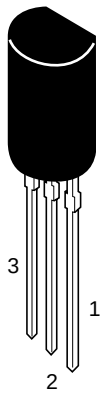
# 2SB1505

**Silicon PNP Epitaxial**
**Low Frequency Power Amplifier, Switching**

## Features

- Suitable for audio low frequency amplifier and switching.
- Low saturation voltage
  $V_{CE(sat)}$ = –0.15 V Typ. (at $I_C$ = –2 A)

TO-92MOD




1. Emitter
2. Collector
3. Base

**Table 1 Absolute Maximum Ratings**
(Ta = 25°C)

| Item | Symbol | Rating | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | –30 | V |
| Collector to emitter voltage | $V_{CEO}$ | –25 | V |
| Emitter to base voltage | $V_{EBO}$ | –5 | V |
| Collector current | $I_C$ | –3 | A |
| Collector power dissipation | $P_C$ | 0.9 | W |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

**Table 2 Electrical Characteristics** (Ta = 25°C)

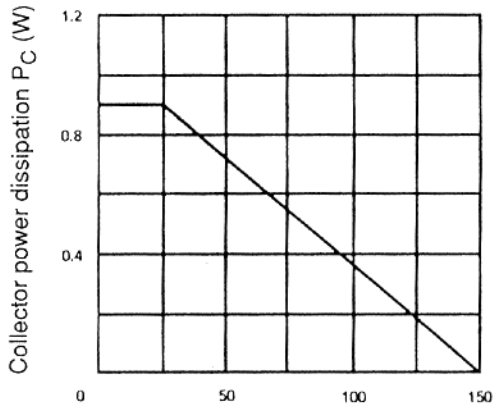
| Item | Symbol | Min | Typ | Max | Unit | Test condition |
|---|---|---|---|---|---|---|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | –30 | — | — | V | $I_C$ = –10 µA, $I_E$ = 0 |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | –25 | — | — | V | $I_C$ = –1 mA, $R_{BE}$ = ∞ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | –5 | — | — | V | $I_E$ = –10 µA, $I_C$ = 0 |
| Collector cutoff current | $I_{CBO}$ | — | — | –0.1 | µA | $V_{CB}$ = –24 V, $I_E$ = 0 |
| Emitter cutoff current | $I_{EBO}$ | — | — | –0.1 | µA | $V_{EB}$ = –4 V, $I_C$ = 0 |
| DC current transfer ratio | $h_{FE}1$* | 160 | — | 500 | — | $V_{CE}$ = –1 V, $I_C$ = –0.1 A |
| DC current transfer ratio | $h_{FE}2$ | 100 | — | — | — | $V_{CE}$ = –1 V, $I_C$ = –3 A |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | –0.15 | –0.22 | V | $I_C$ = –2 A, $I_B$ = –0.2 A |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | — | — | –1.2 | V | $I_C$ = –2 A, $I_B$ = –0.2 A |

* 2SB1505 is grouped by $h_{FE}1$ as follows.

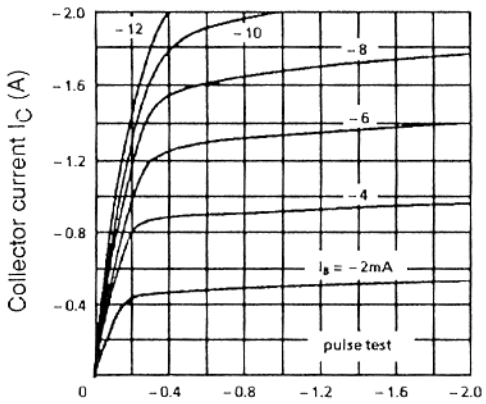
| Grade | D | E |
|---|---|---|
| $h_{FE}1$ | 160 to 320 | 250 to 500 |

## 2SB1505

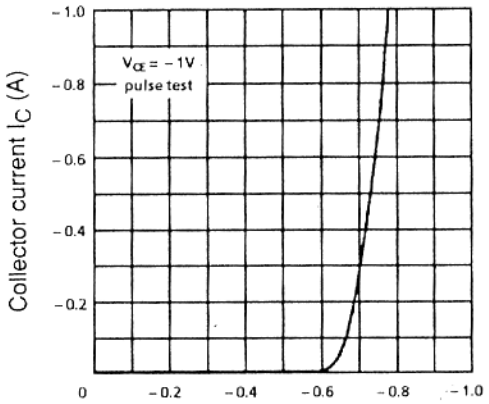
Maximum collector dissipation curve



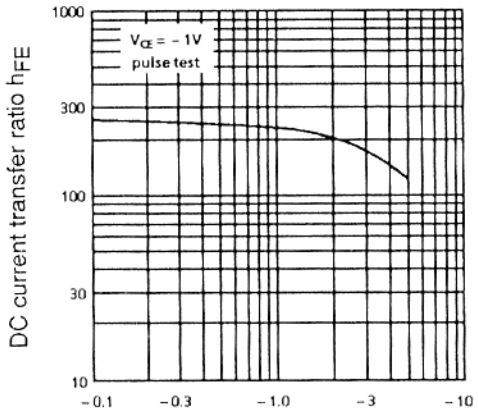

Typical output characteristics



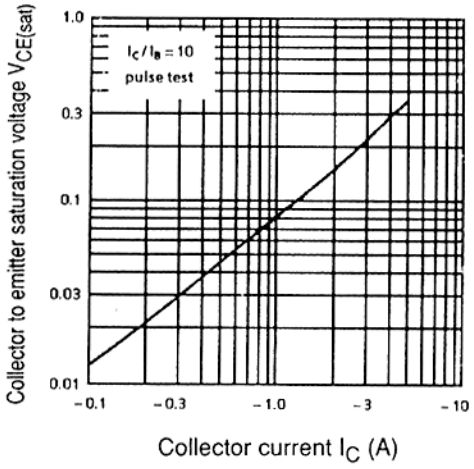

Typical transfer characteristics



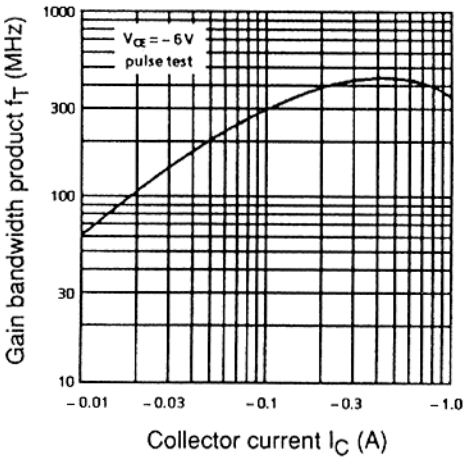

DC current transfer ratio vs. collector current



Collector to emitter saturation
vs. collector current




Gain bandwidth product
vs. collector current




Collector output capacitance
vs. collector to base voltage