

# 2SA0683 (2SA683), 2SA0684 (2SA684)

## Silicon PNP epitaxial planar type

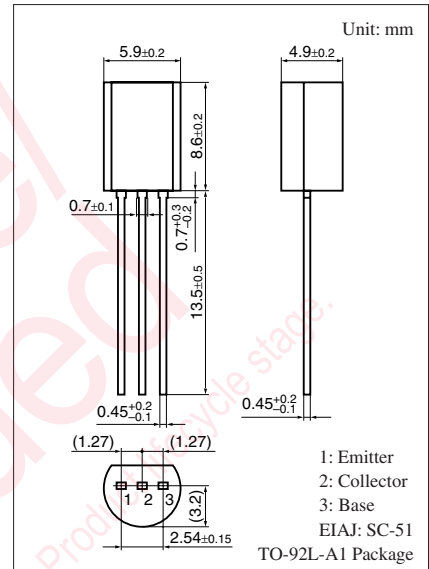
For low-frequency power amplification and driver amplification  
Complementary to 2SC1383, 2SC1384

### ■ Features

- Allowing supply with the radial tapping

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                                | Symbol    | Rating      | Unit             |   |
|--|-----------|-------------|------------------|---|
| Collector-base voltage<br>(Emitter open) | 2SA0683   | $V_{CBO}$   | -30              | V |
|  | 2SA0684   |             | -60              |   |
| Collector-emitter voltage<br>(Base open) | 2SA0683   | $V_{CEO}$   | -25              | V |
|  | 2SA0684   |             | -50              |   |
| 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              | $P_C$     | 1           | W                |   |
| 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-base voltage<br>(Emitter open)                            | 2SA0683       | $V_{CBO}$  | $I_C = -10 \mu\text{A}, I_E = 0$ | -30   |       | V             |
|   | 2SA0684       |  |                                  | -60   |       |               |
| Collector-emitter voltage<br>(Base open)                            | 2SA0683       | $V_{CEO}$  | $I_C = -2 \text{ mA}, I_B = 0$   | -25   |       | V             |
|   | 2SA0684       |  |                                  | -50   |       |               |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$     | $I_E = -10 \mu\text{A}, I_C = 0$                                   | -5                               |       |       | V             |
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$     | $V_{CB} = -20 \text{ V}, I_E = 0$                                  |                                  |       | -0.1  | $\mu\text{A}$ |
| Forward current transfer ratio *1                                   | $h_{FE1}$ *2  | $V_{CE} = -10 \text{ V}, I_C = -500 \text{ mA}$                    | 85                               |       | 340   | —             |
|   | $h_{FE2}$     | $V_{CE} = -5 \text{ V}, I_C = -1 \text{ A}$                        | 50                               |       |       |               |
| Collector-emitter saturation voltage                                | $V_{CE(sat)}$ | $I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$                      |                                  | -0.2  | -0.4  | V             |
| Base-emitter saturation voltage                                     | $V_{BE(sat)}$ | $I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$                      |                                  | -0.85 | -1.20 | V             |
| Transition frequency  | $f_T$         | $V_{CB} = -10 \text{ V}, I_E = 50 \text{ mA}, f = 200 \text{ MHz}$ |                                  | 200   |       | MHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$      | $V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$               |                                  | 20    | 30    | pF            |

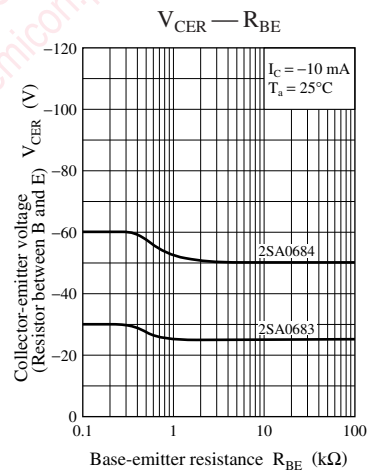
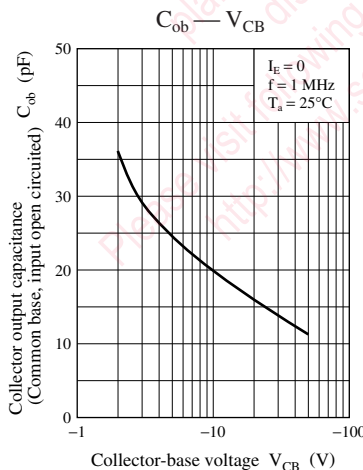
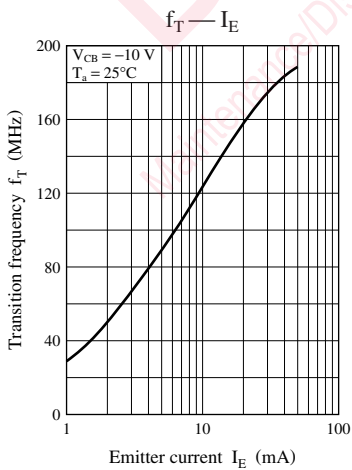
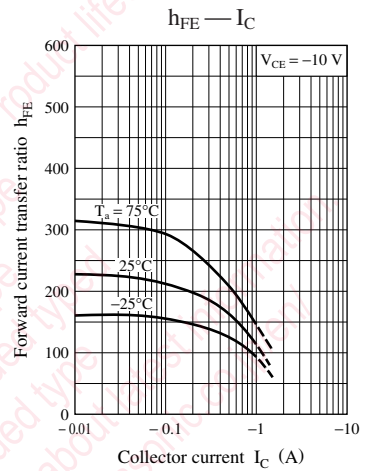
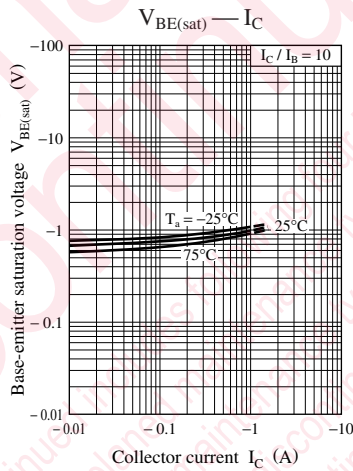
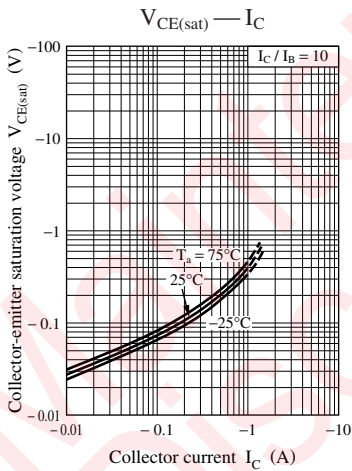
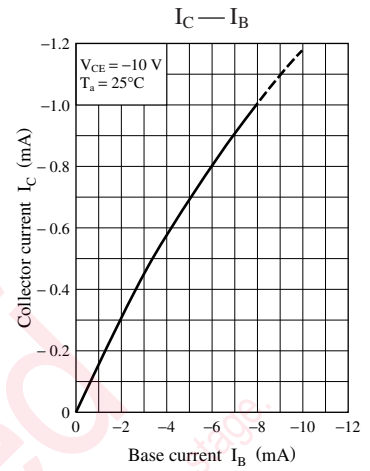
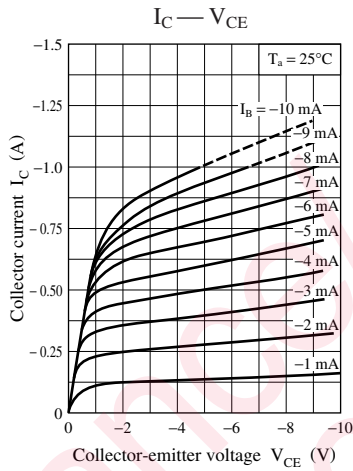
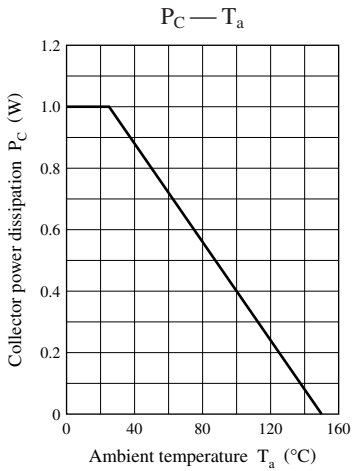
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

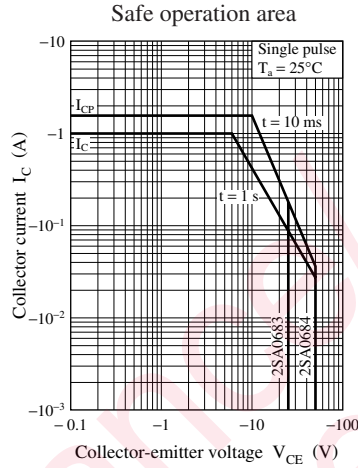
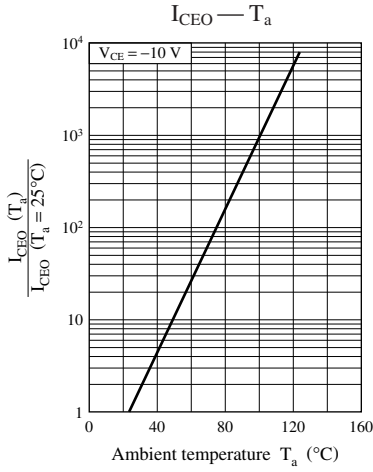
2. \*1: Pulse measurement

\*2: Rank classification

| Rank     | Q         | R          | S          |
|----------|-----------|------------|------------|
| $h_{FE}$ | 85 to 170 | 120 to 240 | 170 to 340 |

Note) The part numbers in the parenthesis show conventional part number.





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 maintenance type  
 planned discontinued type  
 discontinued type  
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