

# 2SA1512

## Silicon PNP epitaxial planer type

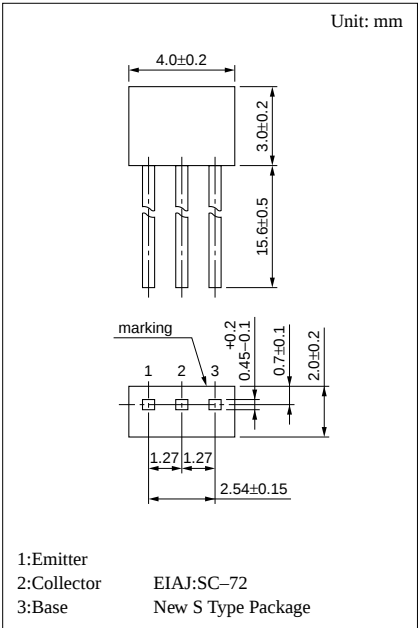
For low-frequency output amplification  
Complementary to 2SC1788

### Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$ .
- Optimum for low-voltage operation and for converters.
- Allowing supply with the radial taping.
- Optimum for high-density mounting.

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

| Parameter                    | Symbol    | Ratings    | Unit |
|------------------------------|-----------|------------|------|
| Collector to base voltage    | $V_{CBO}$ | -25        | V    |
| Collector to emitter voltage | $V_{CEO}$ | -20        | V    |
| Emitter to base voltage      | $V_{EBO}$ | -7         | V    |
| Peak collector current       | $I_{CP}$  | -1         | A    |
| Collector current            | $I_C$     | -0.5       | A    |
| Collector power dissipation  | $P_C$     | 300        | mW   |
| Junction temperature         | $T_j$     | 150        | °C   |
| Storage temperature          | $T_{stg}$ | -55 ~ +150 | °C   |



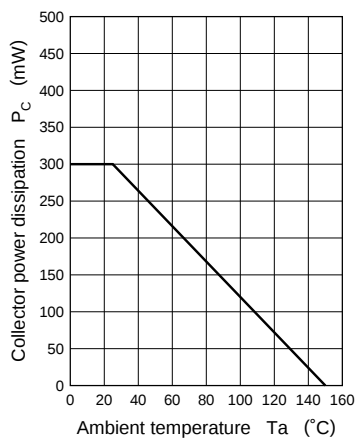
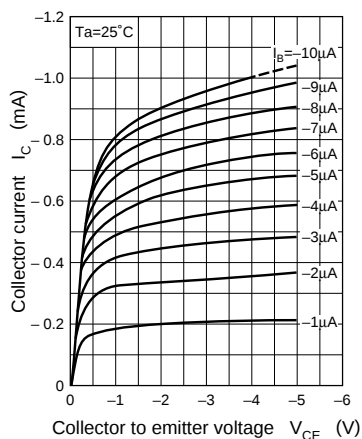
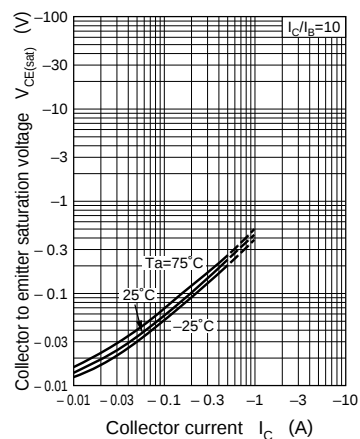
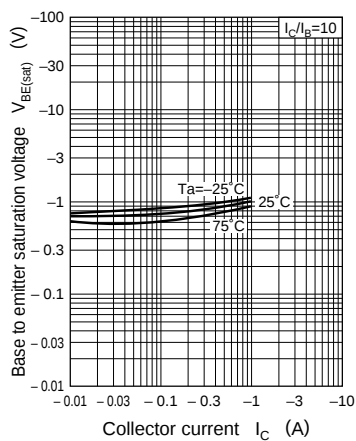
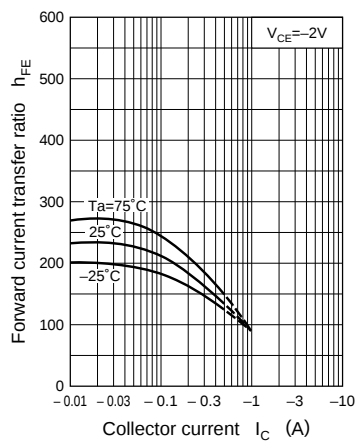
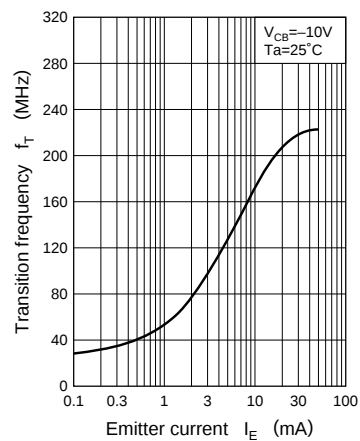
### Electrical Characteristics (Ta=25°C)

| Parameter                               | Symbol         | Conditions                              | min | typ | max  | Unit |
|-----------------------------------------|----------------|-----------------------------------------|-----|-----|------|------|
| Collector cutoff current                | $I_{CBO}$      | $V_{CB} = -25V, I_E = 0$                |     |     | -100 | nA   |
|                                         | $I_{CEO}$      | $V_{CE} = -20V, I_B = 0$                |     |     | -1   | μA   |
| Collector to base voltage               | $V_{CBO}$      | $I_C = -10\mu A, I_E = 0$               | -25 |     |      | V    |
| Collector to emitter voltage            | $V_{CEO}$      | $I_C = -1mA, I_B = 0$                   | -20 |     |      | V    |
| Emitter to base voltage                 | $V_{EBO}$      | $I_E = -10\mu A, I_C = 0$               | -7  |     |      | V    |
| Forward current transfer ratio          | $h_{FE1}^{*1}$ | $V_{CE} = -2V, I_C = -0.5A^{*2}$        | 90  |     | 220  |      |
|                                         | $h_{FE2}$      | $V_{CE} = -2V, I_C = -1A^{*2}$          | 25  |     |      |      |
| Collector to emitter saturation voltage | $V_{CE(sat)}$  | $I_C = -500mA, I_B = -50mA^{*2}$        |     |     | -0.4 | V    |
| Base to emitter saturation voltage      | $V_{BE(sat)}$  | $I_C = -500mA, I_B = -50mA^{*2}$        |     |     | -1.2 | V    |
| Transition frequency                    | $f_T$          | $V_{CB} = -10V, I_E = 50mA, f = 200MHz$ |     | 150 |      | MHz  |
| Collector output capacitance            | $C_{ob}$       | $V_{CB} = -10V, I_E = 0, f = 1MHz$      |     | 15  | 25   | pF   |

\*2 Pulse measurement

\*1  $h_{FE1}$  Rank classification

| Rank      | Q        | R         |
|-----------|----------|-----------|
| $h_{FE1}$ | 90 ~ 155 | 130 ~ 220 |

$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 