

# 2SA1748

## Silicon PNP epitaxial planer type

For high-frequency amplification

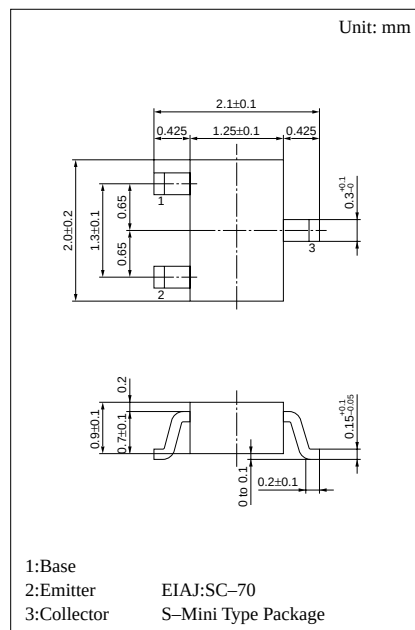
Complementary to 2SC4562

### Features

- High transition frequency  $f_T$ .
- Small collector output capacitance  $C_{ob}$ .
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

### Absolute Maximum Ratings (Ta=25°C)

| Parameter                    | Symbol    | Ratings    | Unit |
|------------------------------|-----------|------------|------|
| Collector to base voltage    | $V_{CBO}$ | -50        | V    |
| Collector to emitter voltage | $V_{CEO}$ | -50        | V    |
| Emitter to base voltage      | $V_{EBO}$ | -5         | V    |
| Collector current            | $I_C$     | -50        | mA   |
| Collector power dissipation  | $P_C$     | 150        | mW   |
| Junction temperature         | $T_j$     | 150        | °C   |
| Storage temperature          | $T_{stg}$ | -55 ~ +150 | °C   |



Marking symbol : AL

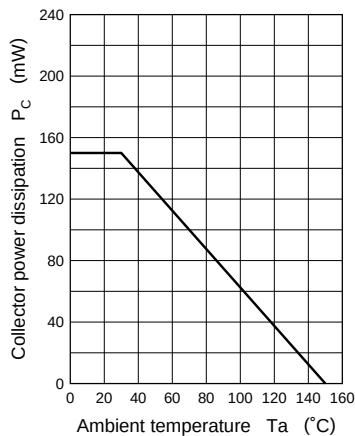
### Electrical Characteristics (Ta=25°C)

| Parameter                               | Symbol        | Conditions                             | min | typ   | max   | Unit    |
|-----------------------------------------|---------------|----------------------------------------|-----|-------|-------|---------|
| Collector cutoff current                | $I_{CBO}$     | $V_{CB} = -10V, I_E = 0$               |     |       | - 0.1 | $\mu A$ |
|                                         | $I_{CEO}$     | $V_{CE} = -10V, I_B = 0$               |     |       | -100  | $\mu A$ |
| Collector to base voltage               | $V_{CBO}$     | $I_C = -10\mu A, I_E = 0$              | -50 |       |       | V       |
| Collector to emitter voltage            | $V_{CEO}$     | $I_C = -1mA, I_B = 0$                  | -50 |       |       | V       |
| Emitter to base voltage                 | $V_{EBO}$     | $I_E = -10\mu A, I_C = 0$              | -5  |       |       | V       |
| Forward current transfer ratio          | $h_{FE}$      | $V_{CE} = -10V, I_C = -2mA$            | 200 |       | 500   |         |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -10mA, I_B = -1mA$              |     | - 0.1 | - 0.3 | V       |
| Transition frequency                    | $f_T$         | $V_{CB} = -10V, I_E = 2mA, f = 200MHz$ |     | 250   |       | MHz     |
| Collector output capacitance            | $C_{ob}$      | $V_{CB} = -10V, I_E = 0, f = 1MHz$     |     | 1.5   |       | pF      |

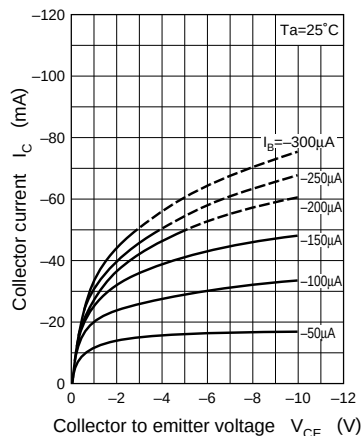
\* $h_{FE}$  Rank classification

| Rank           | Q         | R         |
|----------------|-----------|-----------|
| $h_{FE}$       | 200 ~ 400 | 250 ~ 500 |
| Marking Symbol | ALQ       | ALR       |

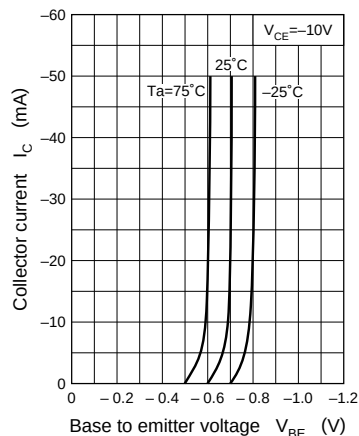
$P_C - T_a$



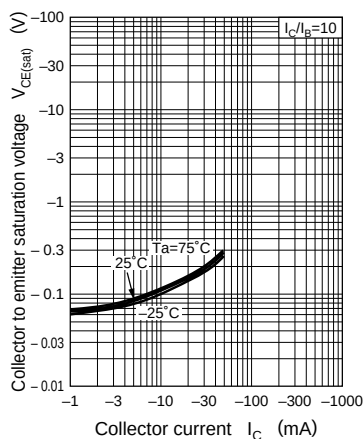
$I_C - V_{CE}$



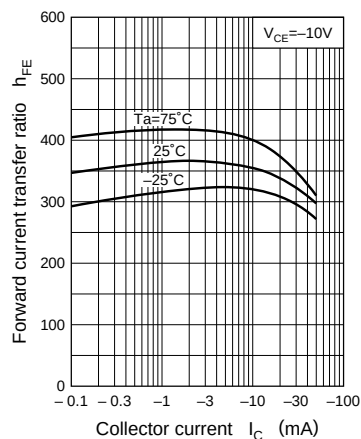
$I_C - V_{BE}$



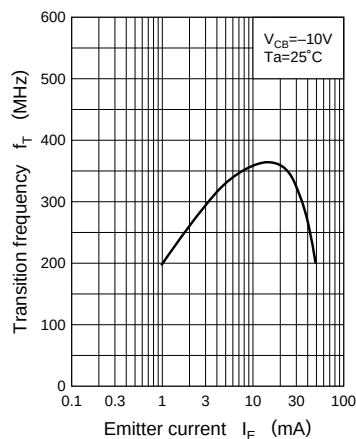
$V_{CE(\text{sat})} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

