

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SC5198

Power Amplifier Applications

- High breakdown voltage: $V_{CEO} = 140\text{ V (min)}$
- Complementary to 2SA1941
- Suitable for use in 70-W high fidelity audio amplifier's output stage

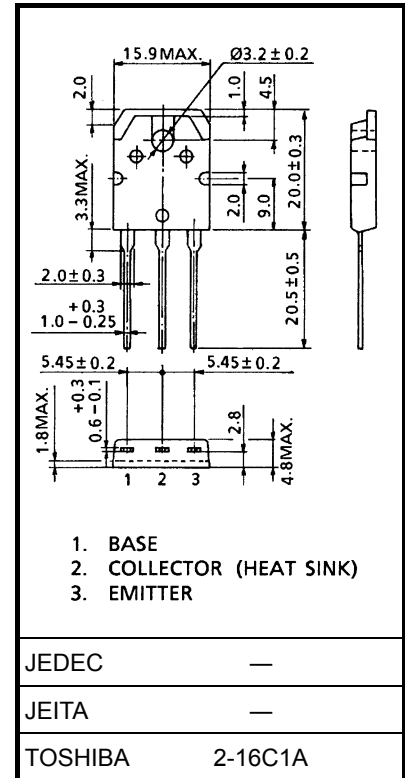
Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

| Characteristics | Symbol | Rating | Unit |
|---|-----------|------------|------------------|
| Collector-base voltage | V_{CBO} | 140 | V |
| Collector-emitter voltage | V_{CEO} | 140 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 10 | A |
| Base current | I_B | 1 | A |
| Collector power dissipation ($T_c = 25^\circ\text{C}$) | P_C | 100 | 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



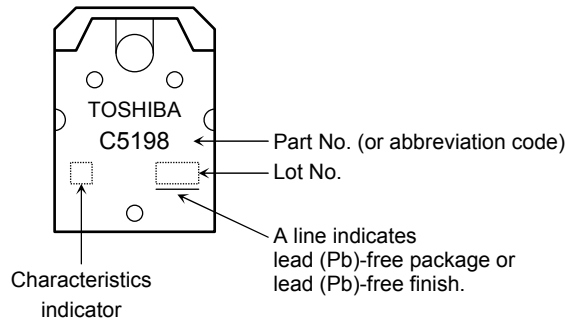
Weight: 4.7 g (typ.)

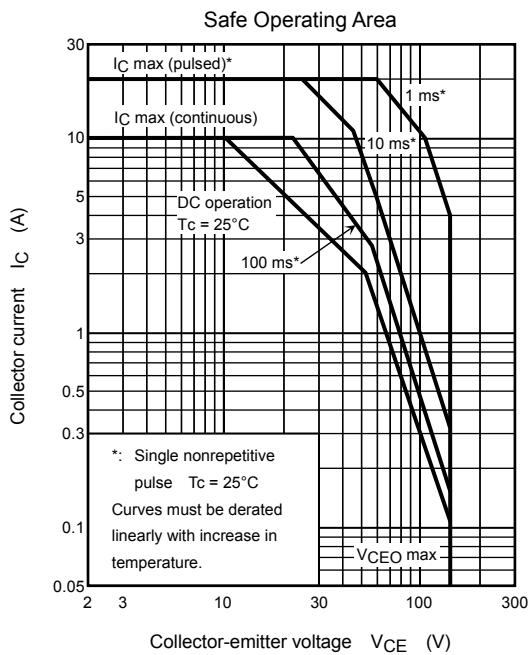
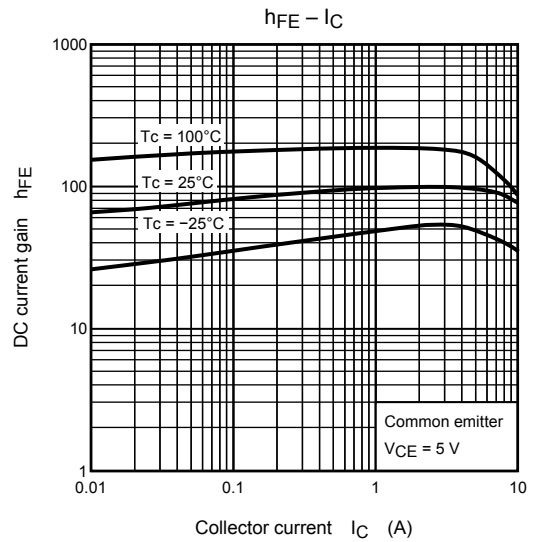
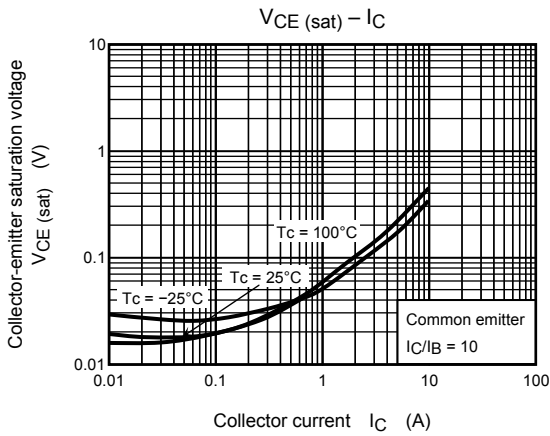
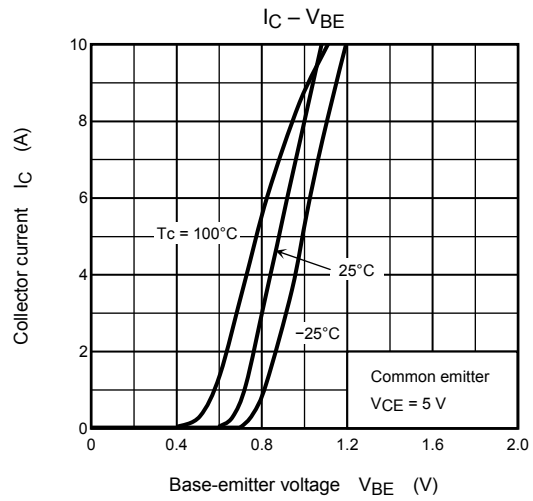
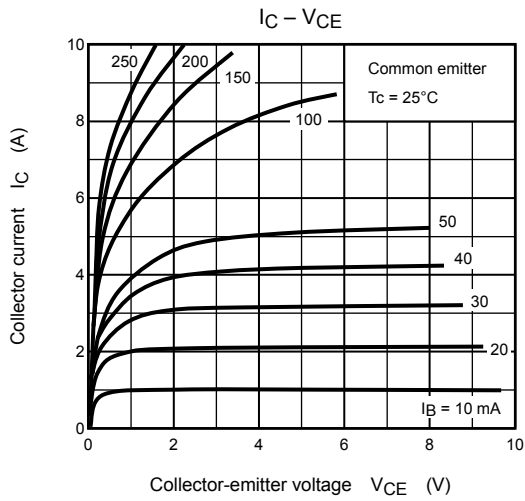
Electrical Characteristics (Tc = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|-----------------------|---|-----|------|-----|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 140\text{ V}, I_E = 0$ | — | — | 5.0 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5\text{ V}, I_C = 0$ | — | — | 5.0 | μA |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 50\text{ mA}, I_B = 0$ | 140 | — | — | V |
| DC current gain | $h_{FE(1)}$ (Note) | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$ | 55 | — | 160 | |
| | $h_{FE(2)}$ | $V_{CE} = 5\text{ V}, I_C = 5\text{ A}$ | 35 | 83 | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 7\text{ A}, I_B = 0.7\text{ A}$ | — | 0.3 | 2.0 | V |
| Base-emitter voltage | V_{BE} | $V_{CE} = 5\text{ V}, I_C = 5\text{ A}$ | — | 0.9 | 1.5 | V |
| Transition frequency | f_T | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$ | — | 30 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 170 | — | pF |

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

Marking





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20070701-EN

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