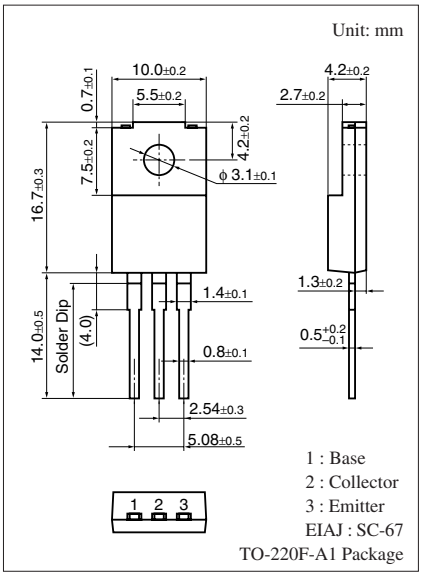
# 2SA1535, 2SA1535A

## Silicon PNP epitaxial planar type

For low-frequency driver and high power amplification
Complementary to 2SC3944, 2SC3944A




### ■ Features

- Excellent collector current $I_C$ characteristics of forward current transfer ratio $h_{FE}$
- High transition frequency $f_T$
- A complementary pair with 2SC3944 and 2SC3944A, is optimum for the driver-stage of a 60 W to 100 W output amplifier

### ■ Absolute Maximum Ratings $T_a = 25°C$

| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Collector-base voltage (Emitter open) | 2SA1535 | $V_{CBO}$ | −150 | V |
| | 2SA1535A | | −180 | |
| Collector-emitter voltage (Base open) | 2SA1535 | $V_{CEO}$ | −150 | V |
| | 2SA1535A | | −180 | |
| Emitter-base voltage (Collector open) | | $V_{EBO}$ | −5 | V |
| Collector current | | $I_C$ | −1 | A |
| Peak collector current | | $I_{CP}$ | −1.5 | A |
| Collector power dissipation | $T_C = 25°C$ | $P_C$ | 15 | W |
| | | | 2 | |
| Junction temperature | | $T_j$ | 150 | °C |
| Storage temperature | | $T_{stg}$ | −55 to +150 | °C |

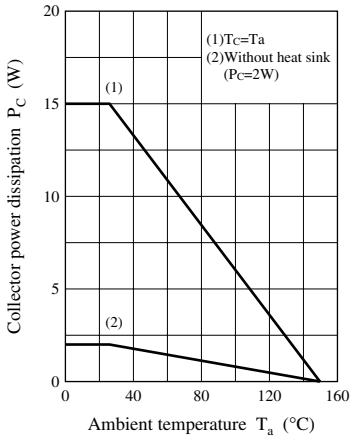
### ■ Electrical Characteristics $T_a = 25°C \pm 3°C$

| Parameter | | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Collector-emitter voltage (Base open) | 2SA1535 | $V_{CEO}$ | $I_C = -100$ μA, $I_B = 0$ | −150 | | | V |
| | 2SA1535A | | $I_C = -100$ μA, $I_B = 0$ | −180 | | | |
| Emitter-base voltage (Collector open) | | $V_{EBO}$ | $I_E = -10$ μA, $I_C = 0$ | −5 | | | V |
| Collector-base cutoff current (Emitter open) | 2SA1535 | $I_{CBO}$ | $V_{CB} = -150$ V, $I_E = 0$ | | | −10 | μA |
| Forward current transfer ratio | | $h_{FE1}$ * | $V_{CE} = -10$ V, $I_C = -150$ mA | 65 | 160 | 330 | — |
| | | $h_{FE2}$ | $V_{CE} = -5$ V, $I_C = -500$ mA | 50 | 100 | | |
| Collector-emitter saturation voltage | | $V_{CE(sat)}$ | $I_C = -500$ mA, $I_B = -50$ mA | | − 0.5 | −2.0 | V |
| Base-emitter saturation voltage | | $V_{BE(sat)}$ | $I_C = -500$ mA, $I_B = -50$ mA | | −1.0 | −2.0 | V |
| Transition frequency | | $f_T$ | $V_{CE} = -10$ V, $I_C = -50$ mA, f = 10 MHz | | 200 | | MHz |
| Collector output capacitance (Common base, input open circuited) | | $C_{ob}$ | $V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz | | 30 | 50 | pF |

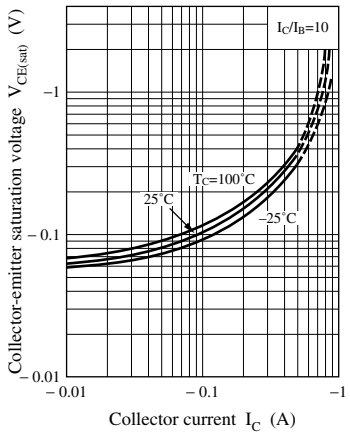
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

| Rank | P | Q | R | S |
|---|---|---|---|---|
| $h_{FE1}$ | 65 to 110 | 90 to 155 | 130 to 220 | 185 to 330 |

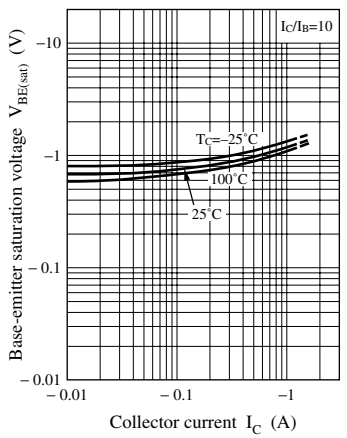
$P_C$ — $T_a$



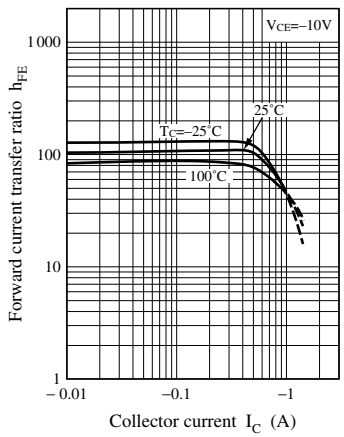

$V_{CE(sat)}$ — $I_C$



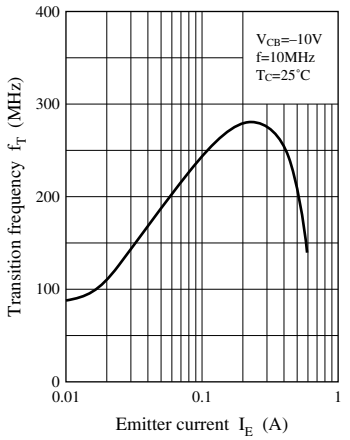

$V_{BE(sat)}$ — $I_C$



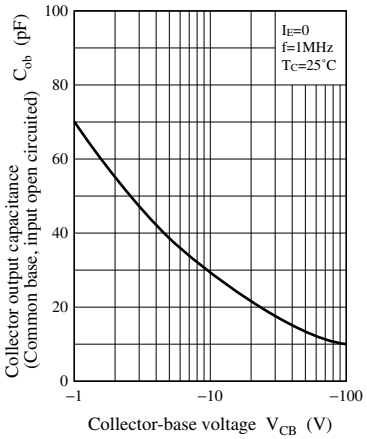

$h_{FE}$ — $I_C$



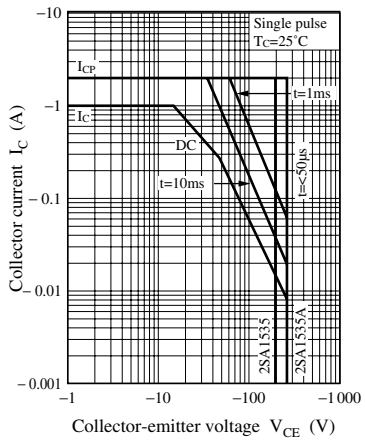

$f_T$ — $I_E$




$C_{ob}$ — $V_{CB}$




Safe operation area



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