

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC5712

High-Speed Switching Applications
 DC-DC Converter Applications
 DC-AC Converter Applications

- High DC current gain: $h_{FE} = 400$ to 1000 ($I_C = 0.3$ A)
- Low collector-emitter saturation voltage: $V_{CE(sat)} = 0.14$ V (max)
- High-speed switching: $t_f = 120$ ns (typ.)

Maximum Ratings (Ta = 25°C)

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|------------|------------|------|
| Collector-base voltage | V_{CBO} | 100 | V |
| Collector-emitter voltage | V_{CEX} | 80 | V |
| | V_{CEO} | 50 | |
| Emitter-base voltage | V_{EBO} | 7 | V |
| Collector current | DC | I_C | A |
| | Pulse | I_{CP} | |
| Base current | I_B | 300 | mA |
| Collector power dissipation | DC | P_C | W |
| | $t = 10$ s | (Note) | |
| Junction temperature | T_j | 150 | °C |
| Storage temperature range | T_{stg} | -55 to 150 | °C |

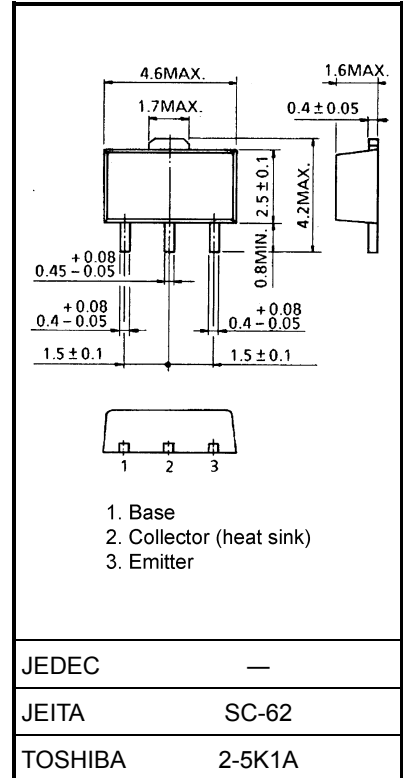
Note: Mounted on FR4 board (glass epoxy, 1.6 mm thick, Cu area: 645 mm²)

Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|---------------|--|-----|------|------|------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 100$ V, $I_E = 0$ | — | — | 100 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 7$ V, $I_C = 0$ | — | — | 100 | nA |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 10$ mA, $I_B = 0$ | 50 | — | — | V |
| DC current gain | $h_{FE(1)}$ | $V_{CE} = 2$ V, $I_C = 0.3$ A | 400 | — | 1000 | |
| | $h_{FE(2)}$ | $V_{CE} = 2$ V, $I_C = 1$ A | 200 | — | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 1$ A, $I_B = 20$ mA | — | — | 0.14 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 1$ A, $I_B = 20$ mA | — | — | 1.10 | V |
| Collector output capacitance | C_{ob} | $V_{CB} = 10$ V, $I_E = 0$, $f = 1$ MHz | — | 13 | — | pF |
| Switching time | Rise time | t_r | — | 40 | — | ns |
| | Storage time | t_{stg} | — | 500 | — | |
| | Fall time | t_f | — | 120 | — | |

Industrial Applications

Unit: mm



Weight: 0.05 g (typ.)

Marking

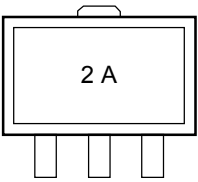
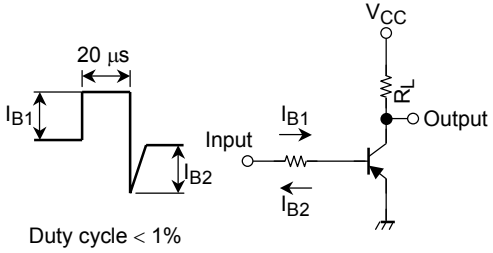
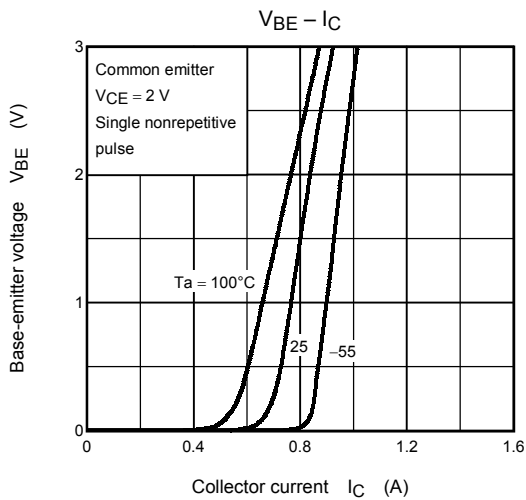
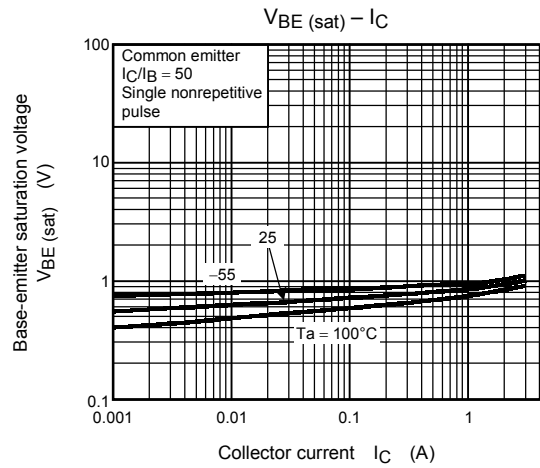
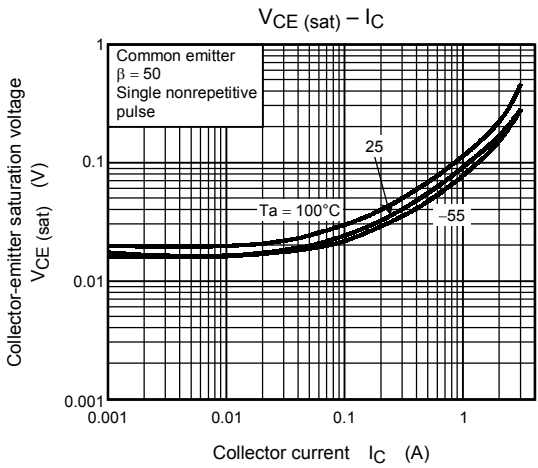
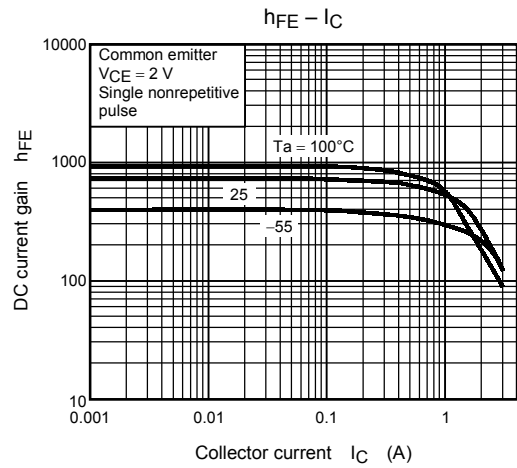
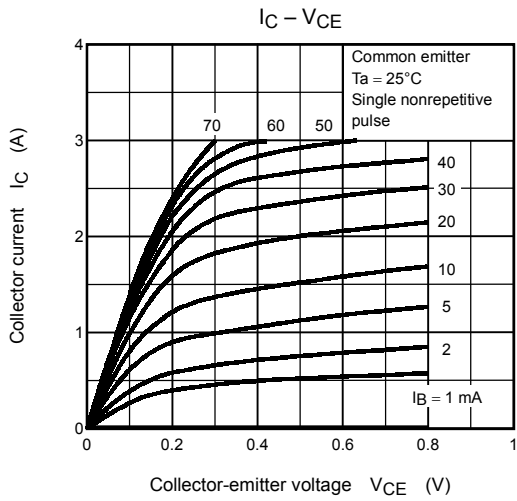
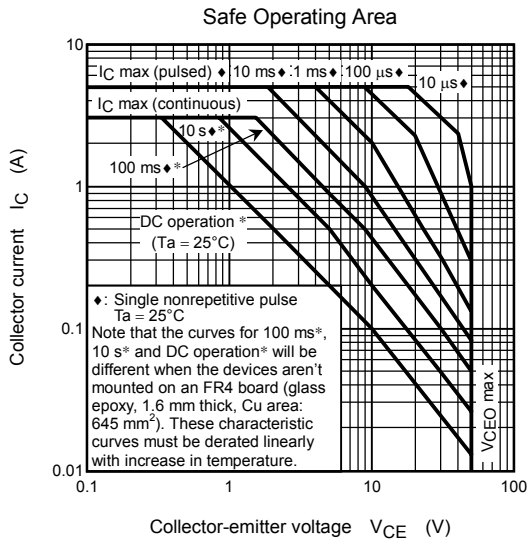
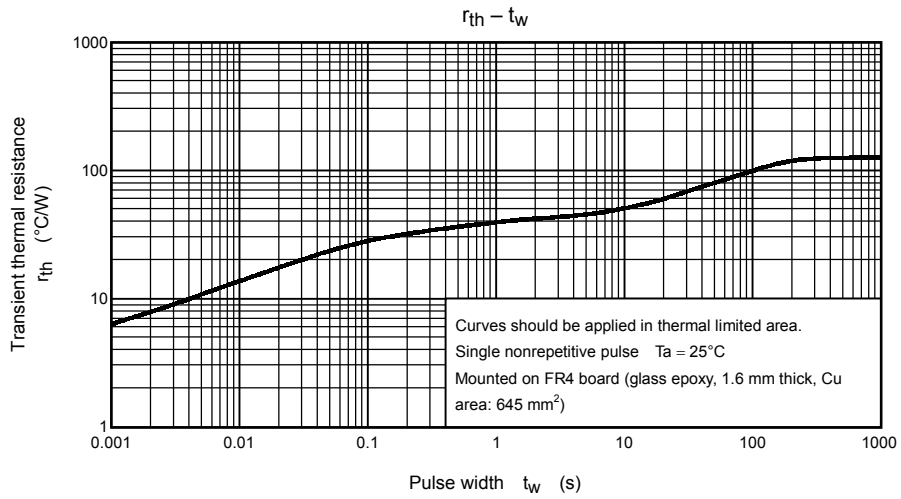


Figure 1 Switching Time Test Circuit & Timing Chart





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