

TOSHIBA Transistor Silicon NPN Triple Diffused Type (Darlington power transistor)

2SD2386

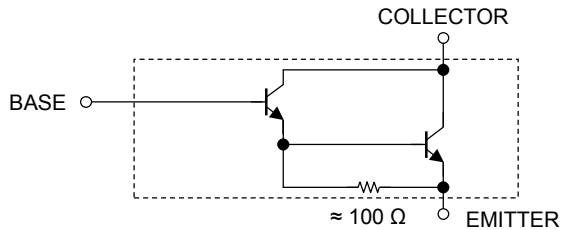
Power Amplifier Applications

- High breakdown voltage: $V_{CEO} = 140 \text{ V (min)}$
- Complementary to 2SB1557

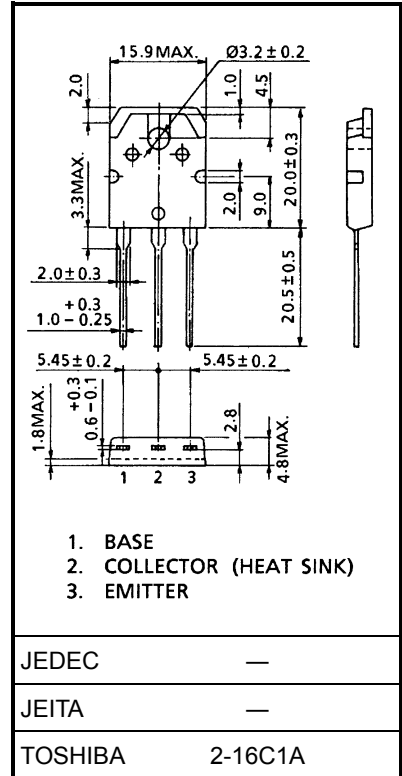
Maximum Ratings ($T_a = 25^\circ\text{C}$)

| 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 | 7 | A |
| Base current | I_B | 0.1 | A |
| Collector power dissipation ($T_c = 25^\circ\text{C}$) | P_C | 70 | W |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | -55 to 150 | $^\circ\text{C}$ |

Equivalent Circuit



Unit: mm



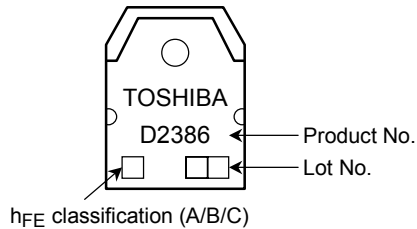
Weight: 4.7 g (typ.)

Electrical Characteristics (Ta = 25°C)

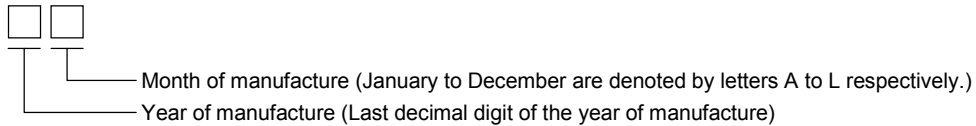
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|-----------------------|---|------|------|-------|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 140\text{ V}, I_E = 0$ | — | — | 5.0 | μA |
| Emitter cut-off current | 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) | $V_{CE} = 5\text{ V}, I_C = 6\text{ A}$ | 5000 | — | 30000 | |
| | $h_{FE(2)}$ | $V_{CE} = 5\text{ V}, I_C = 10\text{ A}$ | 2000 | — | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 6\text{ A}, I_B = 6\text{ mA}$ | — | — | 2.5 | V |
| Base-emitter voltage | V_{BE} | $V_{CE} = 5\text{ V}, I_C = 6\text{ A}$ | — | — | 3.0 | V |
| Transition frequency | f_T | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$ | — | 30 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 90 | — | pF |

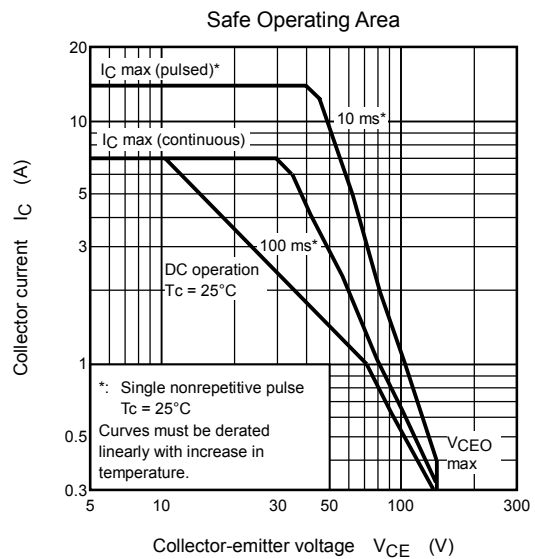
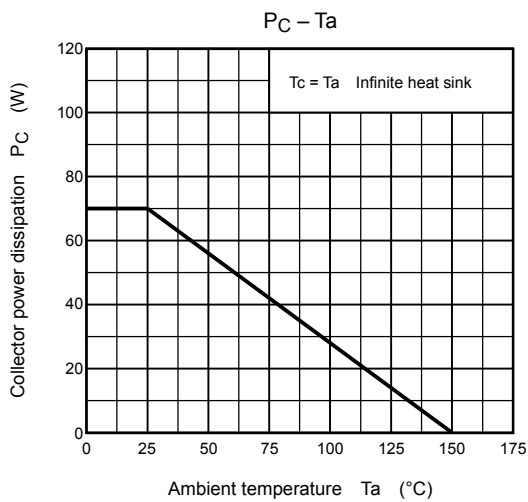
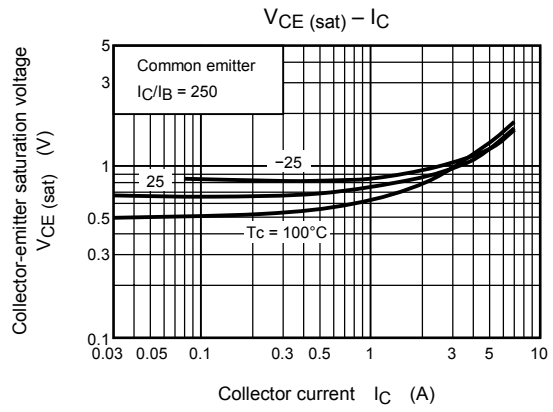
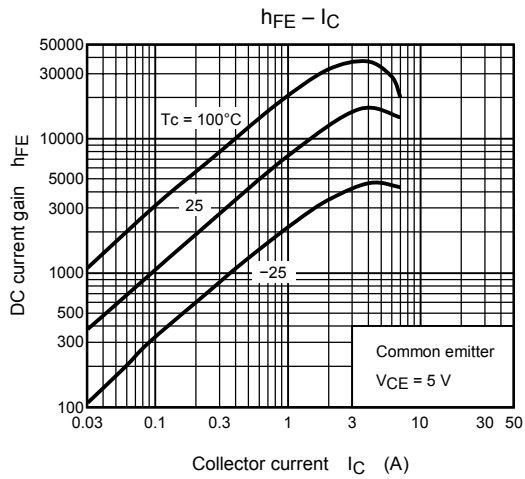
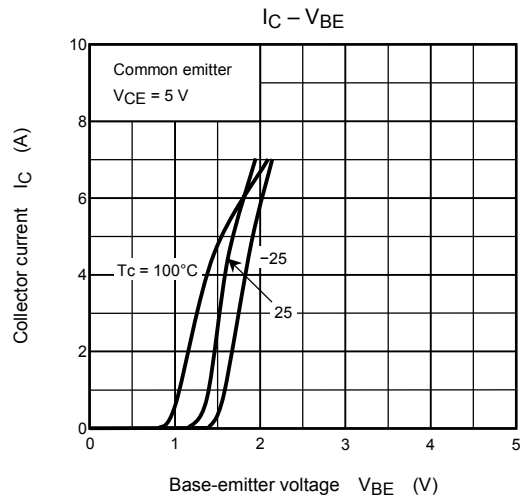
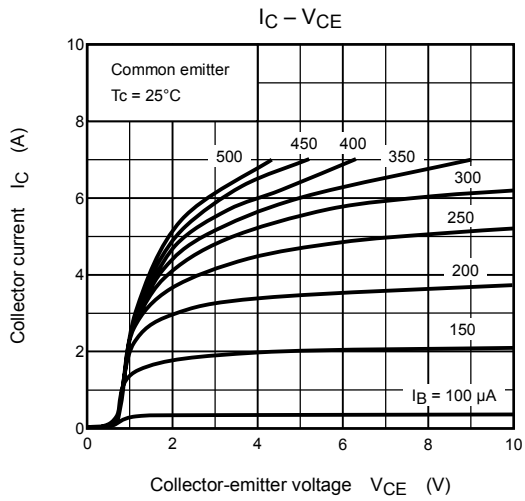
Note: $h_{FE(1)}$ classification A: 5000 to 12000, B: 9000 to 18000, C: 15000 to 30000

Marking



Explanation of Lot No.





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