

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

2SC4408

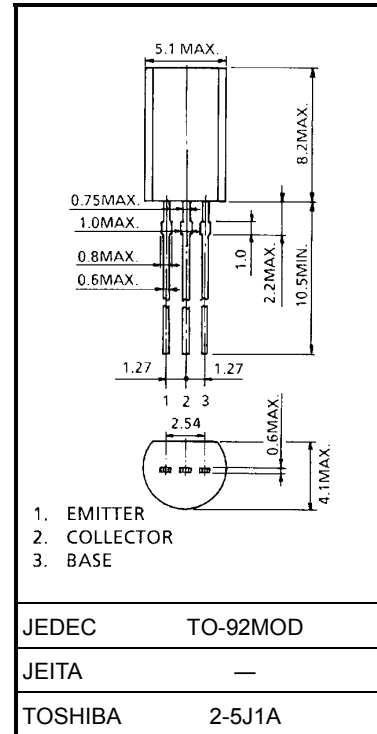
Power Amplifier Applications
Power Switching Applications

Unit: mm

- Low saturation voltage: $V_{CE(sat)} = 0.5 \text{ V (max)}$ ($I_C = 1 \text{ A}$)
- High collector power dissipation: $P_C = 900 \text{ mW}$
- High-speed switching: $t_{stg} = 500 \text{ ns (typ.)}$
- Complementary to 2SA1680

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

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|------------|------------------|
| Collector-base voltage | V_{CBO} | 80 | V |
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Emitter-base voltage | V_{EBO} | 6 | V |
| Collector current | I_C | 2 | A |
| Base current | I_B | 0.2 | A |
| Collector power dissipation | P_C | 900 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | -55 to 150 | $^\circ\text{C}$ |



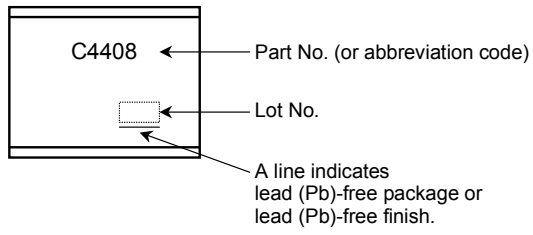
Weight: 0.36 g (typ.)

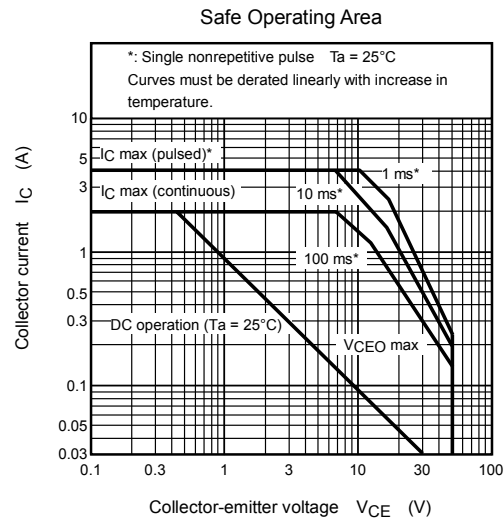
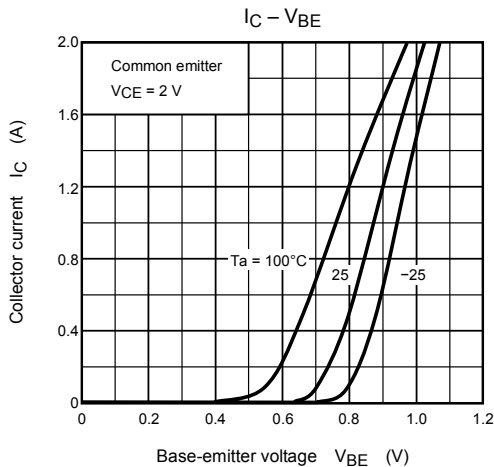
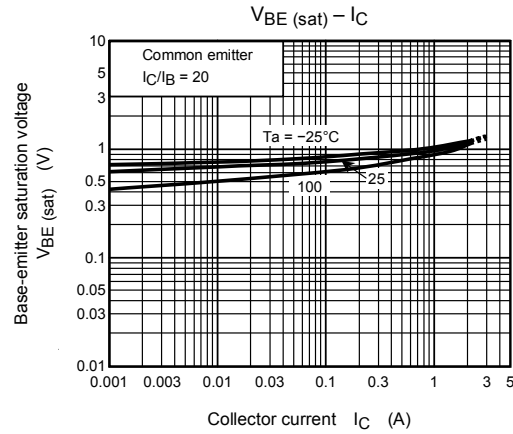
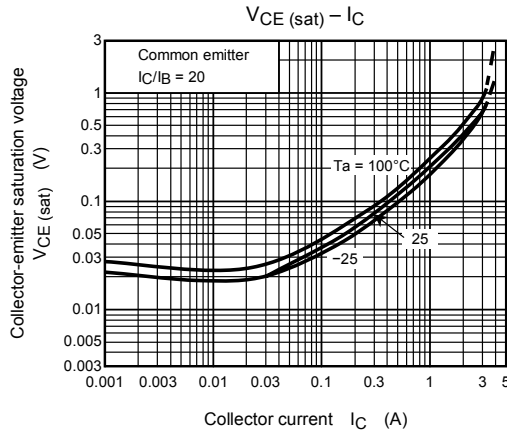
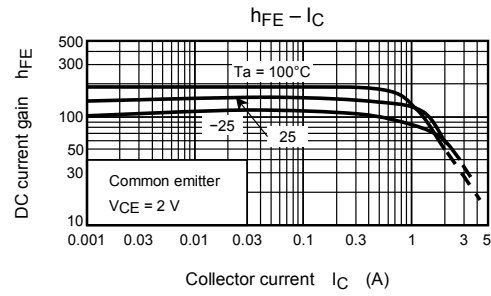
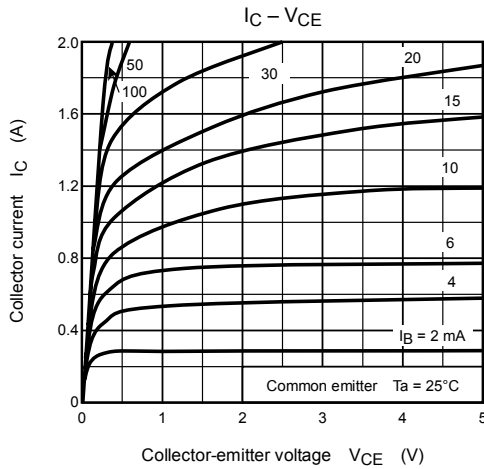
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|---------------|---|-----|------|-----|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 80 \text{ V}, I_E = 0$ | — | — | 1.0 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 6 \text{ V}, I_C = 0$ | — | — | 1.0 | μA |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 10 \text{ mA}, I_B = 0$ | 50 | — | — | V |
| DC current gain | $h_{FE(1)}$ | $V_{CE} = 2 \text{ V}, I_C = 100 \text{ mA}$ | 120 | — | 400 | |
| | $h_{FE(2)}$ | $V_{CE} = 2 \text{ V}, I_C = 1.5 \text{ A}$ | 40 | — | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 1 \text{ A}, I_B = 0.05 \text{ A}$ | — | — | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 1 \text{ A}, I_B = 0.05 \text{ A}$ | — | — | 1.2 | V |
| Transition frequency | f_T | $V_{CE} = 2 \text{ V}, I_C = 100 \text{ mA}$ | — | 100 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10 \text{ V}, I_C = 0, f = 1 \text{ MHz}$ | — | 14 | — | pF |
| Switching time | Turn-on time | t_{on} | — | 0.1 | — | μs |
| | Storage time | t_{stg} | — | 0.5 | — | |
| | Fall time | t_f | — | 0.1 | — | |

$I_{B1} = -I_{B2} = 0.05 \text{ A}, \text{ duty cycle } \leq 1\%$

Marking





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