

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SC5948

Power Amplifier Applications

- Complementary to 2SA2120
- Recommended for audio frequency amplifier output stage.

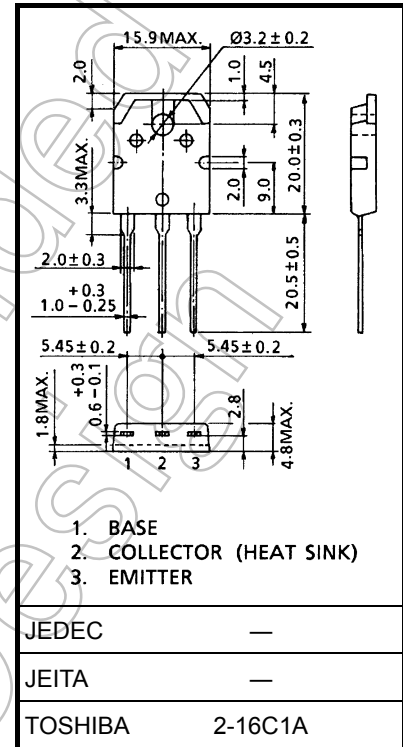
Absolute Maximum Ratings (Tc = 25°C)

| Characteristic | Symbol | Rating | Unit |
|-----------------------------|------------------|---------|------|
| Collector-base voltage | V _{CBO} | 200 | V |
| Collector-emitter voltage | V _{CEO} | 200 | V |
| Emitter-base voltage | V _{EBO} | 5 | V |
| Collector current | I _C | 12 | A |
| Base current | I _B | 1.2 | A |
| Collector power dissipation | P _C | 200 | W |
| Junction temperature | T _j | 150 | °C |
| Storage temperature range | T _{stg} | -55~150 | °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



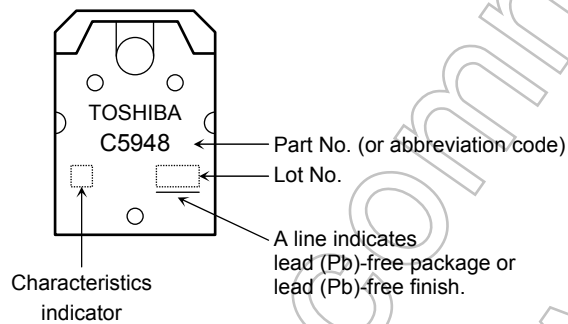
Weight: 4.7 g (typ.)

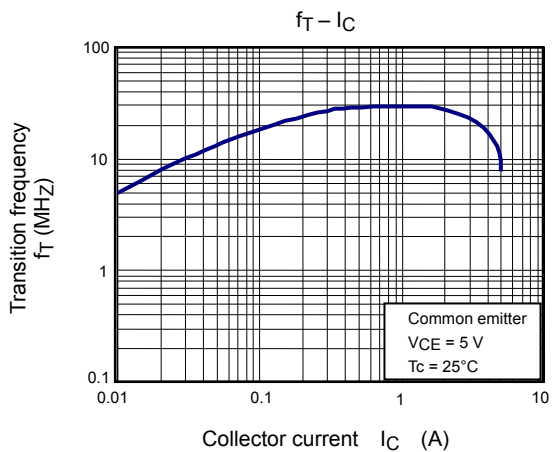
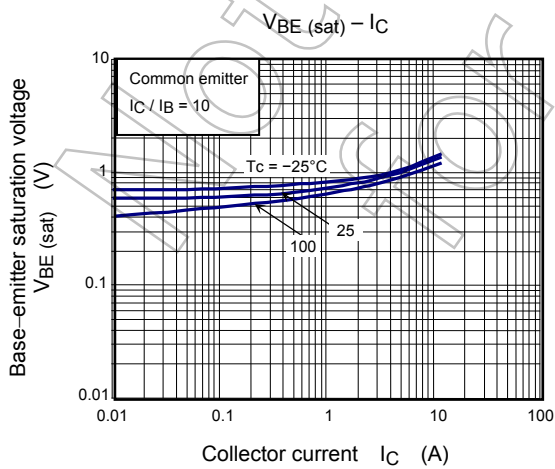
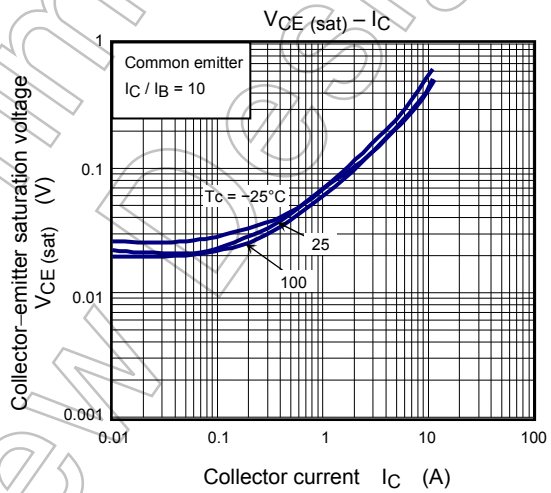
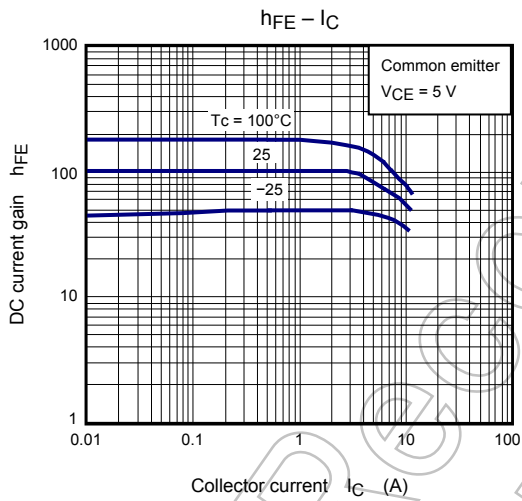
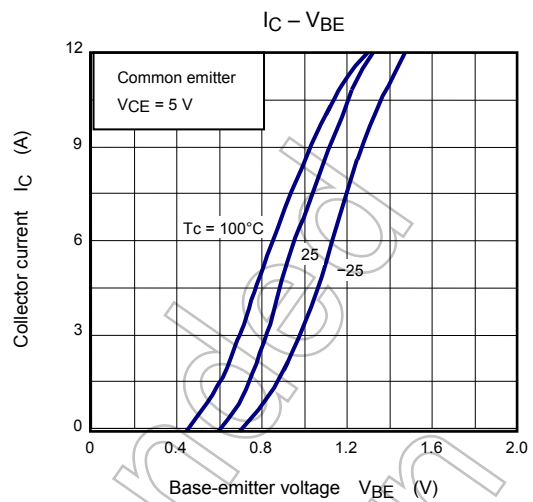
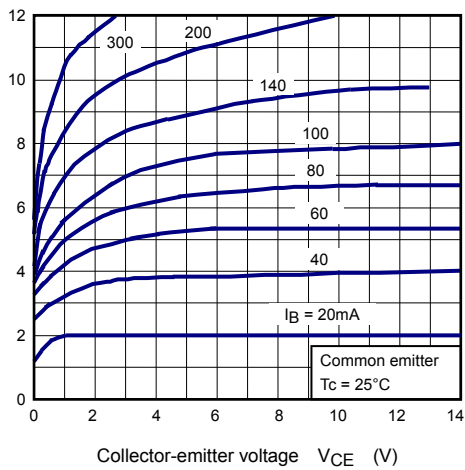
Electrical Characteristics (Tc = 25°C)

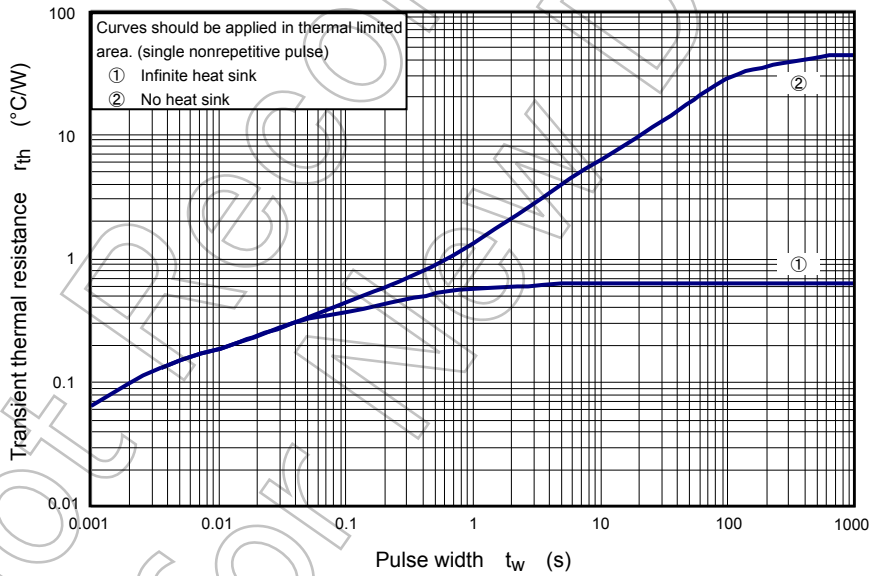
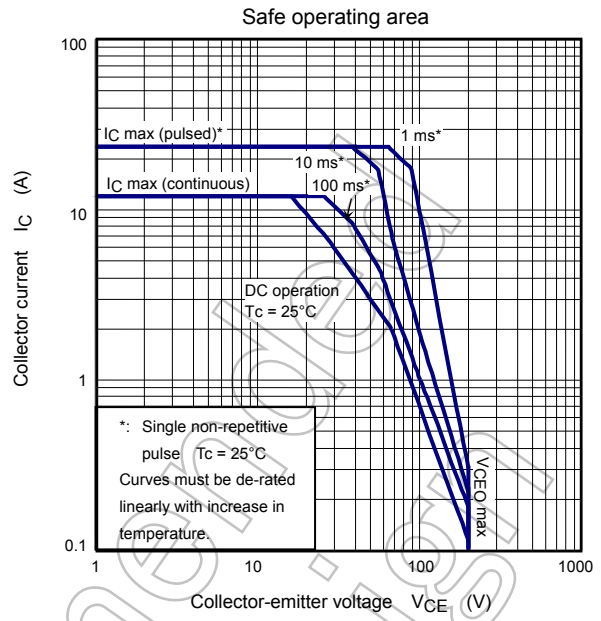
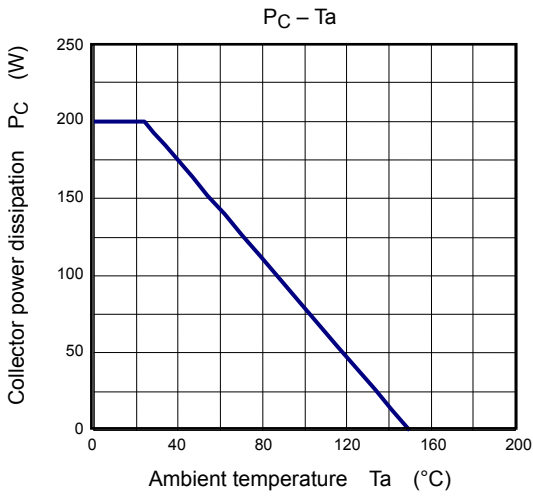
| Characteristic | Symbol | Test Conditions | Min | Typ. | Max | Unit |
|--------------------------------------|-----------------------|---|-----|------|-----|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 200\text{ V}, I_E = 0$ | — | — | 5.0 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5\text{ V}, I_C = 0$ | — | — | 5.0 | μA |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 50\text{ mA}, I_B = 0$ | 200 | — | — | V |
| DC current gain | $h_{FE(1)}$ (Note) | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$ | 55 | — | 160 | |
| | $h_{FE(2)}$ | $V_{CE} = 5\text{ V}, I_C = 7\text{ A}$ | 35 | 70 | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 8\text{ A}, I_B = 0.8\text{ A}$ | — | 0.3 | 2.0 | V |
| Base-emitter voltage | V_{BE} | $V_{CE} = 5\text{ V}, I_C = 7\text{ A}$ | — | 1.0 | 1.5 | V |
| Transition frequency | f_T | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$ | — | 30 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 270 | — | pF |

Note: $h_{FE(1)}$ classification R: 55~110, O: 80~160

Marking







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20070701-EN

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