

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

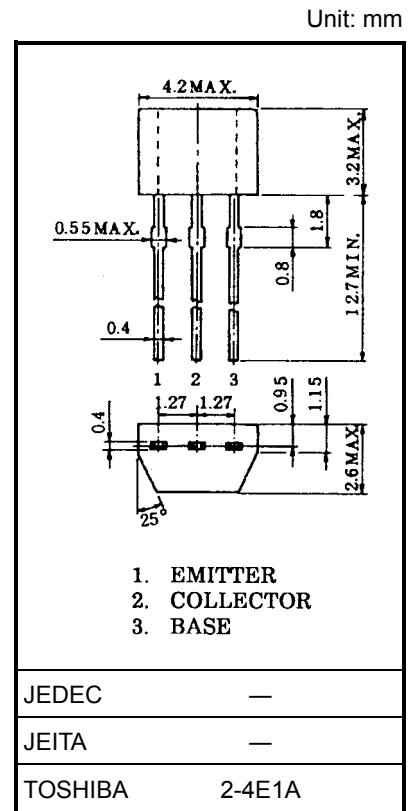
2SC2459

Audio Amplifier Applications

- High breakdown voltage: $V_{CEO} = 120\text{ V (max)}$
- High DC current gain: $h_{FE} = 200\sim 700$
- Excellent h_{FE} linearity: $h_{FE}(I_C = 0.1\text{ mA})/h_{FE}(I_C = 2\text{ mA}) = 0.95\text{ (typ.)}$
- Low noise: $NF = 1\text{ dB (typ.)}$, 10 dB (max)
- Complementary to 2SA1049.
- Small package.

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

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|---------|------------------|
| Collector-base voltage | V_{CBO} | 120 | V |
| Collector-emitter voltage | V_{CEO} | 120 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 100 | mA |
| Base current | I_B | 20 | mA |
| Collector power dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | -55~125 | $^\circ\text{C}$ |



Weight: 0.13 g (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------------|--|-----|------|-----|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 120\text{ V}, I_E = 0$ | — | — | 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) | $V_{CE} = 6\text{ V}, I_C = 2\text{ mA}$ | 200 | — | 700 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 10\text{ mA}, I_B = 1\text{ mA}$ | — | — | 0.3 | V |
| Transition frequency | f_T | $V_{CE} = 6\text{ V}, I_C = 1\text{ mA}$ | — | 100 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 3.0 | — | pF |
| Noise figure | NF | $V_{CE} = 6\text{ V}, I_C = 0.1\text{ mA},$ $f = 1\text{ kHz}, R_G = 10\text{ k}\Omega$ | — | 1.0 | 10 | dB |

Note: h_{FE} classification GR: 200~400, BL: 350~700

