# 2SC4500(L)/(S)

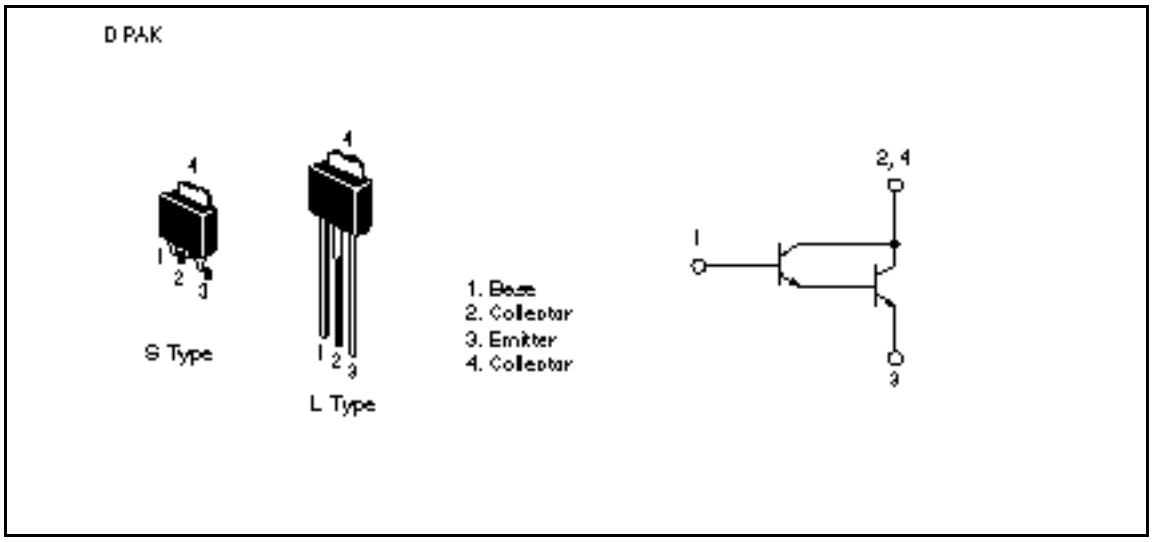
Silicon NPN Epitaxial

HITACHI

## Application

Low frequency amplifier

## Outline



## Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | 60 | V |
| Collector to emitter voltage | $V_{CEO}$ | 60 | V |
| Emitter to base voltage | $V_{EBO}$ | 7 | V |
| Collector current | $I_C$ | 1 | A |
| Collector peak current | $I_{C\ (peak)}$ | 2 | A |
| Collector power dissipation | $P_C$ | 0.8 | W |
| | $P_C$*[1] | 8 | |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

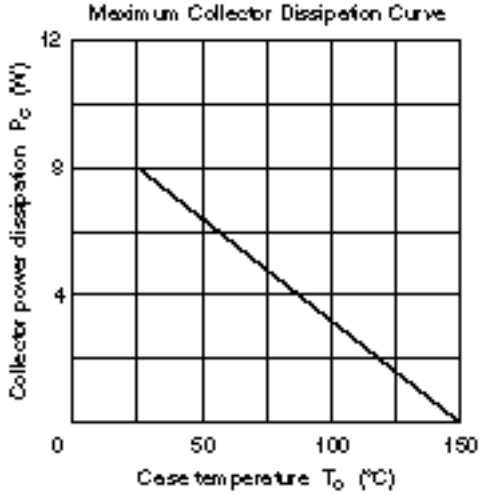
Note: 1. Value at $T_C$ = 25°C.

## Electrical Characteristics (Ta = 25°C)

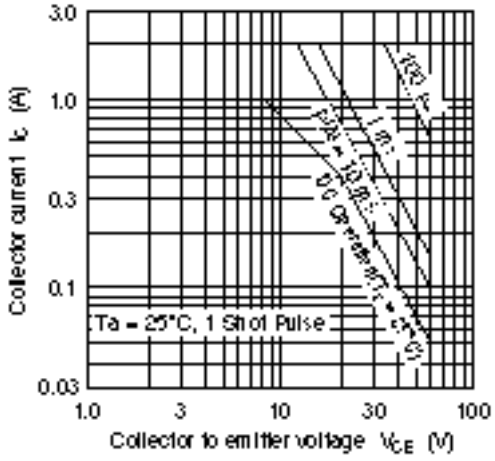
| Item | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | 60 | — | — | V | $I_C$ = 1 mA, $R_{BE}$ = ∞ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | 7 | — | — | V | $I_E$ = 0.1 mA, $I_C$ = 0 |
| Collector cutoff current | $I_{CBO}$ | — | — | 10 | µA | $V_{CB}$ = 60 V, $I_E$ = 0 |
| DC current transfer ratio | $h_{FE}$ | 2000 | — | — | | $V_{CE}$ = 10 V, $I_C$ = 500 mA*[1] |
| Collector to emitter saturation voltage | $V_{CE\ (sat)}$ | — | — | 1.5 | V | $I_C$ = 500 mA, $I_B$ = 0.5 mA*[1] |
| Base to emitter saturation voltage | $V_{BE\ (sat)}$ | — | — | 2.0 | V | $I_C$ = 500 mA, $I_B$ = 0.5 mA*[1] |
| Turn on time | $t_{on}$ | — | 100 | — | ns | $V_{CC}$ = 12 V, IC = 250 mA, |
| Turn off time | $t_{off}$ | — | 600 | — | ns | $I_{B1}$ = –$I_{B2}$ = 5 mA |

Note: 1. Pulse Test.

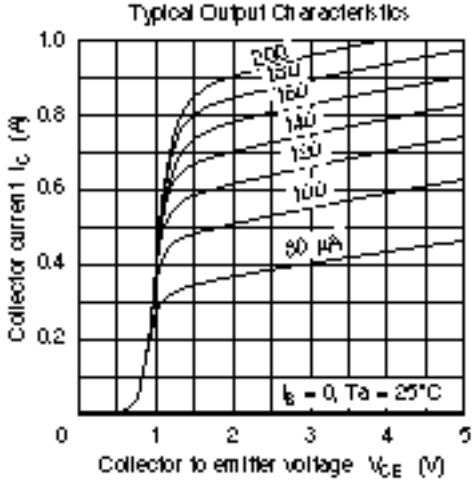
Maximum Collector Dissipation Curve



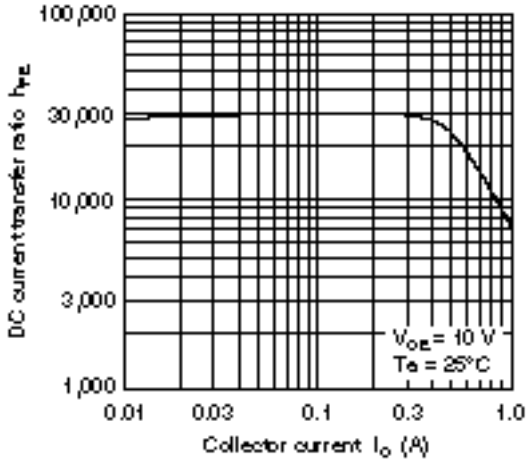

Area of Safe Operation



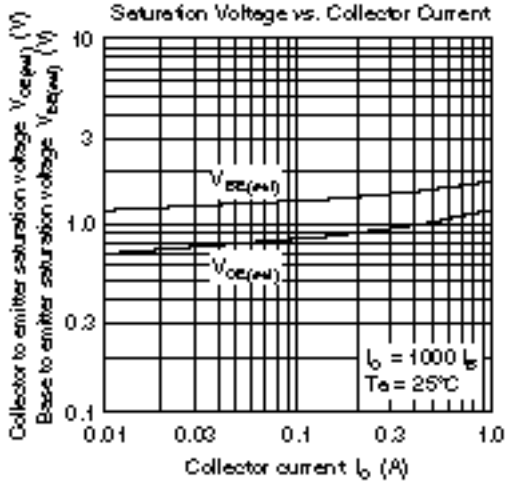

Typical Output Characteristics




DC Current Transfer Ratio vs. Collector Current




Saturation Voltage vs. Collector Current



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