

# DSCQ001

## Silicon NPN epitaxial planar type

For general amplification

Complementary to DSAQ001

DSC3001 in USSMini3 type package

### ■ Features

- High forward current transfer ratio  $h_{FE}$  with excellent linearity
- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Halogen-free / RoHS compliant  
(EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

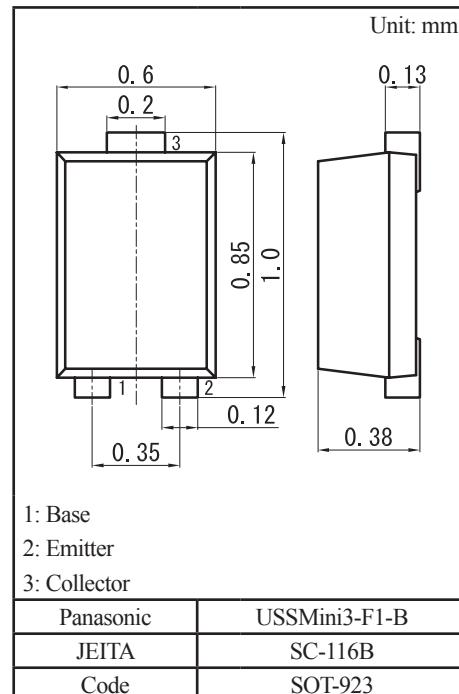
### ■ Marking Symbol: C1

### ■ Packaging

DSCQ00100L Embossed type (Thermo-compression sealing): 10000 pcs / reel (standard)

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

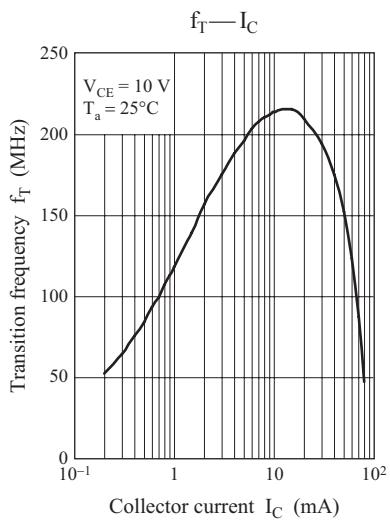
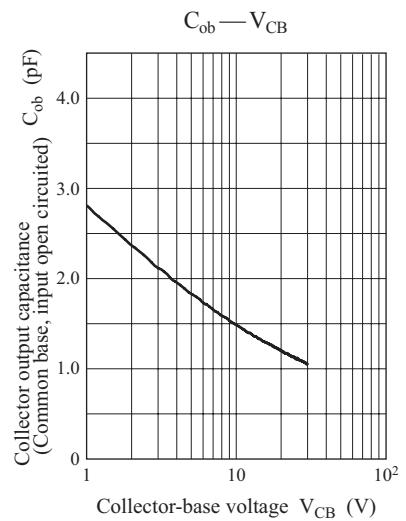
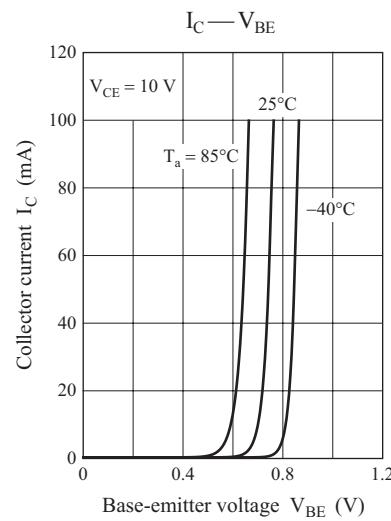
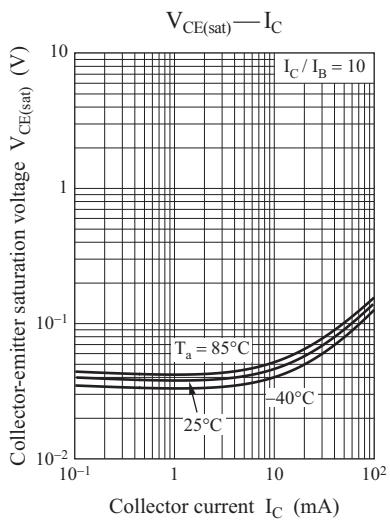
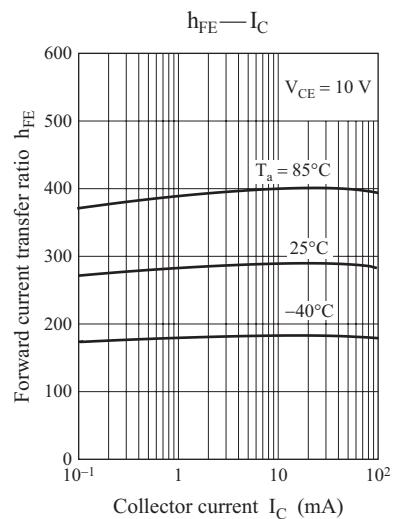
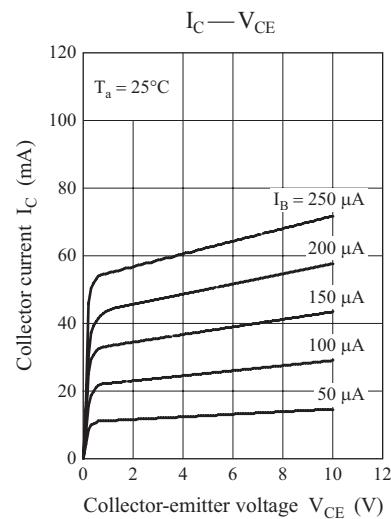
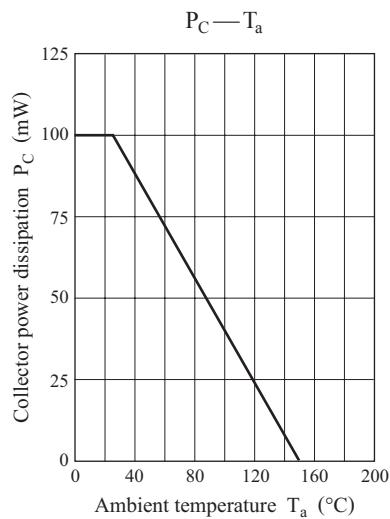
| Parameter                             | Symbol    | Rating      | Unit |
|---------------------------------------|-----------|-------------|------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 60          | V    |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 50          | V    |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 7           | V    |
| Collector current                     | $I_C$     | 100         | mA   |
| Peak collector current                | $I_{CP}$  | 200         | mA   |
| Collector power dissipation           | $P_C$     | 100         | mW   |
| Junction temperature                  | $T_j$     | 150         | °C   |
| Operating ambient temperature         | $T_{opr}$ | -40 to +85  | °C   |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | °C   |



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

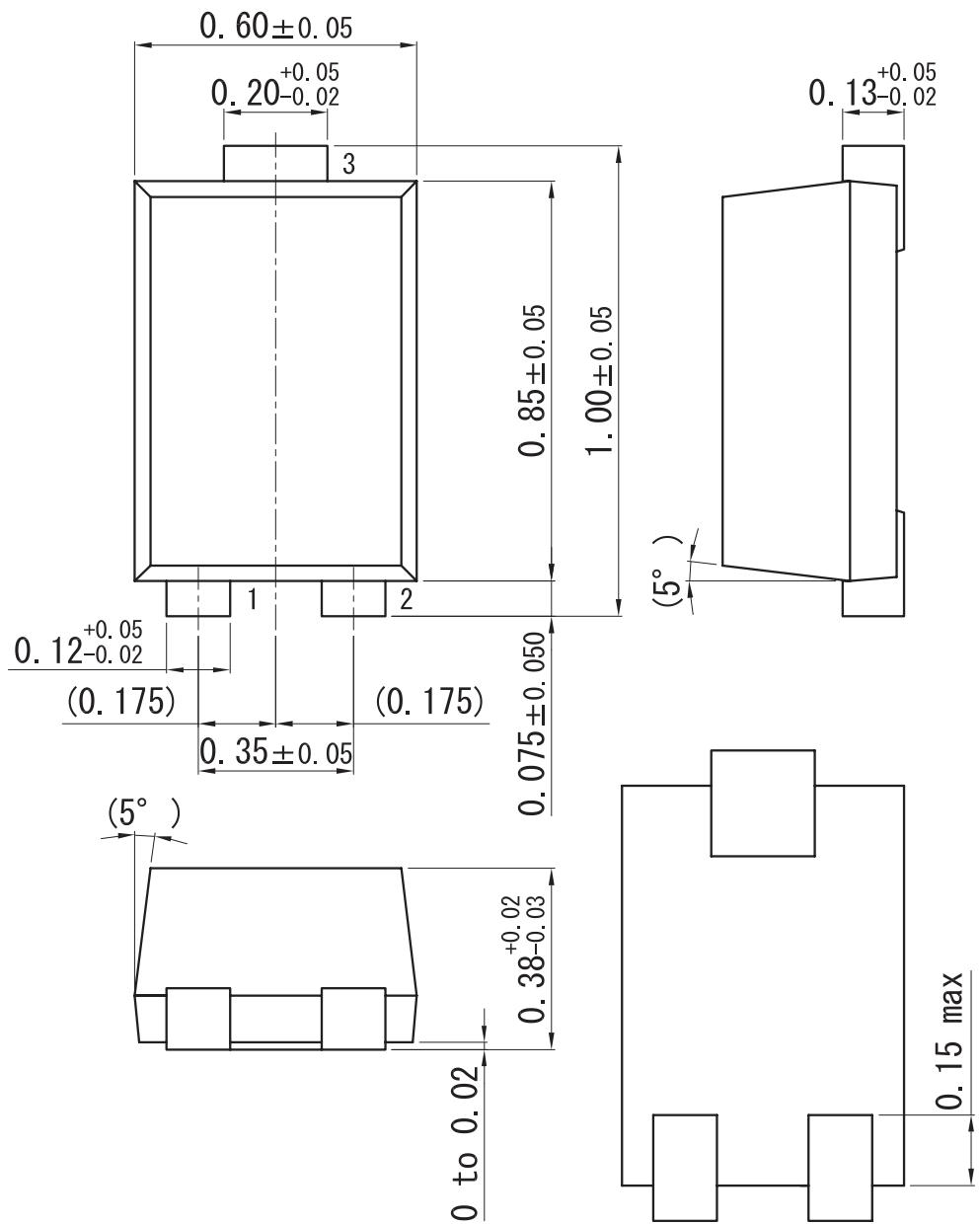
| Parameter   | Symbol        | Conditions  | Min | Typ  | Max | Unit          |
|---|---------------|---|-----|------|-----|---------------|
| Collector-base voltage (Emitter open)                               | $V_{CBO}$     | $I_C = 10 \mu\text{A}, I_E = 0$                     | 60  |      |     | V             |
| Collector-emitter voltage (Base open)                               | $V_{CEO}$     | $I_C = 2 \text{ mA}, I_B = 0$                       | 50  |      |     | V             |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$     | $I_E = 10 \mu\text{A}, I_C = 0$                     | 7   |      |     | V             |
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$     | $V_{CB} = 20 \text{ V}, I_E = 0$                    |     |      | 0.1 | $\mu\text{A}$ |
| Collector-emitter cutoff current (Base open)                        | $I_{CEO}$     | $V_{CE} = 10 \text{ V}, I_B = 0$                    |     |      | 100 | $\mu\text{A}$ |
| Forward current transfer ratio                                      | $h_{FE}$      | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$         | 210 | 460  |     | —             |
| Collector-emitter saturation voltage                                | $V_{CE(sat)}$ | $I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$         |     | 0.13 | 0.3 | V             |
| Transition frequency  | $f_T$         | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$         |     | 150  |     | MHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$      | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ |     | 1.5  |     | pF            |

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

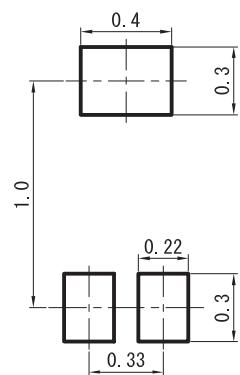


USSMini3-F1-B

Unit: mm



### ■ Land Pattern (Reference) (Unit: mm)



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