

DSC7004

Silicon NPN epitaxial planar type

For low frequency amplification
Complementary to DSA7004

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

■ Marking Symbol: 5B

■ Packaging

DSC7004×0L Embossed type (Thermo-compression sealing): 1 000 pcs / reel (standard)

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

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 60 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 50 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | 5 | V |
| Collector current | I_C | 2 | A |
| Peak collector current | I_{CP} | 3 | A |
| Collector power dissipation | P_C | 1 | W |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Operating ambient temperature | T_{opr} | -40 to +85 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

Note) Printed circuit board: Copper foil area of 1 cm² or more, and the board thickness of 1.7 mm for the collector portion
Absolute maximum rating without heat sink for P_C is 0.5 W

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

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|------|-----|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = 10 \mu\text{A}, I_E = 0$ | 60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 1 \text{ mA}, I_B = 0$ | 50 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = 10 \mu\text{A}, I_C = 0$ | 5 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 20 \text{ V}, I_E = 0$ | | | 0.1 | μA |
| Forward current transfer ratio *1 | h_{FE1} *2 | $V_{CE} = 2 \text{ V}, I_C = 200 \text{ mA}$ | 120 | | 340 | — |
| | h_{FE2} | $V_{CE} = 2 \text{ V}, I_C = 1 \text{ A}$ | 80 | | | |
| Collector-emitter saturation voltage *1 | $V_{CE(sat)}$ | $I_C = 1 \text{ A}, I_B = 50 \text{ mA}$ | | 0.15 | 0.3 | V |
| Base-emitter saturation voltage *1 | $V_{BE(sat)}$ | $I_C = 1 \text{ A}, I_B = 50 \text{ mA}$ | | 0.9 | 1.2 | V |
| Transition frequency | f_T | $V_{CE} = 10 \text{ V}, I_C = 50 \text{ mA}$ | | 120 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ | | 22 | 35 | pF |

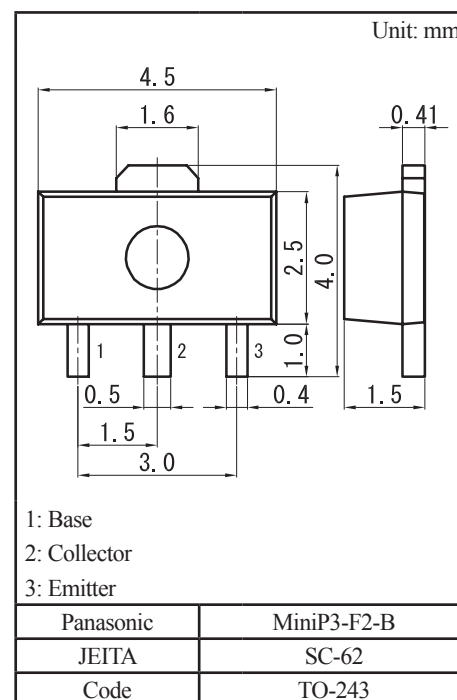
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

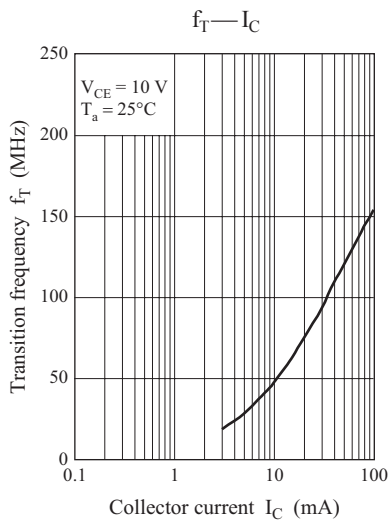
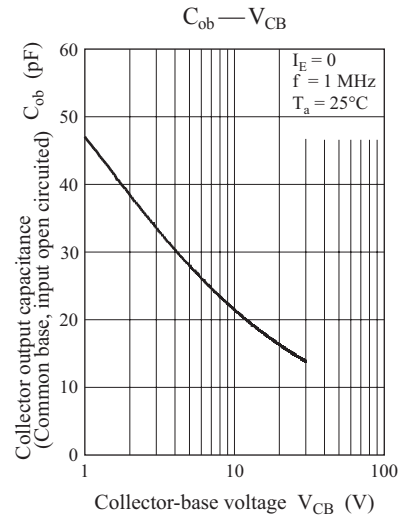
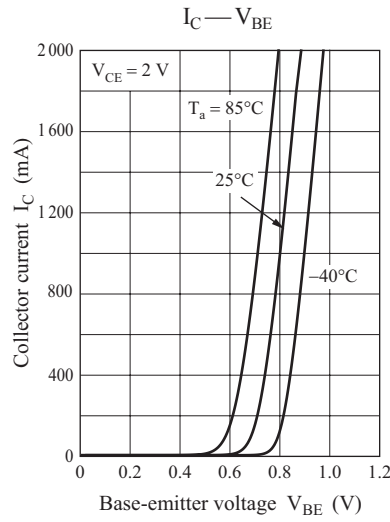
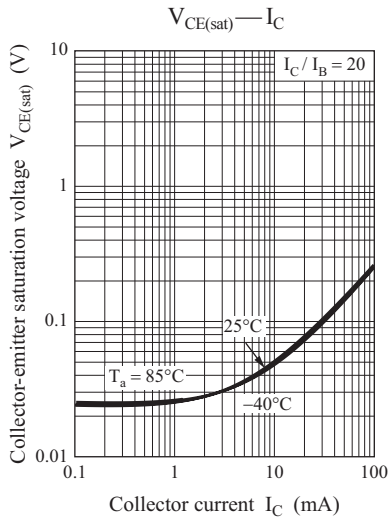
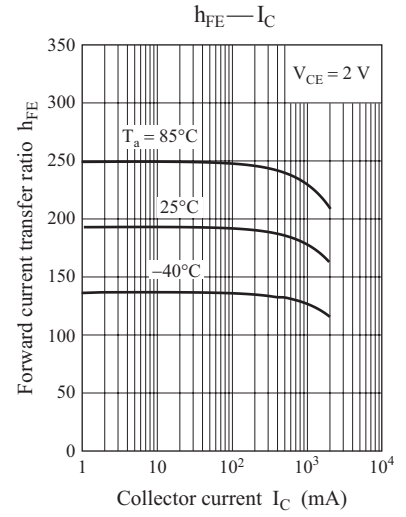
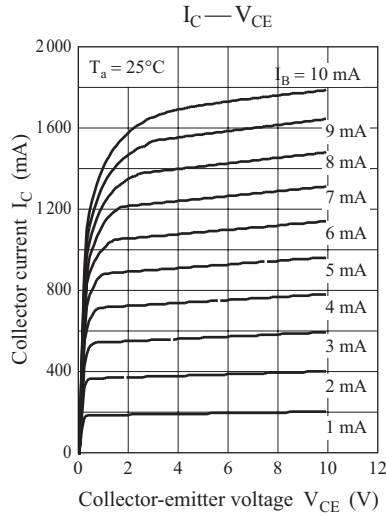
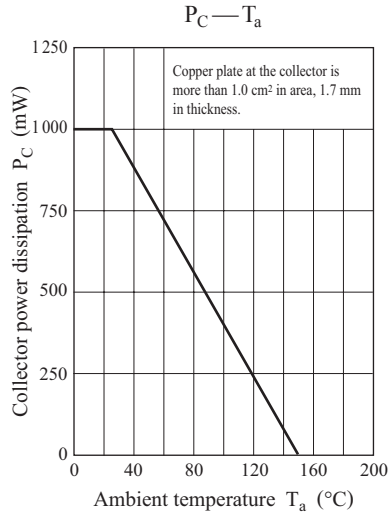
2. *1: Pulse measurement

*2: Rank classification

| Code | R | S | 0 |
|----------------|------------|------------|------------|
| Rank | R | S | No-rank |
| h_{FE1} | 120 to 240 | 170 to 340 | 120 to 340 |
| Marking Symbol | 5BR | 5BS | 5B |

Product of no-rank is not classified and have no marking symbol for rank.



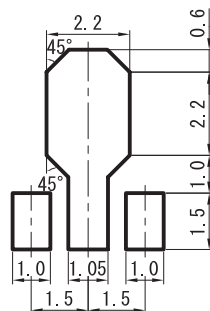


MiniP3-F2-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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Промышленная ул, дом № 19, литера Н,
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