

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

2SC3710A

High-Power Switching Applications

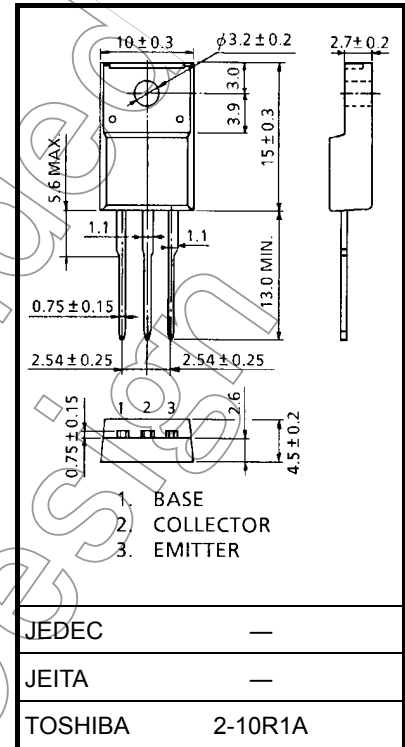
- Low collector saturation voltage: $V_{CE(sat)} = 0.4 \text{ V (max)}$
- High-speed switching: $t_{stg} = 1.0 \mu\text{s (typ.)}$
- Complementary to 2SA1452A

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

| Characteristics | Symbol | Rating | Unit |
|---|-----------|------------|------------------|
| Collector-base voltage | V_{CBO} | 80 | V |
| Collector-emitter voltage | V_{CEO} | 80 | V |
| Emitter-base voltage | V_{EBO} | 6 | V |
| Collector current | I_C | 12 | A |
| Base current | I_B | 2 | A |
| Collector power dissipation ($T_c = 25^\circ\text{C}$) | P_C | 30 | W |
| 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.)

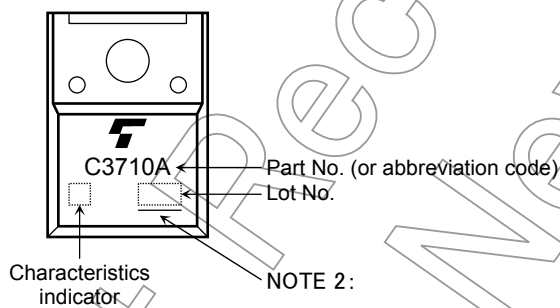
Not for New

Electrical Characteristics (T_a = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|-------------------------------|-----------------------|---|-----|------|-----|------|
| Collector cut-off current | | I _{CBO} | V _{CB} = 80 V, I _E = 0 | — | — | 10 | μA |
| Emitter cut-off current | | I _{EBO} | V _{EB} = 6 V, I _C = 0 | — | — | 10 | μA |
| Collector-emitter breakdown voltage | | V _{(BR) CEO} | I _C = 50 mA, I _B = 0 | 80 | — | — | V |
| DC current gain | h _{FE} (1) (Note) | | V _{CE} = 1 V, I _C = 1 A | 70 | — | 240 | |
| | h _{FE} (2) | | V _{CE} = 1 V, I _C = 6 A | 40 | — | — | |
| Collector-emitter saturation voltage | | V _{CE (sat)} | I _C = 6 A, I _B = 0.3 A | — | 0.2 | 0.4 | V |
| Base-emitter saturation voltage | | V _{BE (sat)} | I _C = 6 A, I _B = 0.3 A | — | 0.9 | 1.2 | V |
| Transition frequency | | f _T | V _{CE} = 5 V, I _C = 1 A | — | 80 | — | MHz |
| Collector output capacitance | | C _{ob} | V _{CB} = 10 V, I _E = 0, f = 1 MHz | — | 220 | — | pF |
| Switching time | Turn-on time | t _{on} | <p>20 μs Input I_{B1} I_{B2} Output 5 Ω V_{CC} ≈ 30 V I_{B1} = 0.3 A, I_{B2} = 0.3 A, duty cycle ≤ 1%</p> | — | 0.2 | — | μs |
| | Storage time | t _{stg} | | — | — | — | |
| | Fall time | t _f | | — | 0.2 | — | |

Note: h_{FE} (1) classification O: 70 to 140, Y: 120 to 240

Marking

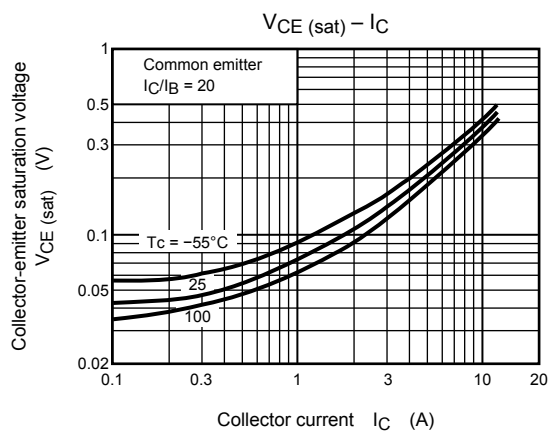
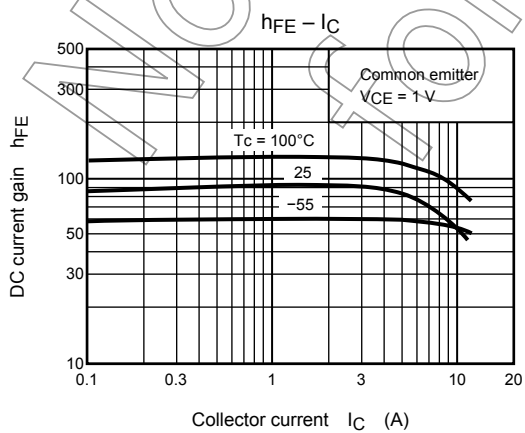
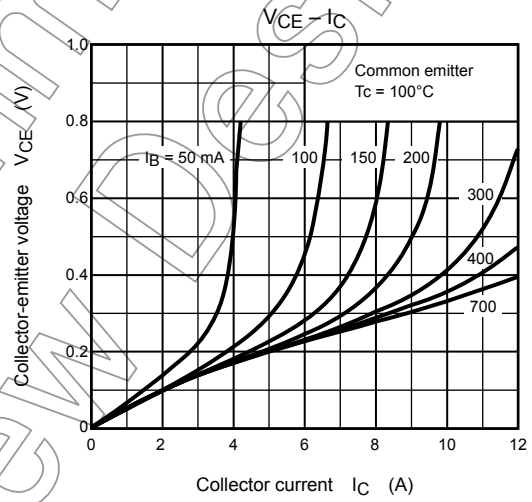
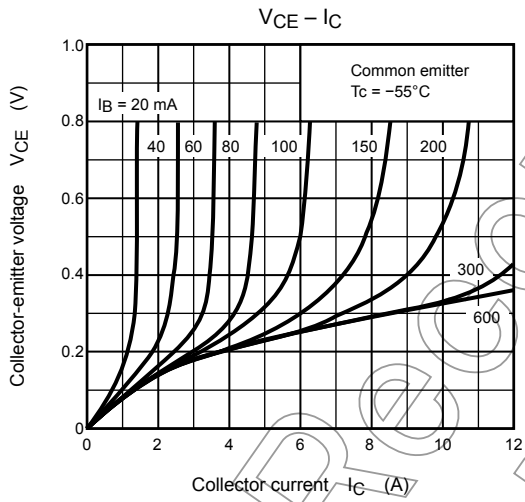
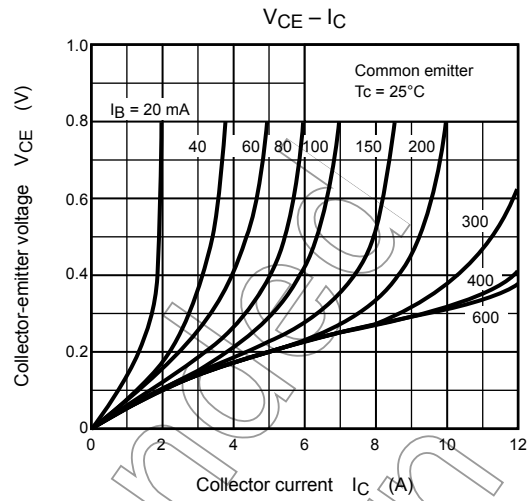
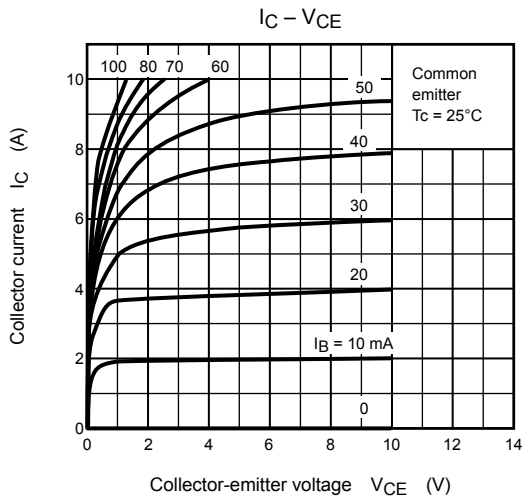


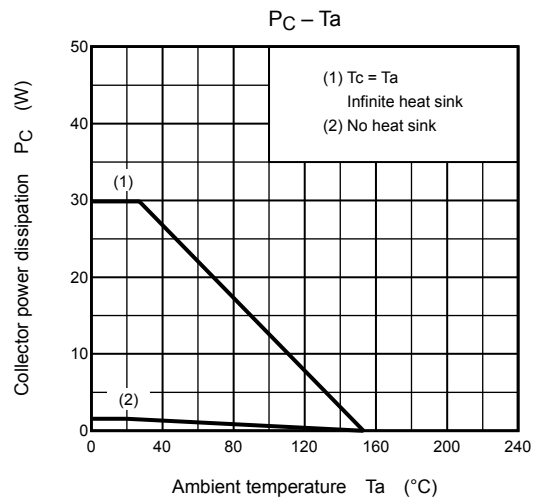
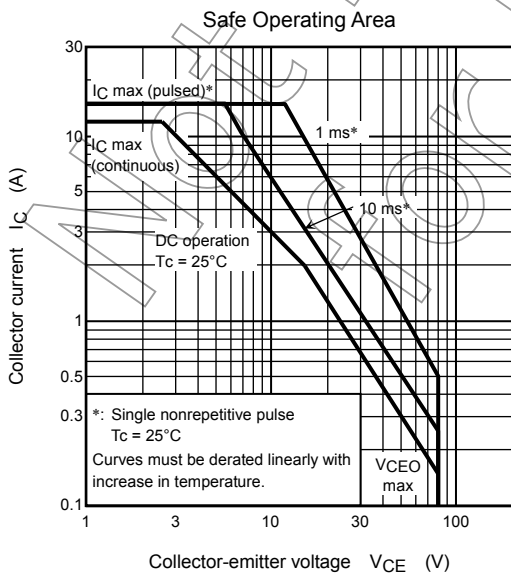
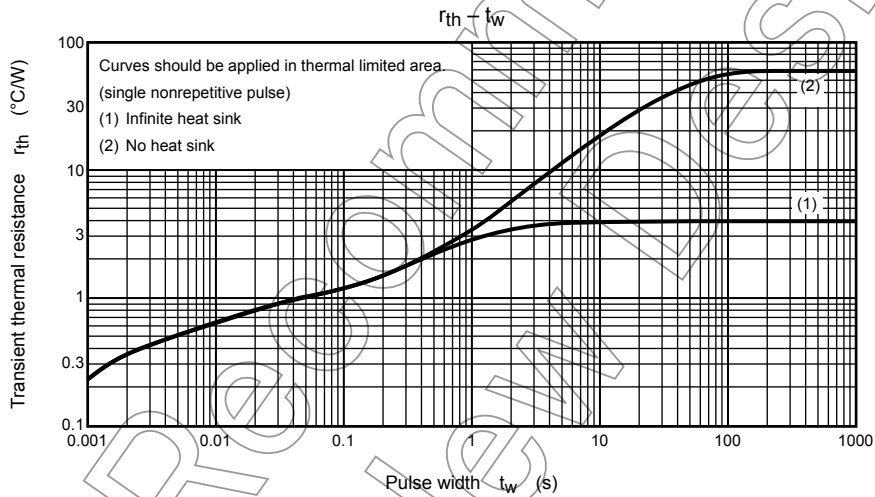
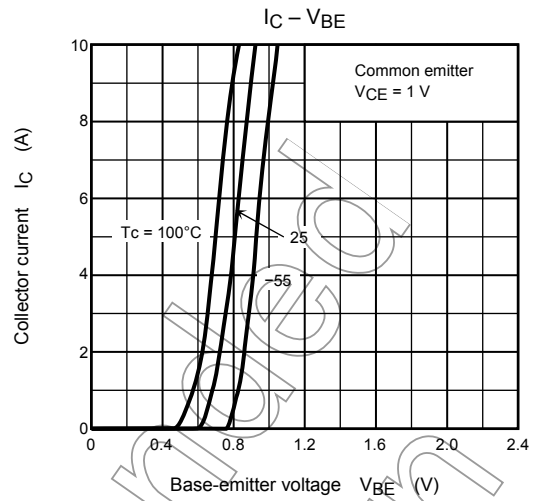
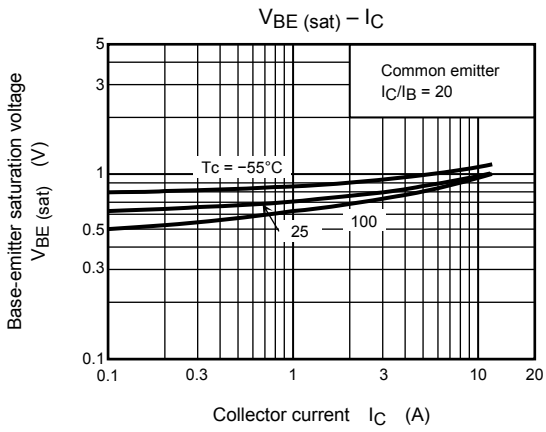
Note 2 : A line under a Lot No. identifies the indication of product Labels.

[[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product.

The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.





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