

# 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 $T_a = 25^\circ\text{C}$

| Parameter                                | Symbol                   | Rating      | Unit             |
|--|--------------------------|-------------|------------------|
| Collector-base voltage<br>(Emitter open) | 2SA1535                  | -150        | V                |
|  | 2SA1535A                 | -180        |                  |
| Collector-emitter voltage<br>(Base open) | 2SA1535                  | -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              | $T_C = 25^\circ\text{C}$ | $P_C$       | 15               |
|  |                          |             | 2                |
| Junction temperature                     | $T_j$                    | 150         | $^\circ\text{C}$ |
| Storage temperature                      | $T_{stg}$                | -55 to +150 | $^\circ\text{C}$ |

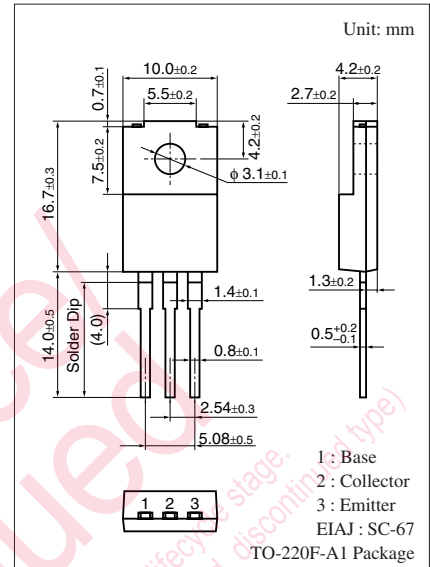
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

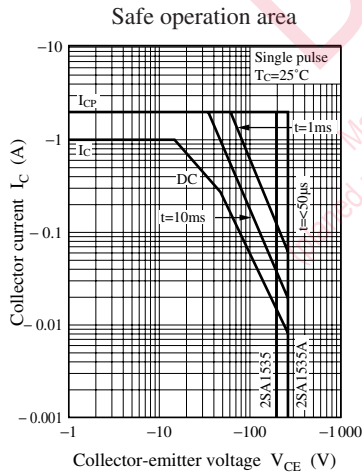
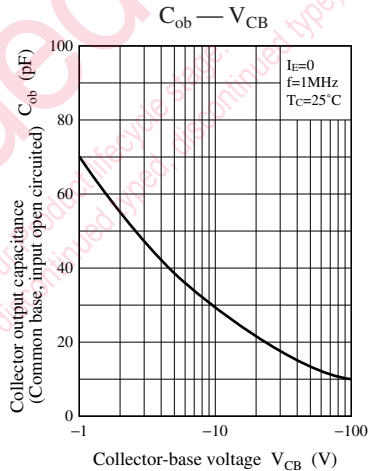
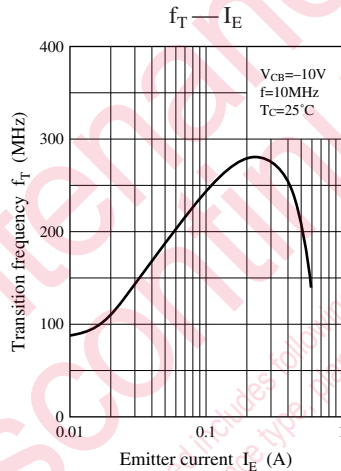
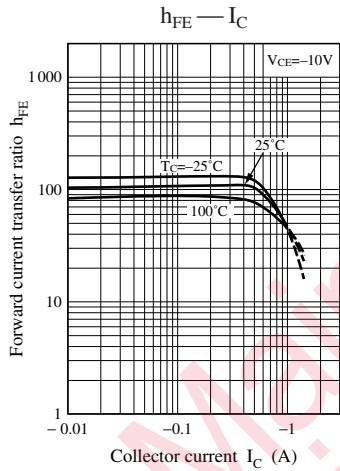
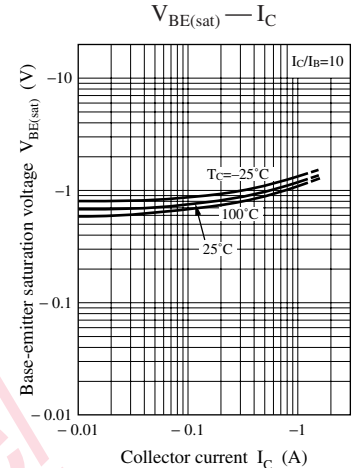
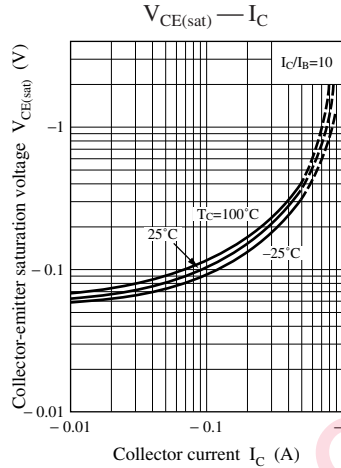
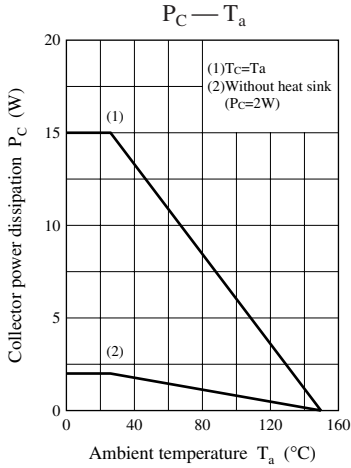
| Parameter   | Symbol        | Conditions   | Min  | Typ  | Max  | Unit          |
|---|---------------|--|------|------|------|---------------|
| Collector-emitter voltage<br>(Base open)                            | 2SA1535       | $I_C = -100 \mu\text{A}, I_B = 0$                                 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





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