
2SD1471

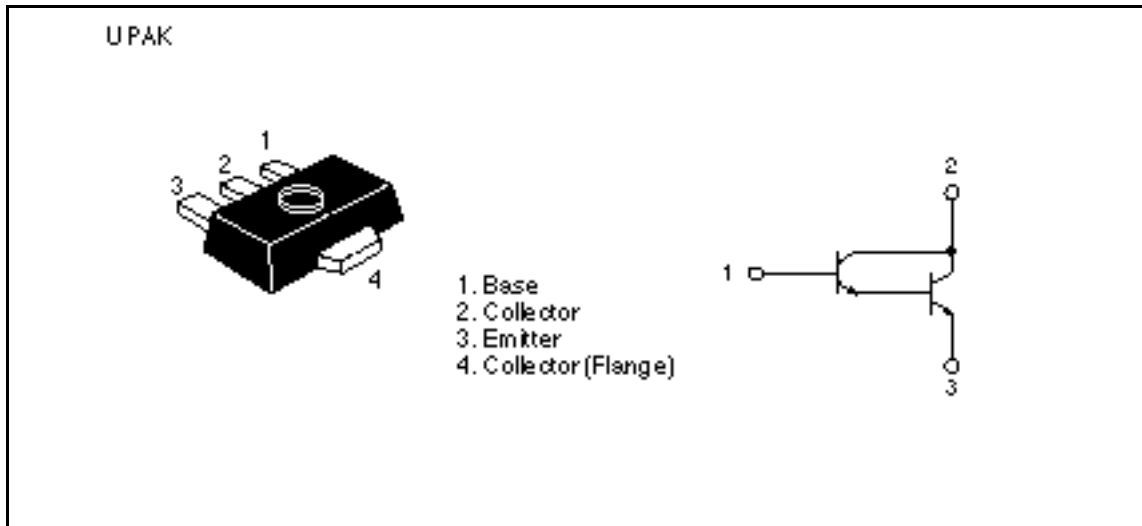
Silicon NPN Planar, Darlington

HITACHI

Application

High gain amplifier

Outline



2SD1471

Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|------------------------------|---------------------------|-------------|------|
| Collector to base voltage | V_{CBO} | 40 | V |
| Collector to emitter voltage | V_{CEO} | 30 | V |
| Emitter to base voltage | V_{EBO} | 10 | V |
| Collector current | I_C | 300 | mA |
| Collector peak current | $i_{C(\text{peak})}^{*1}$ | 500 | mA |
| Collector power dissipation | P_C^{*2} | 1 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | °C |

Notes: 1. Pulse 10 ms, Duty cycle 20%

2. Value on the alumina ceramic board (12.5 x 30 x 0.7 mm)

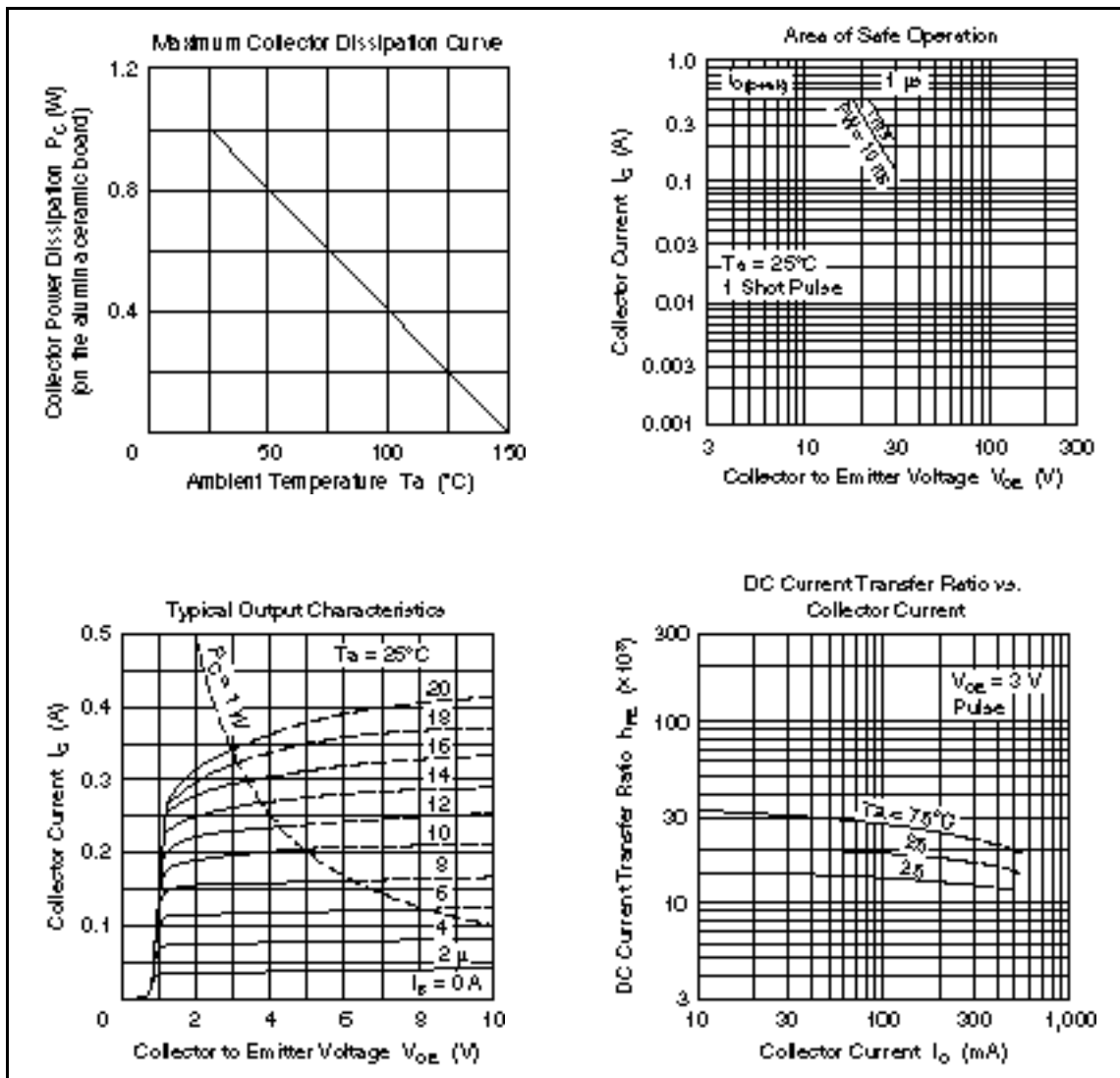
Electrical Characteristics (Ta = 25°C)

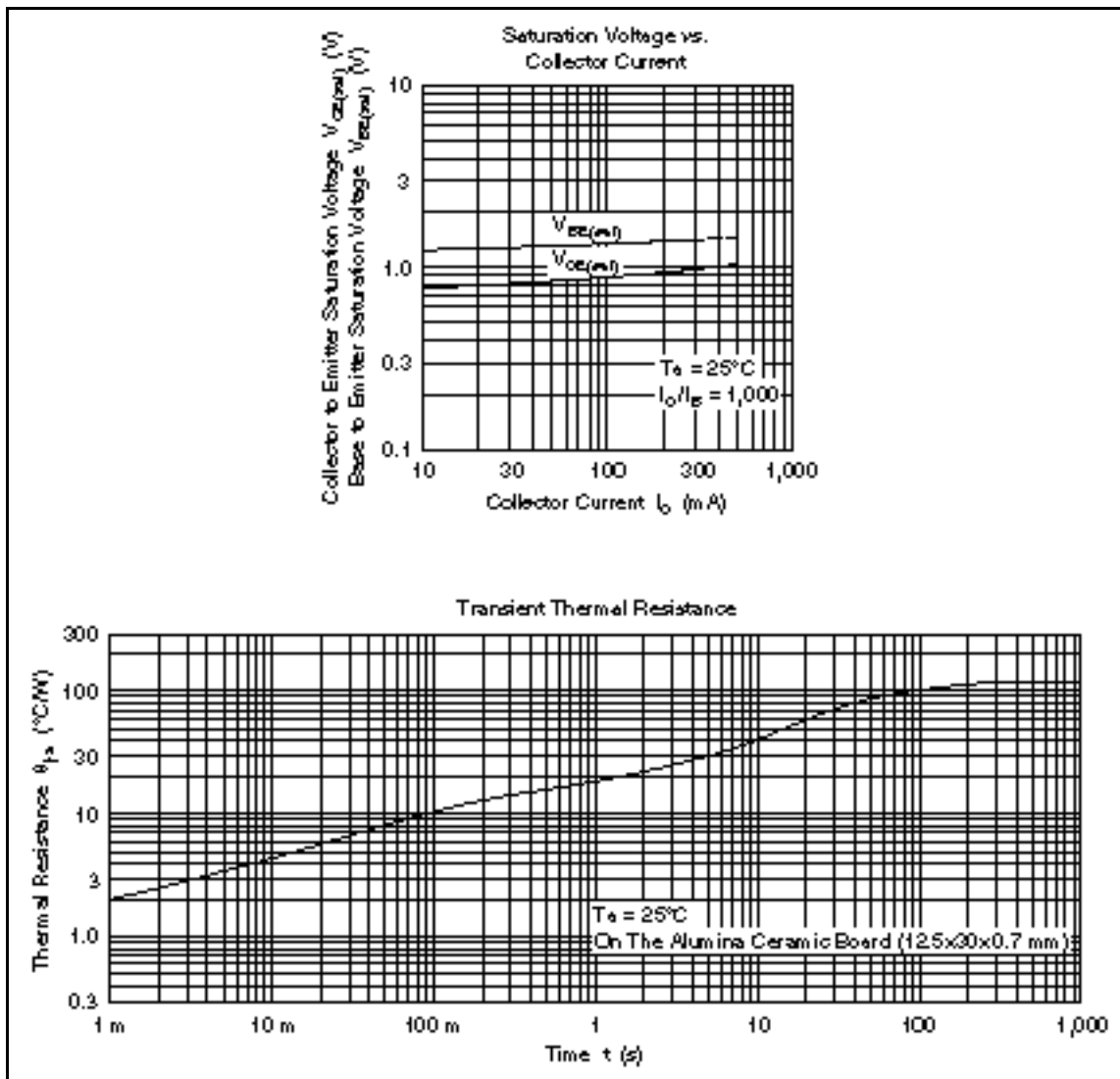
| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|---|----------------------|------|-----|--------|---------------|--|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 40 | — | — | V | $I_C = 10 \mu\text{A}$, $I_E = 0$ |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | 30 | — | — | V | $I_C = 1 \text{ mA}$, $R_{BE} =$ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | 10 | — | — | V | $I_E = 10 \mu\text{A}$, $I_C = 0$ |
| Collector cutoff current | I_{CBO} | — | — | 1 | μA | $V_{CB} = 30 \text{ V}$, $I_E = 0$ |
| | I_{CEO} | — | — | 10 | μA | $V_{CE} = 24 \text{ V}$, $R_{BE} =$ |
| DC current transfer ratio | h_{FE1}^{*1} | 2000 | — | 100000 | | $V_{CE} = 5 \text{ V}$, $I_C = 10 \text{ mA}^{*2}$ |
| | h_{FE2}^{*1} | 3000 | — | — | | $V_{CE} = 5 \text{ V}$, $I_C = 100 \text{ mA}^{*2}$ |
| | h_{FE3}^{*1} | 3000 | — | — | | $V_{CE} = 5 \text{ V}$, $I_C = 400 \text{ mA}^{*2}$ |
| Collector to emitter saturation voltage | $V_{CE(\text{sat})}$ | — | — | 1.5 | V | $I_C = 100 \text{ mA}$, $I_B = 0.1 \text{ mA}^{*2}$ |
| Base to emitter saturation voltage | $V_{BE(\text{sat})}$ | — | — | 2.0 | V | $I_C = 100 \text{ mA}$, $I_B = 0.1 \text{ mA}^{*2}$ |

Notes: 1. The 2SD1471 is grouped by h_{FE} as follows.

2. Pulse test

| Mark | DT | ET |
|-----------|----------------|----------------|
| h_{FE1} | 2000 to 100000 | 5000 to 100000 |
| h_{FE2} | 3000 min | 10000 min |
| h_{FE3} | 3000 min | 10000 min |





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