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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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2SB1407(L)/(S)

Silicon PNP Epitaxial

RENESAS

ADE-208-876 (Z)
1st. Edition
September 2000

Application

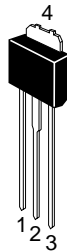
Low frequency power amplifier complementary Pair with 2SD2121(L)/(S)

Outline

DPAK



S Type



L Type

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

2SB1407(L)/(S)

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 $T_C = 25^\circ\text{C}$.

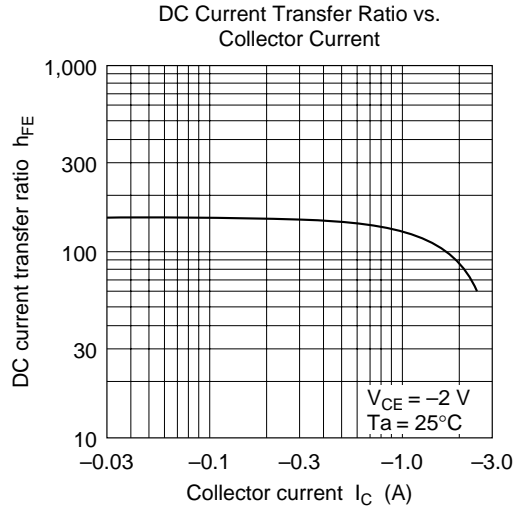
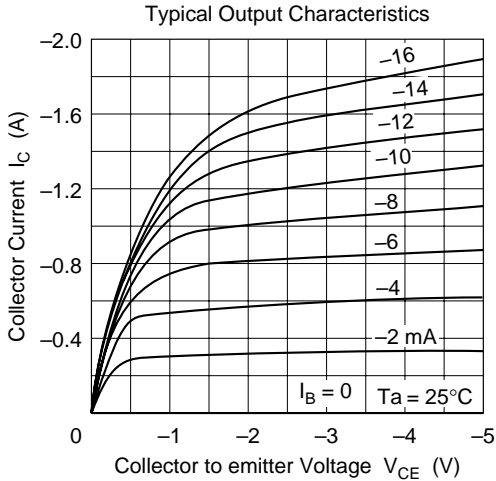
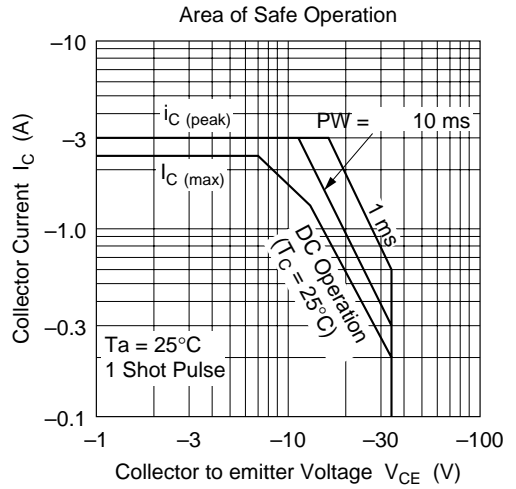
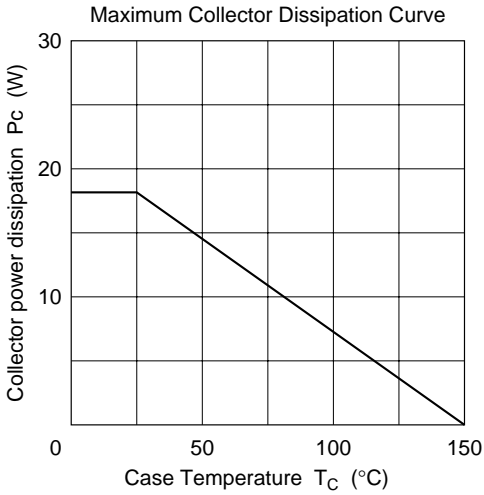
Electrical Characteristics (Ta = 25°C)

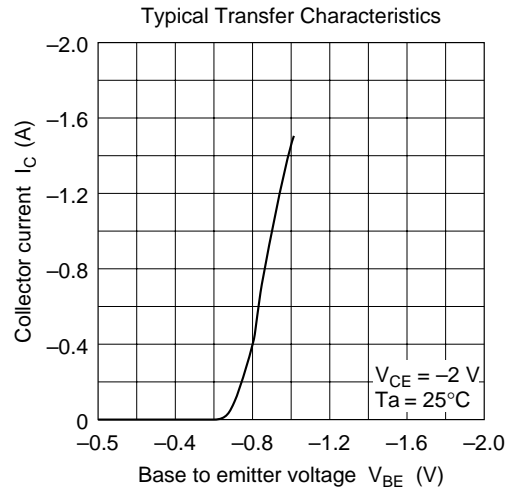
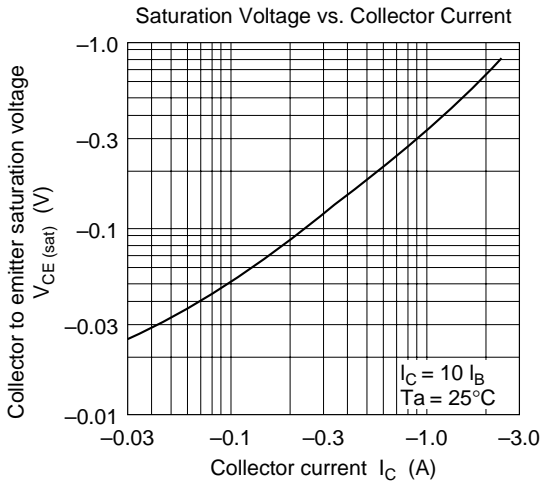
| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|-----------------------------------------|----------------|-----|-----|------|---------------|-----------------------------------------------------|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | -35 | — | — | V | $I_C = -1\text{ mA}$, $I_E = 0$ |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | -35 | — | — | V | $I_C = -10\text{ mA}$, $R_{BE} = \infty$ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | -5 | — | — | V | $I_E = -1\text{ mA}$, $I_C = 0$ |
| Collector cutoff current | I_{CBO} | — | — | -20 | μA | $V_{CB} = -35\text{ V}$, $I_E = 0$ |
| DC current transfer ratio | h_{FE1}^{*1} | 60 | — | 320 | | $V_{CE} = -2\text{ V}$, $I_C = -0.5\text{ A}^{*2}$ |
| | h_{FE2} | 20 | — | — | | $V_{CE} = -2\text{ V}$, $I_C = -1.5\text{ A}^{*2}$ |
| Base to emitter voltage | V_{BE} | — | — | -1.5 | V | $V_{CE} = -2\text{ V}$, $I_C = -1.5\text{ A}^{*2}$ |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | — | -1.0 | V | $I_C = -2\text{ A}$, $I_B = -0.2\text{ A}^{*2}$ |

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.





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