**Panasonic**

# 2SA2010

## Silicon PNP epitaxial planer type

For DC-DC converter

For various driver circuits

### ■ Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$, large current capacitance
- High-speed switching
- Mini type 3-pin package, allowing downsizing and thinning of the equipment.
- Complementary pair with 2SC5592

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

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | −15 | V |
| Collector to emitter voltage | $V_{CEO}$ | −15 | V |
| Emitter to base voltage | $V_{EBO}$ | −5 | V |
| Peak collector current | $I_{CP}$ | −10 | A |
| Collector current | $I_C$ | −2.5 | A |
| Collector power dissipation * | $P_C$ | 600 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |
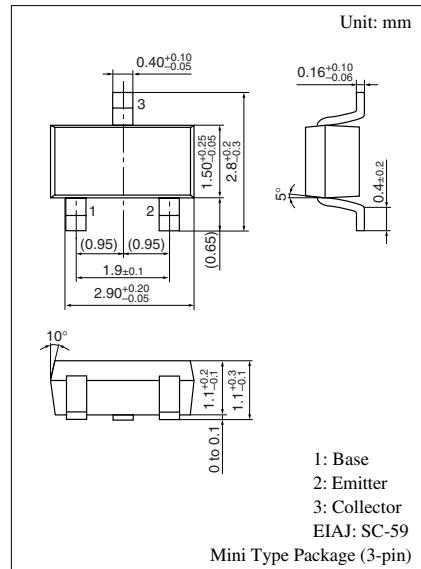
Note) *: Measure on the ceramic substrate at $15 \times 15 \times 0.6$ mm³.

Unit: mm

1: Base
2: Emitter
3: Collector
EIAJ: SC-59
Mini Type Package (3-pin)

Marking Symbol: AS

### ■ Electrical Characteristics $T_a = 25°C \pm 3°C$
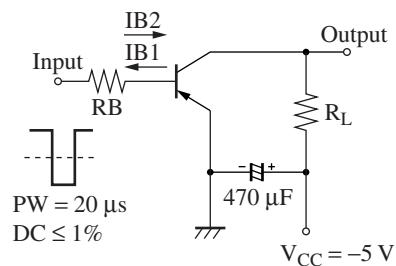
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CBO}$ | $V_{CB} = -10$ V, $I_E = 0$ | | | − 0.1 | μA |
| Collector to base voltage | $V_{CBO}$ | $I_C = -10$ μA, $I_E = 0$ | −15 | | | V |
| Collector to emitter voltage | $V_{CEO}$ | $I_C = -1$ mA, $I_B = 0$ | −15 | | | V |
| Emitter to base voltage | $V_{EBO}$ | $I_E = -10$ μA, $I_C = 0$ | −5 | | | V |
| Forward current transfer ratio *1 | $h_{FE1}$ | $V_{CE} = -2$ V, $I_C = -100$ mA | 200 | | 560 | |
| | $h_{FE2}$ | $V_{CE} = -2$ V, $I_C = -2.5$ A | 100 | | | |
| Collector to emitter saturation voltage *1 | $V_{CE(sat)}$ | $I_C = -1$ A, $I_B = -10$ mA | | −140 | | mV |
| | | $I_C = -2.5$ A, $I_B = -50$ mA | | −270 | −320 | mV |
| Collector output capacitance | $C_{ob}$ | $V_{CB} = 10$ V, $I_E = 0$, f = 1 MHz | | 40 | | pF |
| Transition frequency | $f_T$ | $V_{CB} = -10$ V, $I_E = 50$ mA f = 200 MHz | | 180 | | MHz |
| Turn-on time *2 | $t_{on}$ | | | 35 | | ns |
| Storage time *2 | $t_{stg}$ | | | 110 | | ns |
| Turn-off time *2 | $t_{off}$ | | | 10 | | ns |

Note) *1: Rank classification

*2: Reference to the measurement circuit.

■ Measurement Circuit



PW = 20 μs
DC ≤ 1%

$-201B1 = 201B2 = IC = -1.5$ A