

DMC50501

Silicon NPN epitaxial planar type

For general amplification
DMC20501 in SMini6 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: B0

■ Basic Part Number

Dual DSC2001 (Individual)

■ Packaging

DMC505010R Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

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

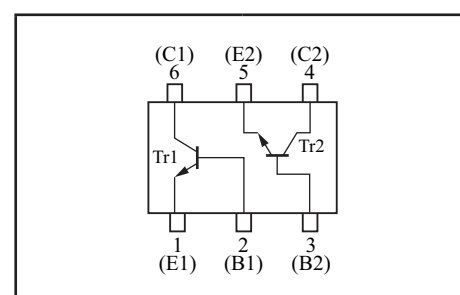
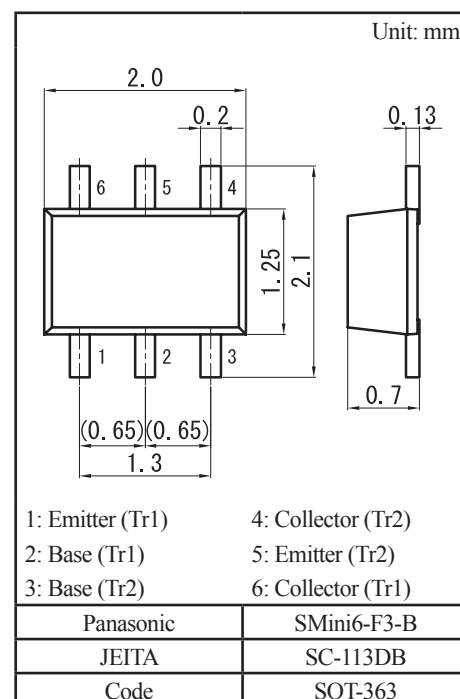
| | Parameter | Symbol | Rating | Unit |
|------------|---------------------------------------|-----------|-------------|------------------|
| Tr1 Tr2 | Collector-base voltage (Emitter open) | V_{CBO} | 60 | V |
| | Collector-emitter voltage (Base open) | V_{CEO} | 50 | V |
| | Emitter-base voltage (Collector open) | V_{EBO} | 7 | V |
| | Collector current | I_C | 100 | mA |
| | Peak collector current | I_{CP} | 200 | mA |
| Overall | Total power dissipation | P_T | 150 | mW |
| | 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 | $^\circ\text{C}$ |

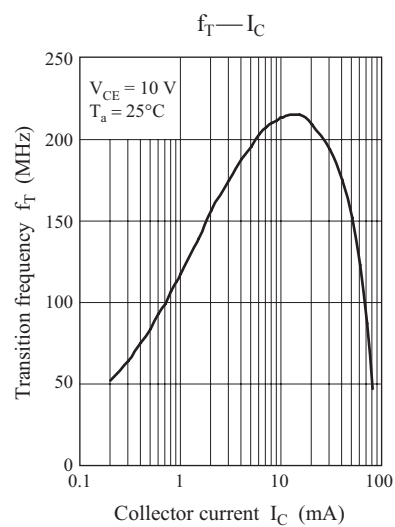
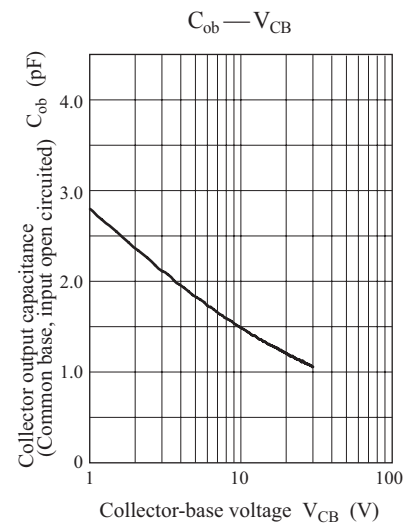
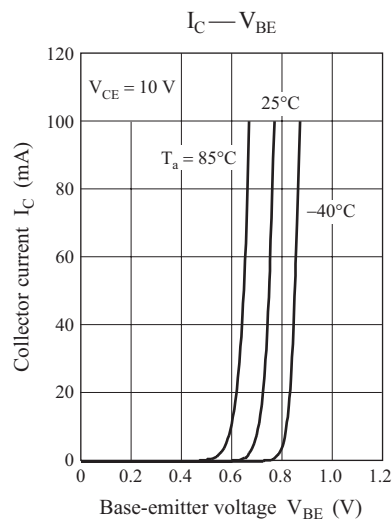
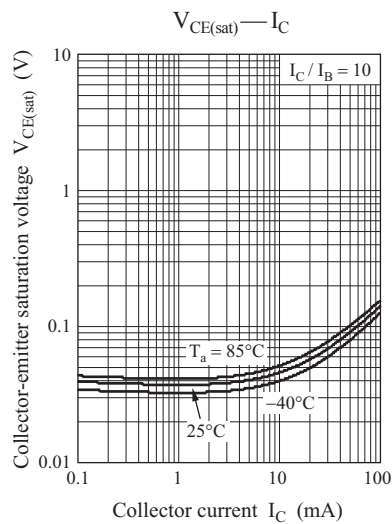
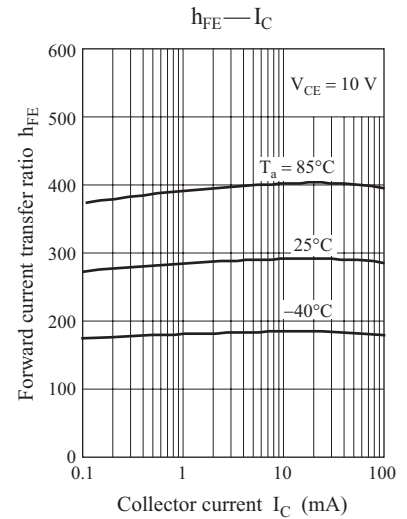
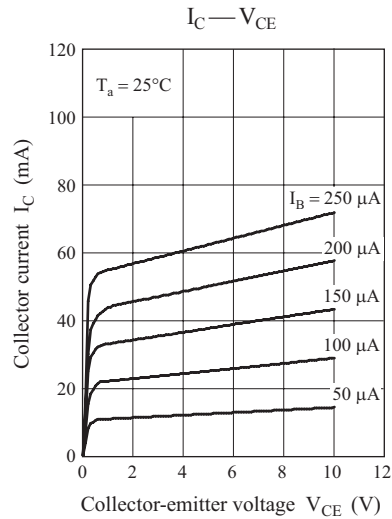
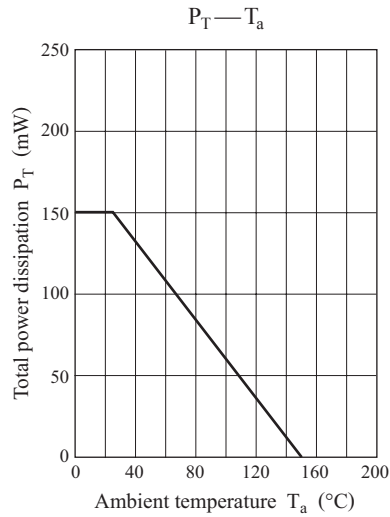
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| 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 | μA |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = 10 \text{ V}$, $I_B = 0$ | | | 100 | μA |
| Forward current transfer ratio | h_{FE} | $V_{CE} = 10 \text{ V}$, $I_C = 2 \text{ mA}$ | 210 | | 460 | — |
| h_{FE} ratio *1 | h_{FE} (Small/Large) | $V_{CE} = 10 \text{ V}$, $I_C = 2 \text{ mA}$ | 0.50 | 0.99 | | — |
| 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 (Common base, input open circuited) | C_{ob} | $V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$ | | 1.5 | | pF |

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

2. *1: Ratio between 2 elements





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