

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC4881

High-Current Switching Applications

- Low saturation voltage: $V_{CE(sat)} = 0.4 \text{ V (max)}$
- High-speed switching: $t_{stg} = 0.8 \mu\text{s (typ.)}$

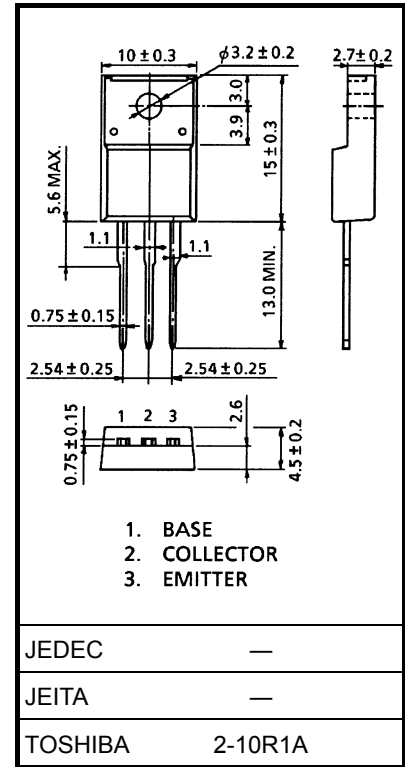
Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

| Characteristics | | Symbol | Rating | Unit |
|-----------------------------|--------------------------|-----------|------------|------------------|
| Collector-base voltage | | V_{CBO} | 60 | V |
| Collector-emitter voltage | | V_{CEO} | 50 | V |
| Emitter-base voltage | | V_{EBO} | 5 | V |
| Collector current | DC | I_C | 5 | A |
| | Pulse | I_{CP} | 8 | |
| Base current | | I_B | 1 | A |
| Collector power dissipation | $T_a = 25^\circ\text{C}$ | P_C | 2.0 | W |
| | $T_c = 25^\circ\text{C}$ | | 20 | |
| Junction temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature range | | T_{stg} | -55 to 150 | $^\circ\text{C}$ |

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm

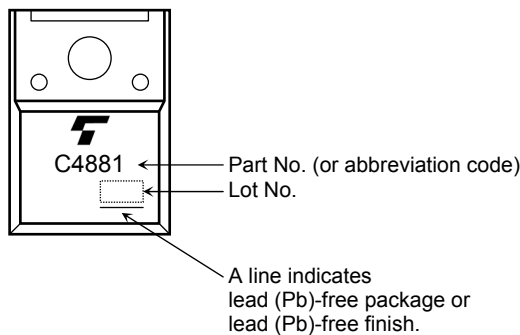


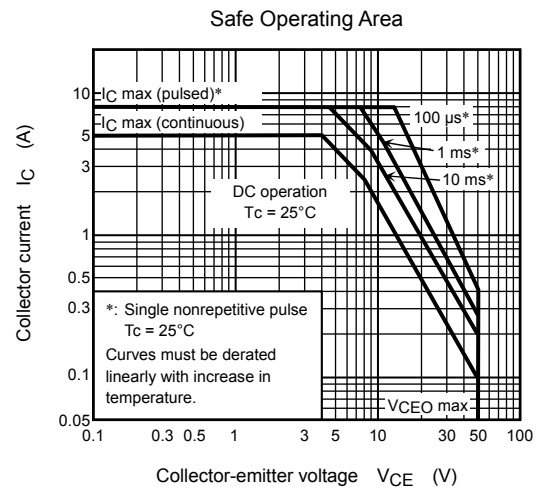
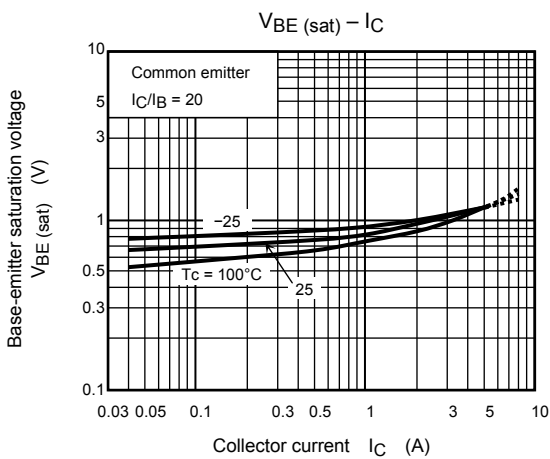
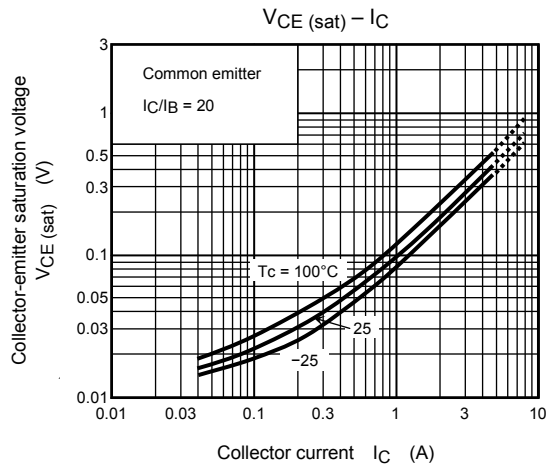
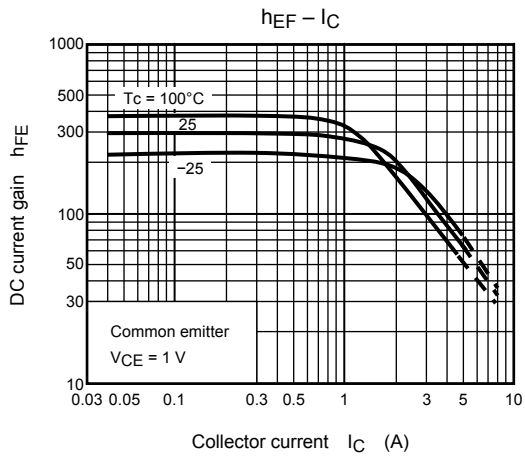
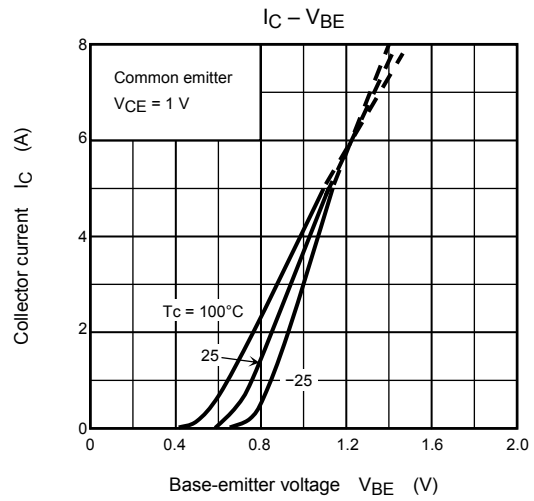
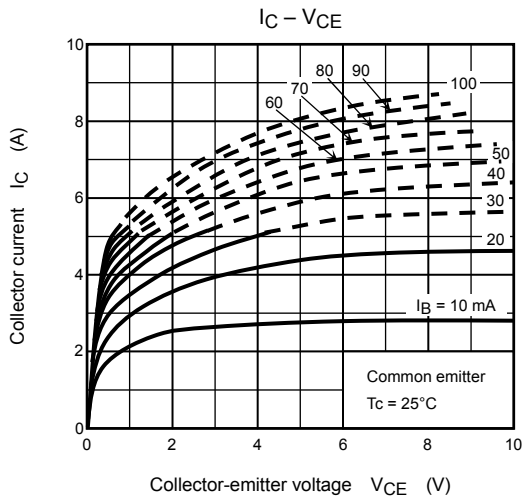
Weight: 1.7 g (typ.)

Electrical Characteristics (Tc = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------|----------------|--|-----|------|-----|---------------|
| Collector cut-off current | | I_{CBO} | $V_{CB} = 50\text{ V}, I_E = 0$ | — | — | 1 | μA |
| Emitter cut-off current | | I_{EBO} | $V_{EB} = 6\text{ V}, I_C = 0$ | — | — | 1 | μA |
| Collector-emitter breakdown voltage | | $V_{(BR) CEO}$ | $I_C = 10\text{ mA}, I_B = 0$ | 50 | — | — | V |
| DC current gain | | $h_{FE} (1)$ | $V_{CE} = 1\text{ V}, I_C = 1\text{ A}$ | 100 | — | 320 | |
| | | $h_{FE} (2)$ | $V_{CE} = 1\text{ V}, I_C = 2.5\text{ A}$ | 60 | — | — | |
| Collector-emitter saturation voltage | | $V_{CE (sat)}$ | $I_C = 2.5\text{ A}, I_B = 125\text{ mA}$ | — | 0.25 | 0.4 | V |
| Base-emitter saturation voltage | | $V_{BE (sat)}$ | $I_C = 2.5\text{ A}, I_B = 125\text{ mA}$ | — | 1.0 | 1.3 | V |
| Transition frequency | | f_T | $V_{CB} = 4\text{ V}, I_C = 1\text{ A}$ | — | 100 | — | MHz |
| Collector output capacitance | | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 45 | — | pF |
| Switching time | Turn-on time | t_{on} | <p>$I_{B1} = -I_{B2} = 125\text{ mA}, \text{duty cycle} \leq 1\%$</p> | — | 0.1 | — | μs |
| | Storage time | t_{stg} | | — | 0.8 | — | |
| | Fall time | t_f | | — | 0.1 | — | |

Marking





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20070701-EN

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