

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC4207

Audio Frequency General Purpose Amplifier Applications

- Small package (dual type)
- High voltage and high current: $V_{CE0} = 50\text{ V}$, $I_C = 150\text{ mA}$ (max)
- High h_{FE} : $h_{FE} = 120\text{ to }700$
- Excellent h_{FE} linearity: $h_{FE}(I_C = 0.1\text{ mA})/h_{FE}(I_C = 2\text{ mA}) = 0.95$ (typ.)
- Complementary to 2SA1618

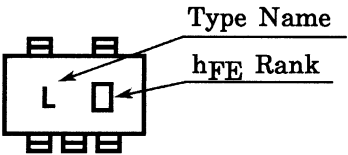
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$) (Q1, Q2 common)

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-------------------|------------|------------------|
| Collector-base voltage | V_{CBO} | 60 | V |
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 150 | mA |
| Base current | I_B | 30 | mA |
| Collector power dissipation | P_C (Note 1) | 300 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | -55 to 125 | $^\circ\text{C}$ |

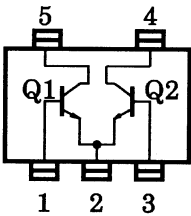
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

Note 1: Total rating

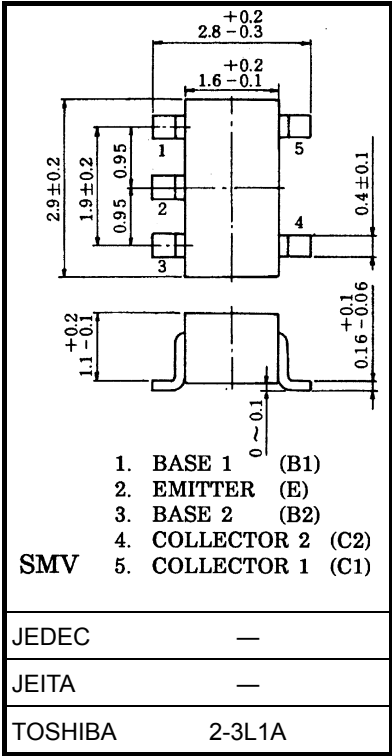
Marking



Equivalent Circuit (top view)



Unit: mm



Weight: 0.014 g (typ.)

Start of commercial production
1987-05

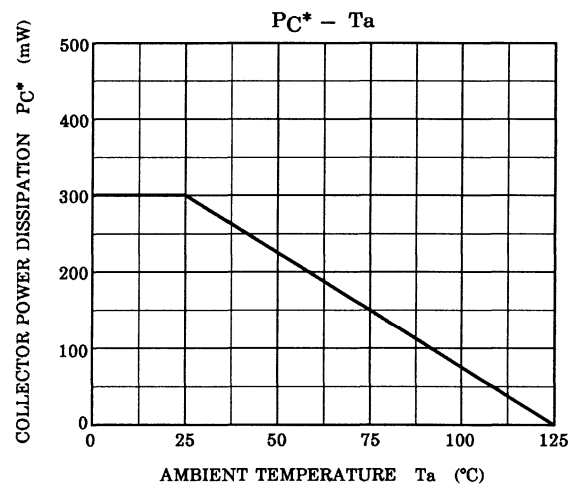
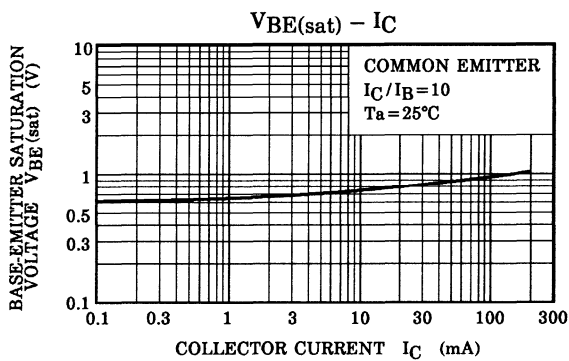
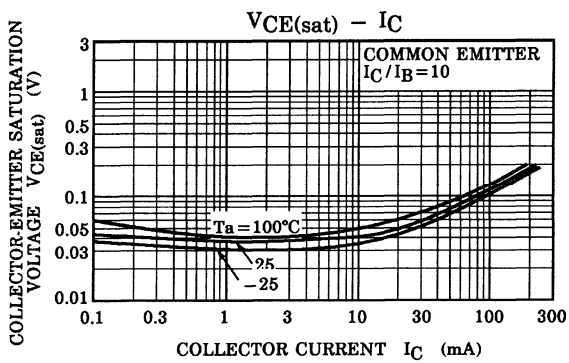
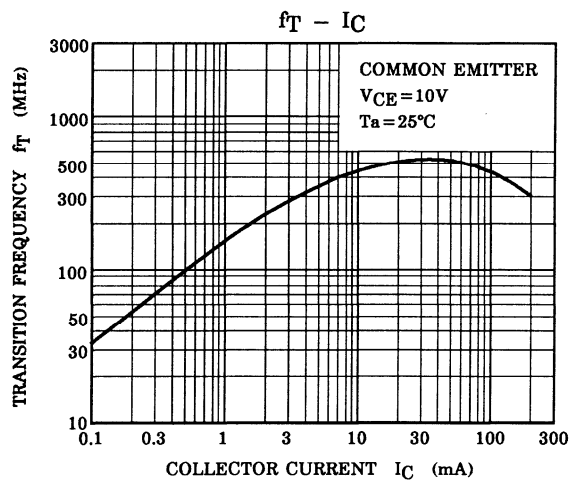
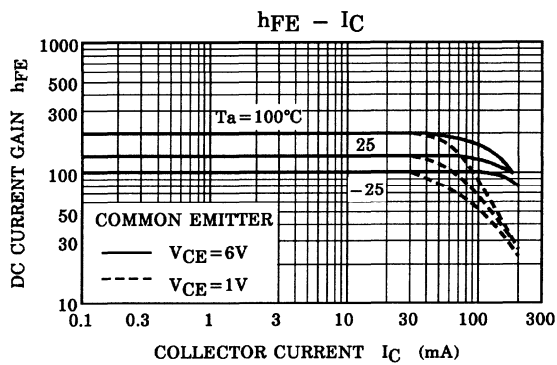
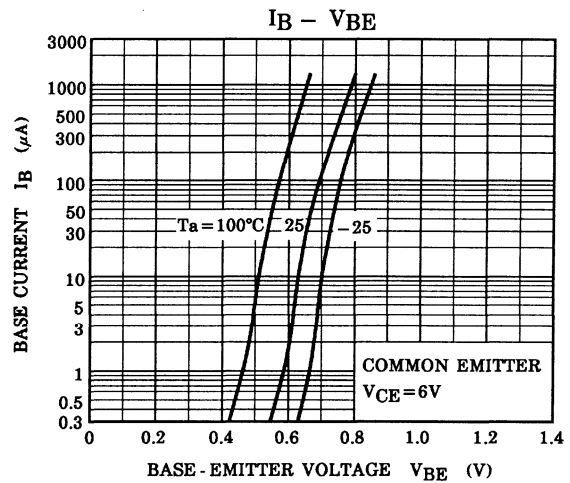
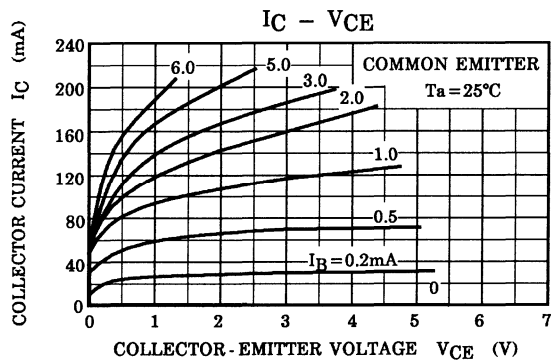
Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|----------------------|---|-----|------|------|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 60\text{ V}, I_E = 0$ | — | — | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5\text{ V}, I_C = 0$ | — | — | 0.1 | μA |
| DC current gain | h_{FE} (Note 2) | $V_{CE} = 6\text{ V}, I_C = 2\text{ mA}$ | 120 | — | 700 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100\text{ mA}, I_B = 10\text{ mA}$ | — | 0.1 | 0.25 | V |
| Transition frequency | f_T | $V_{CE} = 10\text{ V}, I_C = 1\text{ mA}$ | 80 | — | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 2 | 3.5 | pF |

Note 2: h_{FE} classification Y (Y): 120 to 240, GR (G): 200 to 400, BL (L): 350 to 700

() marking symbol

(Q1, Q2 common)



*: Total rating

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