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2SB0942 (2SB942), 2SB0942A (2SB942A)

Silicon PNP epitaxial planar type

For low-frequency power amplification

Complementary to 2SD1267, 2SD1267A

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Large collector-emitter saturation voltage $V_{CE(sat)}$
- 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) | 2SB0942 | -60 | V |
| | 2SB0942A | -80 | |
| Collector-emitter voltage (Base open) | 2SB0942 | -60 | V |
| | 2SB0942A | -80 | |
| Emitter-base voltage (Collector open) | V_{EBO} | -5 | V |
| Collector current | I_C | -4 | A |
| Peak collector current | I_{CP} | -8 | A |
| Collector power dissipation | $T_a = 25^\circ\text{C}$ | P_C | 40 |
| | | | 2 |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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

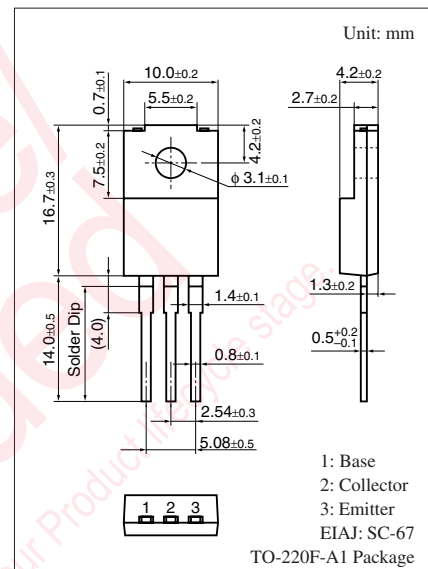
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit | |
|---|---------------|---|--------------------------------------|-----|------|---------------|---------------|
| Collector-emitter voltage (Base open) | 2SB0942 | $I_C = -30 \text{ mA}, I_B = 0$ | -60 | | | V | |
| | 2SB0942A | | -80 | | | | |
| Base-emitter voltage | V_{BE} | $V_{CE} = -4 \text{ V}, I_C = -3 \text{ A}$ | | | -2 | V | |
| Collector-emitter cutoff current (E-B short) | 2SB0942 | $V_{CE} = -60 \text{ V}, V_{BE} = 0$ | | | -400 | μA | |
| | 2SB0942A | | $V_{CE} = -80 \text{ V}, V_{BE} = 0$ | | | -400 | |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = -30 \text{ V}, I_B = 0$ | | | -700 | μA | |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = -5 \text{ V}, I_C = 0$ | | | -1 | mA | |
| Forward current transfer ratio | h_{FE1}^* | $V_{CE} = -4 \text{ V}, I_C = -1 \text{ A}$ | 40 | | 250 | — | |
| | h_{FE2} | $V_{CE} = -4 \text{ V}, I_C = -3 \text{ A}$ | 15 | | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -4 \text{ A}, I_B = -0.4 \text{ A}$ | | | -1.5 | V | |
| Transition frequency | f_T | $V_{CE} = -10 \text{ V}, I_C = -0.1 \text{ A}, f = 10 \text{ MHz}$ | | 30 | | MHz | |
| Turn-on time | t_{on} | $I_C = -4 \text{ A}, I_{B1} = -0.4 \text{ A}, I_{B2} = 0.4 \text{ A}$ $V_{CC} = -50 \text{ V}$ | | 0.2 | | μs | |
| Storage time | t_{stg} | | | | 0.5 | | μs |
| Fall time | t_f | | | | 0.2 | | μs |

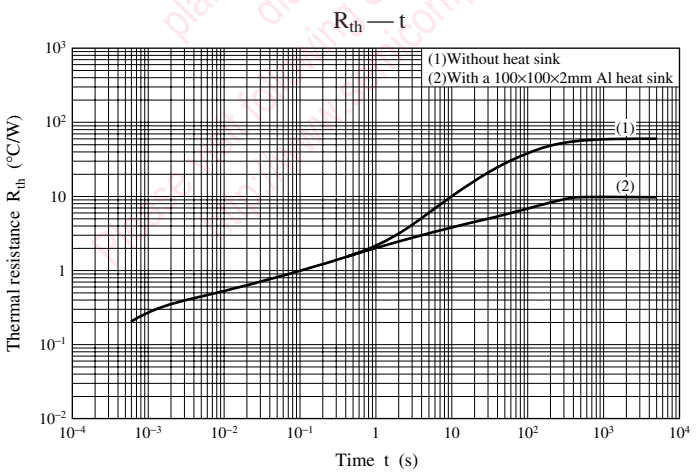
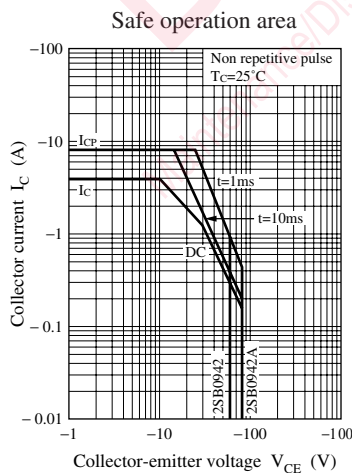
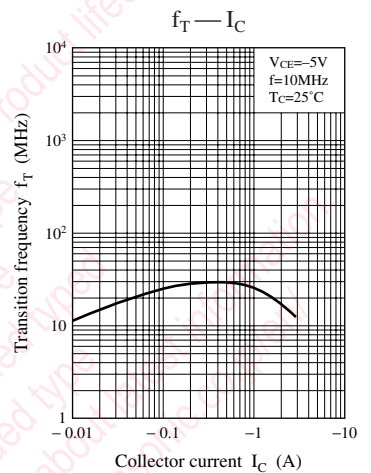
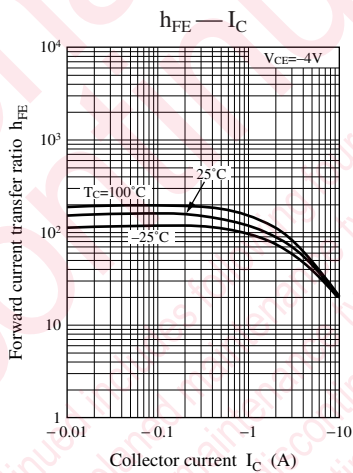
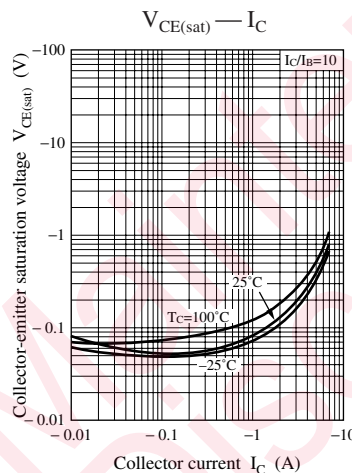
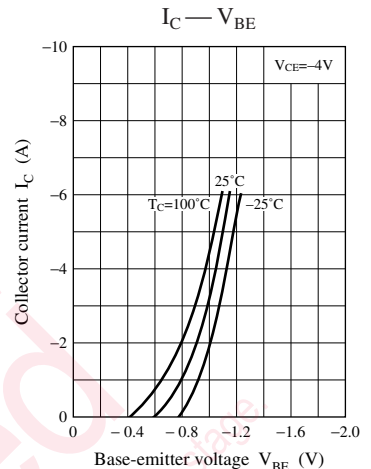
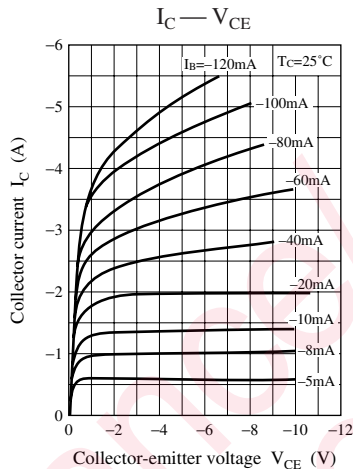
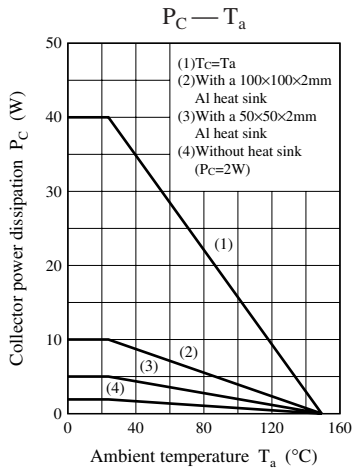
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

| Rank | R | Q | P |
|-----------|----------|-----------|------------|
| h_{FE1} | 40 to 90 | 70 to 150 | 120 to 250 |

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





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