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DME20501

Silicon PNP epitaxial planar type (Tr1)
 Silicon NPN epitaxial planar type (Tr2)

For general amplification

■ 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: B1

■ Basic Part Number

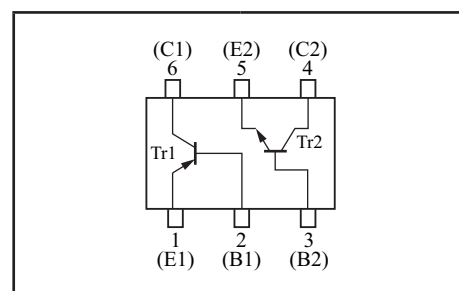
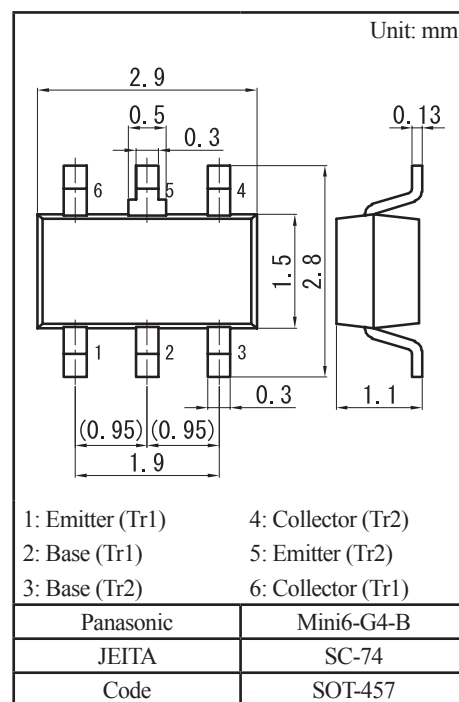
DSA2001 + DSC2001 (Individual)

■ Packaging

DME205010R Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

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

| | Parameter | Symbol | Rating | Unit |
|---------|---------------------------------------|-----------|-------------|------------------|
| Tr1 | 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 |
| 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 | 300 | 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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

• Tr1

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|----------------------|--|-----|------|------|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_{\text{C}} = -10 \mu\text{A}, I_{\text{E}} = 0$ | -60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_{\text{C}} = -2 \text{ mA}, I_{\text{B}} = 0$ | -50 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_{\text{E}} = -10 \mu\text{A}, I_{\text{C}} = 0$ | -7 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{\text{CB}} = -20 \text{ V}, I_{\text{E}} = 0$ | | | -0.1 | μA |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{\text{CE}} = -10 \text{ V}, I_{\text{B}} = 0$ | | | -100 | μA |
| Forward current transfer ratio | h_{FE} | $V_{\text{CE}} = -10 \text{ V}, I_{\text{C}} = -2 \text{ mA}$ | 210 | | 460 | — |
| Collector-emitter saturation voltage | $V_{\text{CE(sat)}}$ | $I_{\text{C}} = -100 \text{ mA}, I_{\text{B}} = -10 \text{ mA}$ | | -0.2 | -0.5 | V |
| Transition frequency | f_{T} | $V_{\text{CE}} = -10 \text{ V}, I_{\text{C}} = -2 \text{ mA}$ | | 150 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{\text{CB}} = -10 \text{ V}, I_{\text{E}} = 0, f = 1 \text{ MHz}$ | | 2 | | pF |

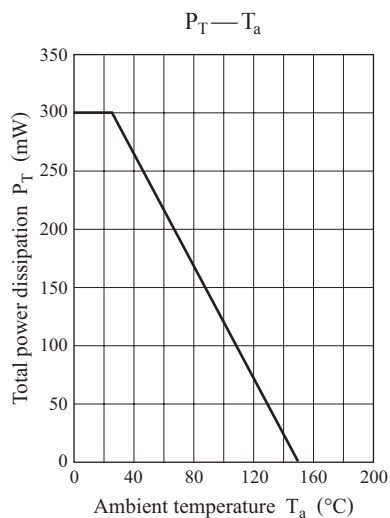
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

• Tr2

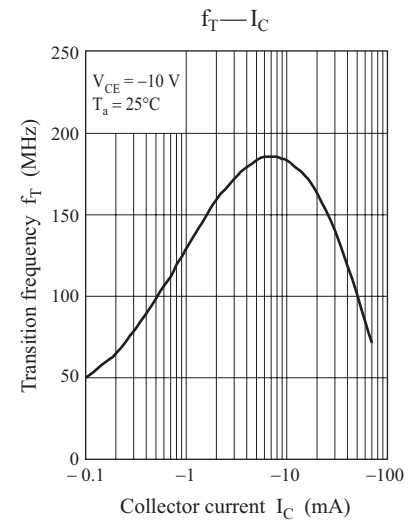
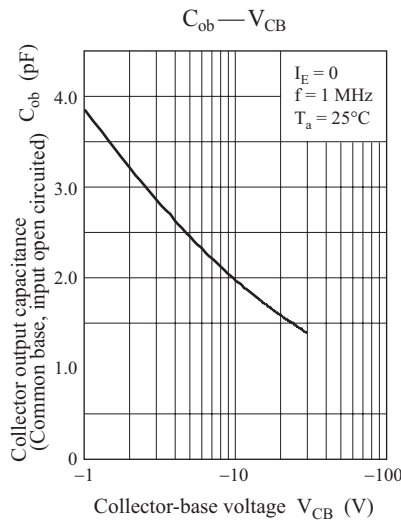
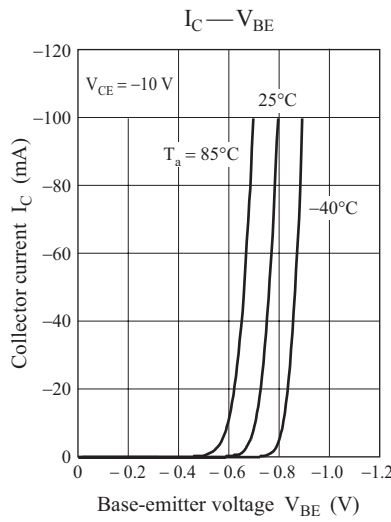
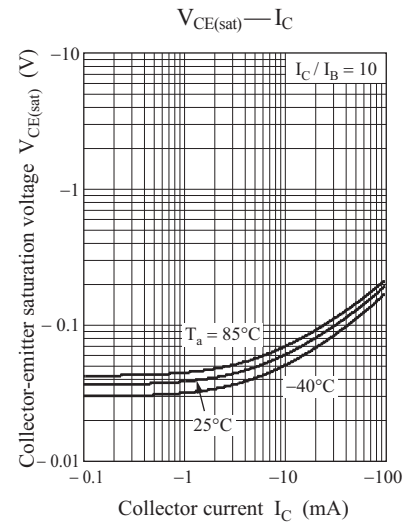
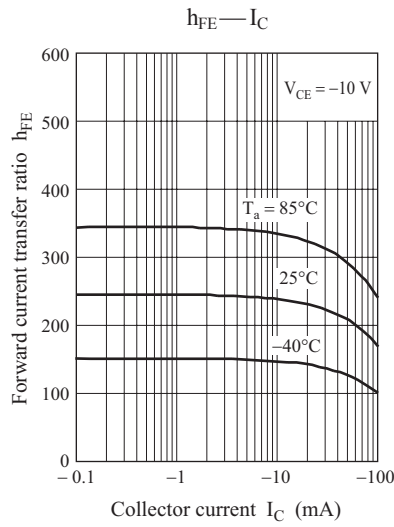
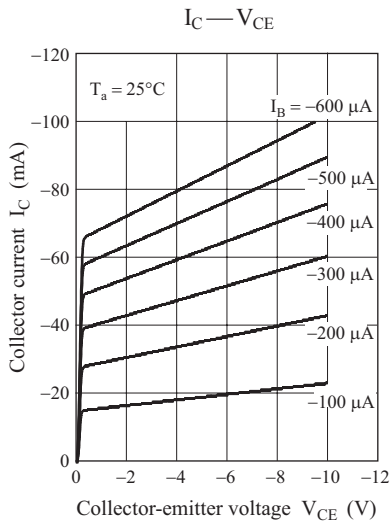
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|----------------------|---|-----|------|-----|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_{\text{C}} = 10 \mu\text{A}, I_{\text{E}} = 0$ | 60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_{\text{C}}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

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

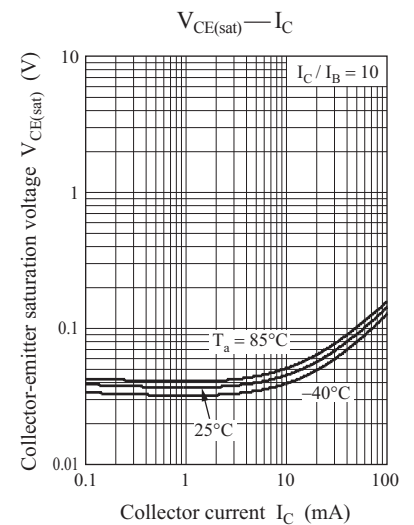
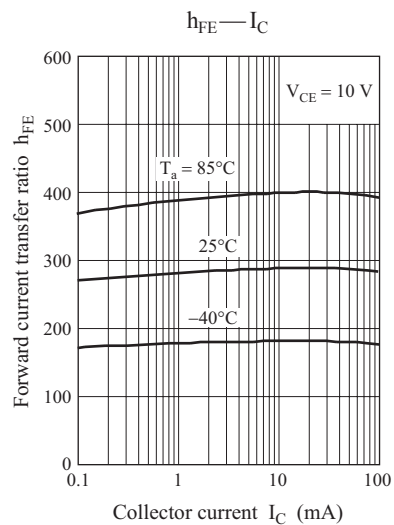
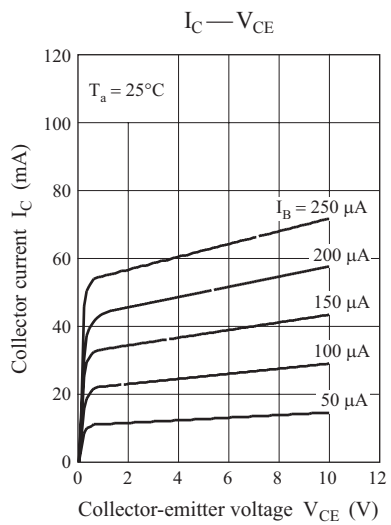
Common characteristics chart

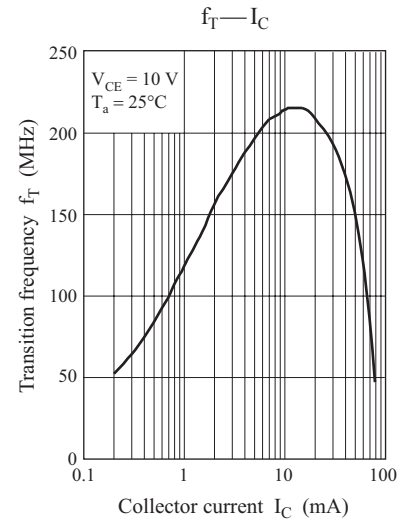
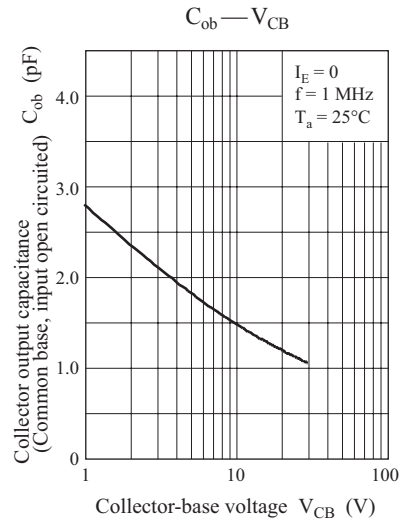
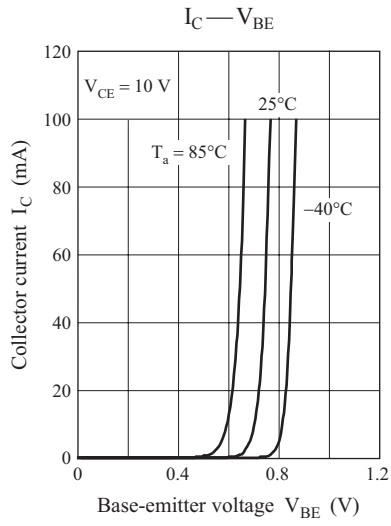


Characteristics charts of Tr1



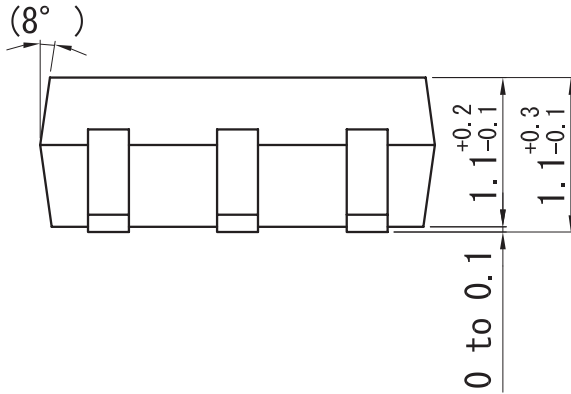
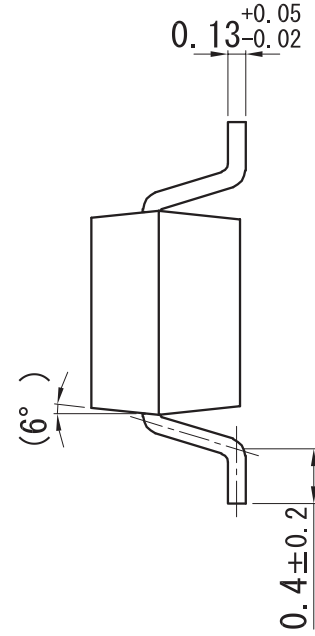
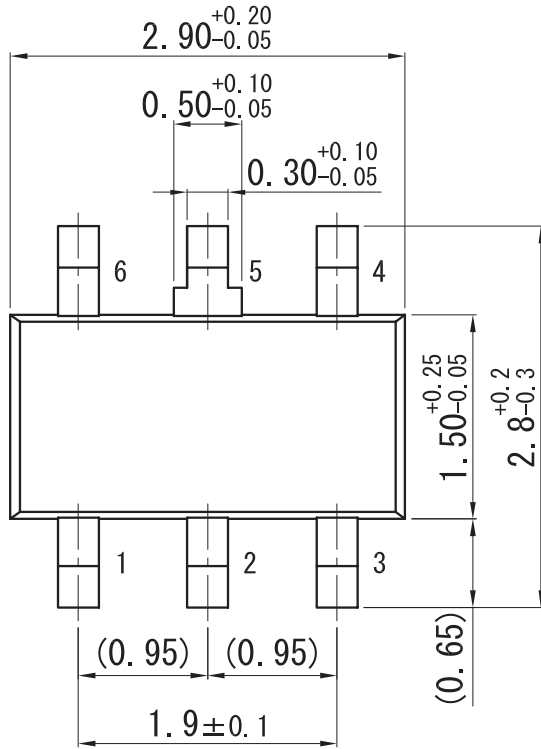
Characteristics charts of Tr2



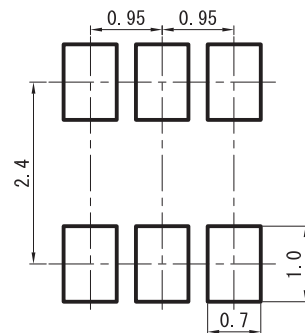


Mini6-G4-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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