# 2SB1052

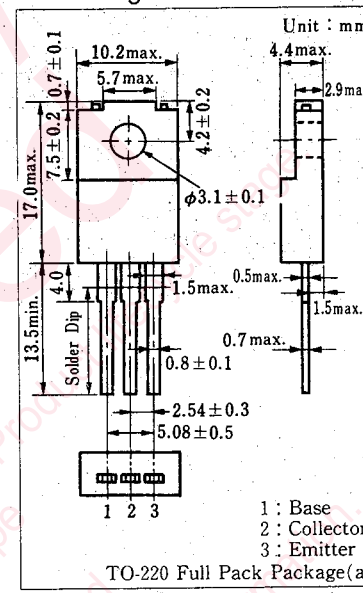
## Silicon PNP Triple-Diffused Planar Type

Power Amplifier
Complementary Pair with 2SD1480

### ■ Features

- High DC current gain ($h_{FE}$) and good linearity
- Low collector-eimitter saturation voltage ($V_{CE(sat)}$)
- "Full Pack" package for simplified mounting on a heat sink with one screw

### ■ Package Dimensions




### ■ Absolute Maximum Ratings (Tc=25°C)

| Item | | Symbol | Value | Unit |
|---|---|---|---|---|
| Collector-base voltage | | $V_{CBO}$ | −60 | V |
| Collector-emitter voltage | | $V_{CEO}$ | −60 | V |
| Emitter-base voltage | | $V_{EBO}$ | −6 | V |
| Peak collector current | | $I_{CP}$ | −4 | A |
| Collector current | | $I_C$ | −2 | A |
| Collector power dissipation | Tc=25℃ | $P_C$ | 25 | W |
| | Ta=25℃ | | 2.0 | |
| Junction temperature | | $T_j$ | 150 | ℃ |
| Storage temperature | | $T_{stg}$ | −55～+150 | ℃ |

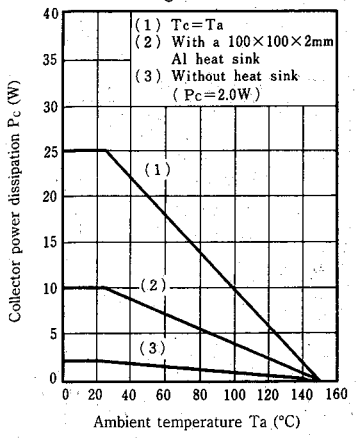
### ■ Electrical Characteristics (Tc=25°C)

| Item | Symbol | Condition | min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CES}$ | $V_{CE}$=−60 V, $V_{BE}$=0 | | | −200 | μA |
| | $I_{CEO}$ | $V_{CE}$=−30 V, $I_B$=0 | | | −300 | μA |
| Emitter cutoff current | $I_{EBO}$ | $V_{EB}$=−6 V, $I_C$=0 | | | −1 | mA |
| Collector-emitter voltage | $V_{CEO}$ | $I_C$=−30 mA, $I_C$=0 | −60 | | | V |
| DC current gain | $h_{FE1}$ | $V_{CE}$=−4 V, $I_C$=−0.1 A | 35 | | | |
| | $h_{FE2}$* | $V_{CE}$=−4 V, $I_C$=−1 A | 40 | | 250 | |
| Base-emitter voltage | $V_{BE}$ | $V_{CE}$=−4 V, $I_C$=−1 A | | | −1.2 | V |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=−2 A, $I_B$=−0.2 A | | | −2.0 | V |
| Transition frequency | $f_T$ | $V_{CE}$=−10V, $I_C$=−0.5A, f=10MHz | | 25 | | MHz |
| Turn-on time | $t_{on}$ | $I_C$=−1 A, $I_{B1}$=−0.1 A, $I_{B2}$=0.1 A | | 0.1 | | μs |
| Storage time | $t_{stg}$ | | | 1.5 | | μs |
| Collector current fall time | $t_f$ | | | 0.3 | | μs |

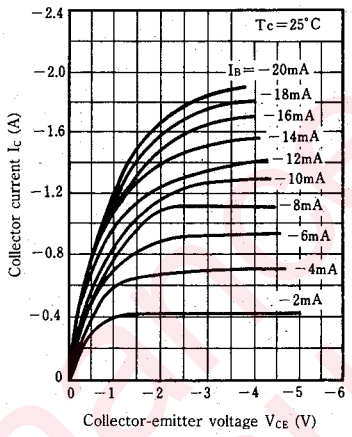
*$h_{FE2}$ Classifications

| Class | R | Q | P |
|---|---|---|---|
| $h_{FE2}$ | 40～90 | 70～150 | 120～250 |

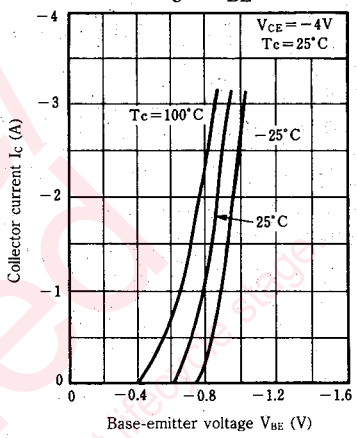
## $P_C - Ta$



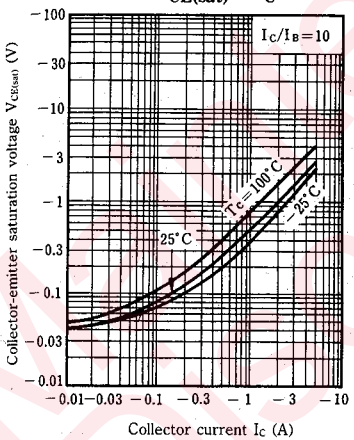

## $I_C - V_{CE}$



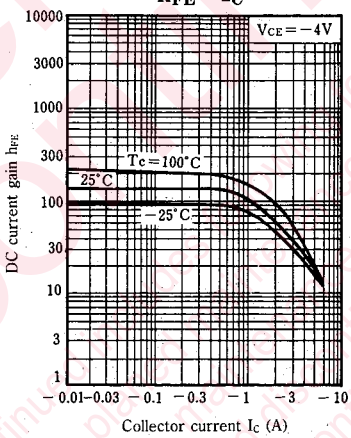

## $I_C - V_{BE}$



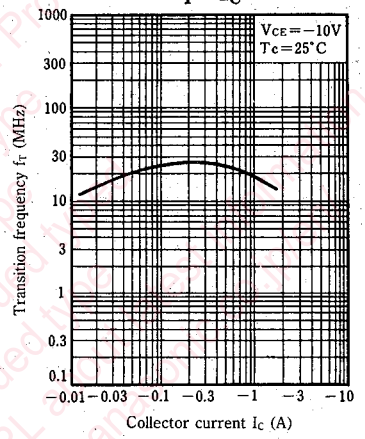

## $V_{CE(sat)} - I_C$



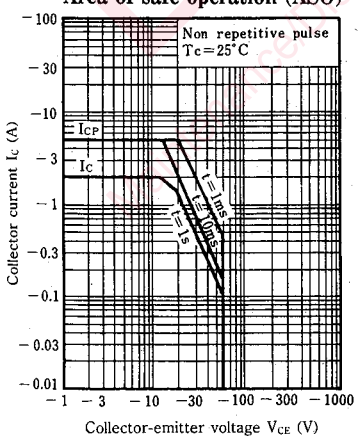

## $h_{FE} - I_C$



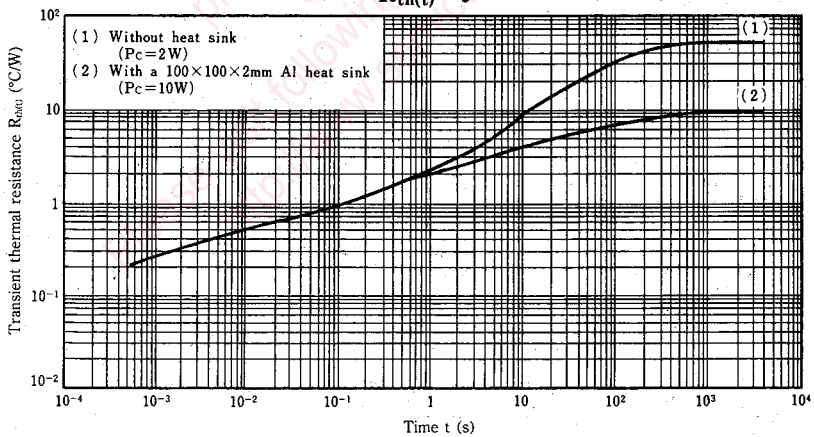

## $f_T - I_C$




## Area of safe operation (ASO)




## $R_{th(t)} - t$



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