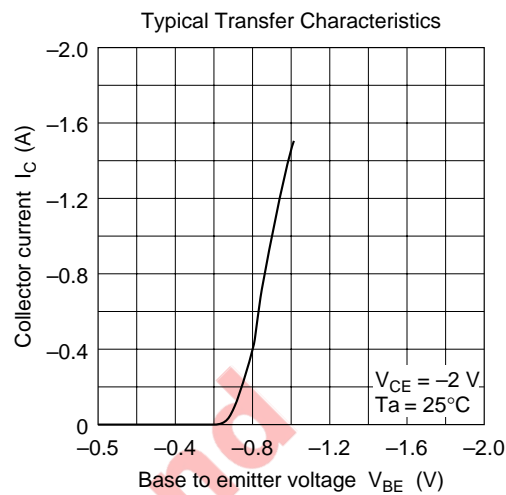
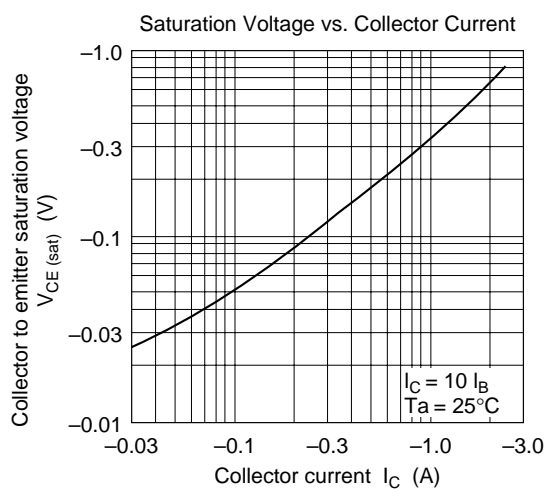


Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current





Not recommended
for new design

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