

2SB0948 (2SB948), 2SB0948A (2SB948A)

Silicon PNP epitaxial planar type

For low-voltage switching

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- High-speed switching
- Full-pack package which can be installed to the heat sink with one screw

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

| Parameter | Symbol | Rating | Unit |
|--|-----------|--------------------------|------------------|
| Collector-base voltage (Emitter open) | 2SB0948 | -40 | V |
| | 2SB0948A | -50 | |
| Collector-emitter voltage (Base open) | 2SB0948 | -20 | V |
| | 2SB0948A | -40 | |
| Emitter-base voltage (Collector open) | V_{EBO} | -5 | V |
| Collector current | I_C | -10 | A |
| Peak collector current | I_{CP} | -20 | A |
| Collector power dissipation | P_C | 40 | W |
| | | $T_a = 25^\circ\text{C}$ | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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

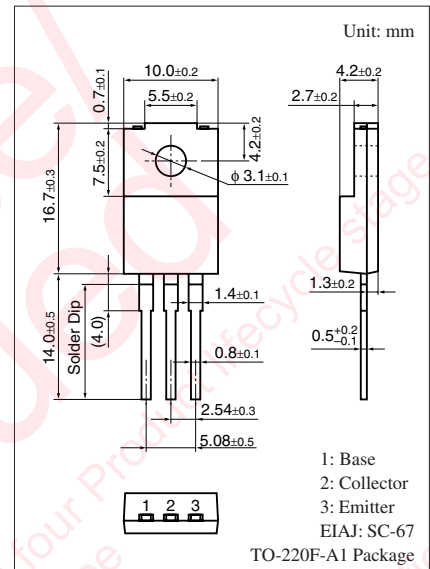
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit | |
|---|---------------|---|-----|-----|------|---------------|---------------|
| Collector-emitter voltage (Base open) | 2SB0948 | $I_C = -10\text{ mA}, I_B = 0$ | -20 | | | V | |
| | 2SB0948A | | -40 | | | | |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = -40\text{ V}, I_E = 0$ | | | -50 | μA | |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = -5\text{ V}, I_C = 0$ | | | -50 | μA | |
| Forward current transfer ratio | h_{FE1} | $V_{CE} = -2\text{ V}, I_C = -0.1\text{ A}$ | 45 | | | — | |
| | h_{FE2}^* | $V_{CE} = -2\text{ V}, I_C = -3\text{ A}$ | 60 | | 260 | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -10\text{ A}, I_B = -0.33\text{ A}$ | | | -0.6 | V | |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = -10\text{ A}, I_B = -0.33\text{ A}$ | | | -1.5 | V | |
| Transition frequency | f_T | $V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$ | | 100 | | MHz | |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | | 400 | | pF | |
| Turn-on time | t_{on} | $I_C = -3\text{ A}, I_{B1} = -0.1\text{ A}, I_{B2} = 0.1\text{ A}$ $V_{CC} = -20\text{ V}$ | | 0.1 | | μs | |
| Storage time | t_{stg} | | | | 0.5 | | μs |
| Fall time | t_f | | | | 0.1 | | μs |

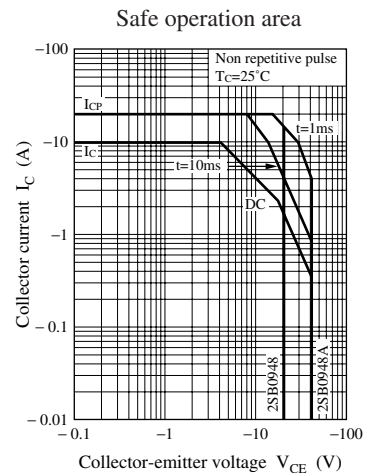
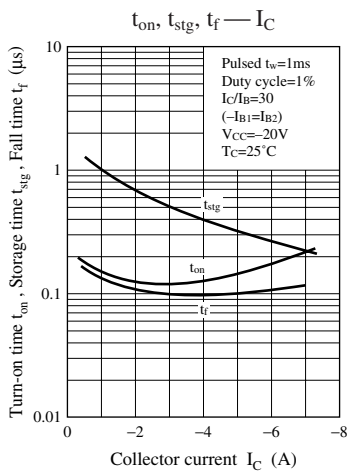
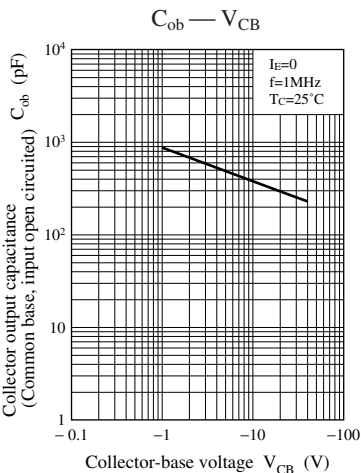
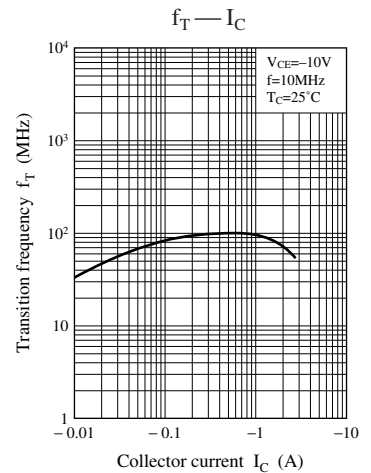
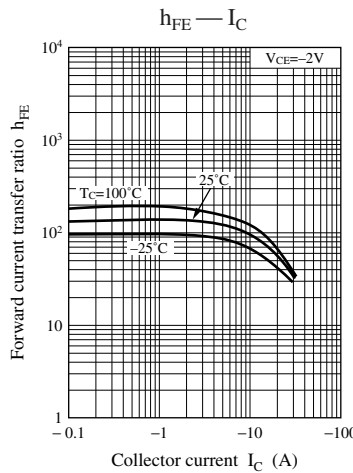
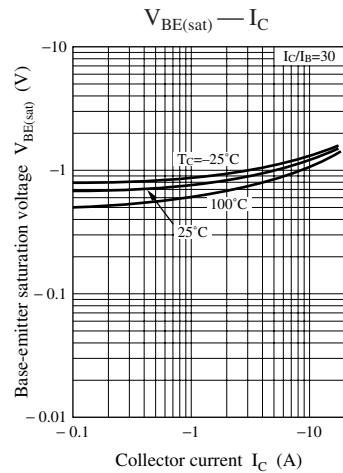
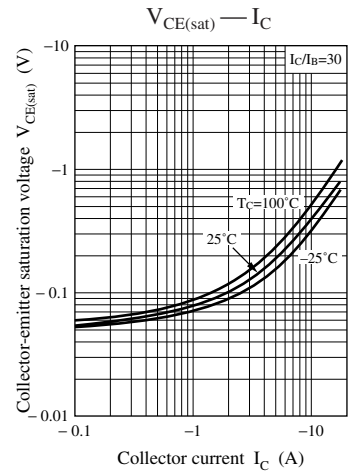
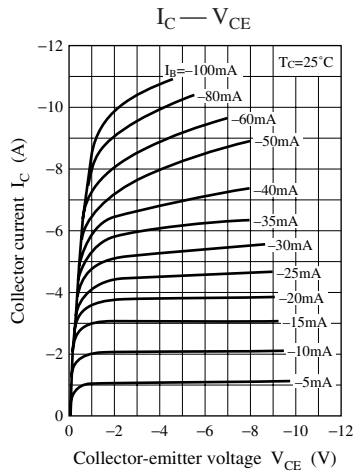
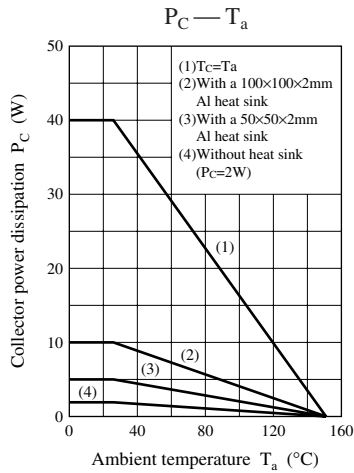
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

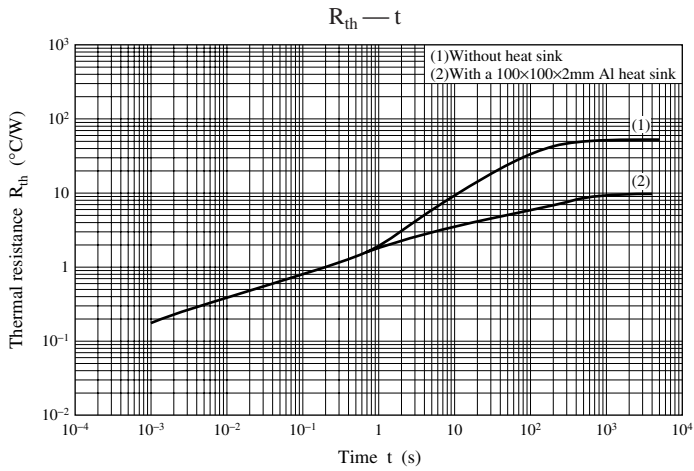
2. *: Rank classification

| Rank | R | Q | P |
|-----------|-----------|-----------|------------|
| h_{FE2} | 60 to 120 | 90 to 180 | 130 to 260 |

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







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