

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1586

Audio Frequency General Purpose Amplifier Applications

- AEC-Q101 Qualified (Note1)
- High voltage and high current: $V_{CEO} = -50\text{ V}$, $I_C = -150\text{ mA}$ (max)
- Excellent h_{FE} linearity: $h_{FE}(I_C = -0.1\text{ mA}) / h_{FE}(I_C = -2\text{ mA}) = 0.95$ (typ.)
- High h_{FE} : $h_{FE} = 70$ to 400
- Low noise: $NF = 1\text{ dB}$ (typ.), 10 dB (max)
- Complementary to 2SC4116
- Small package

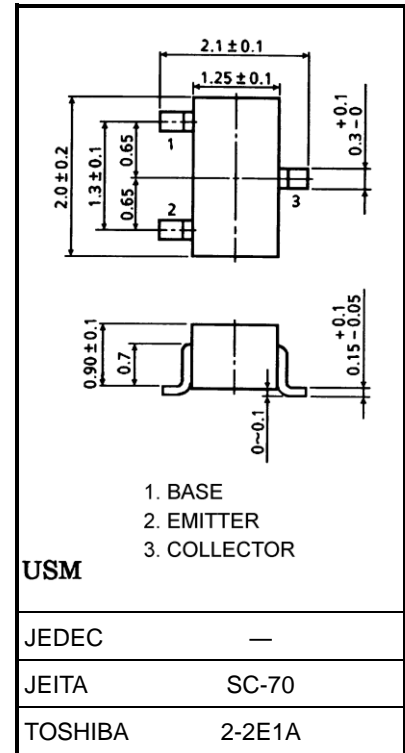
Note1: For detail information, please contact to our sales.

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

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|------------|------------------|
| Collector-base voltage | V_{CBO} | -50 | 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 | 100 | 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).

Unit: mm



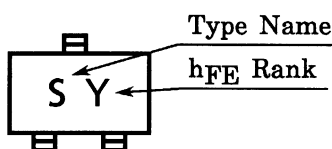
Weight: 0.006 g (typ.)

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

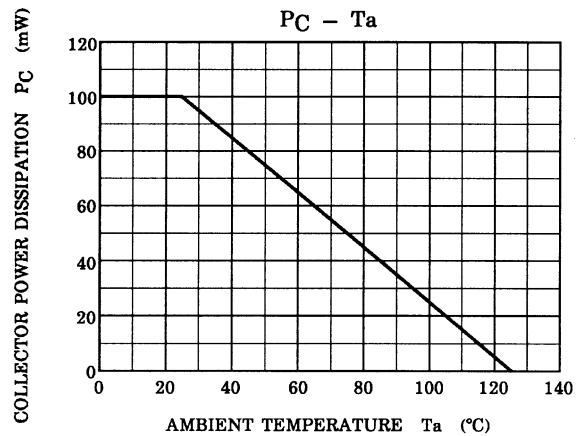
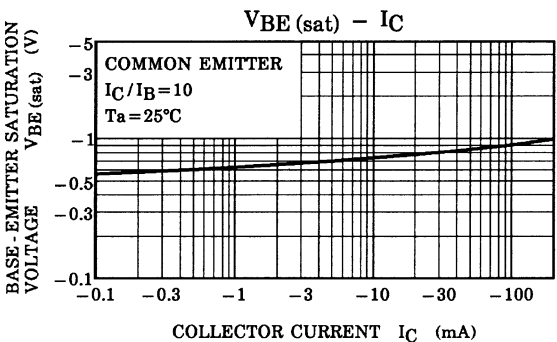
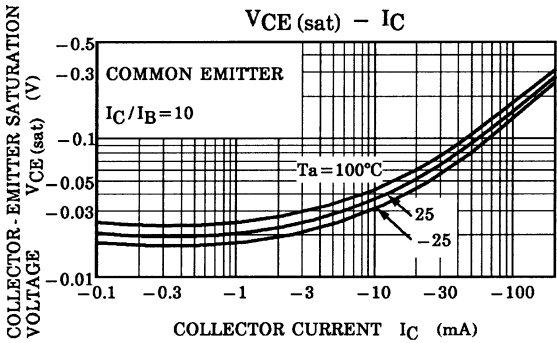
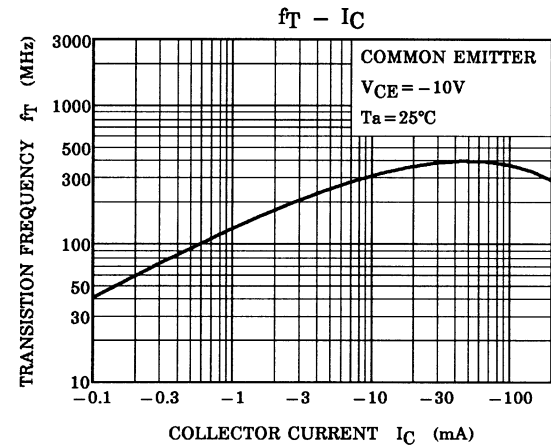
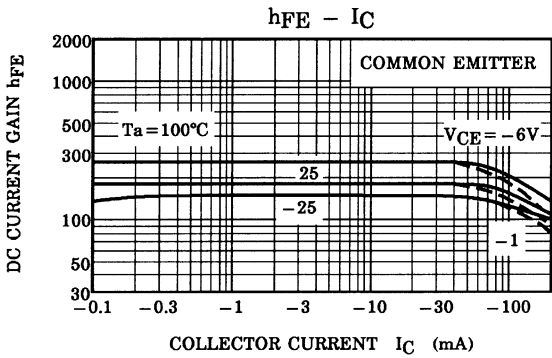
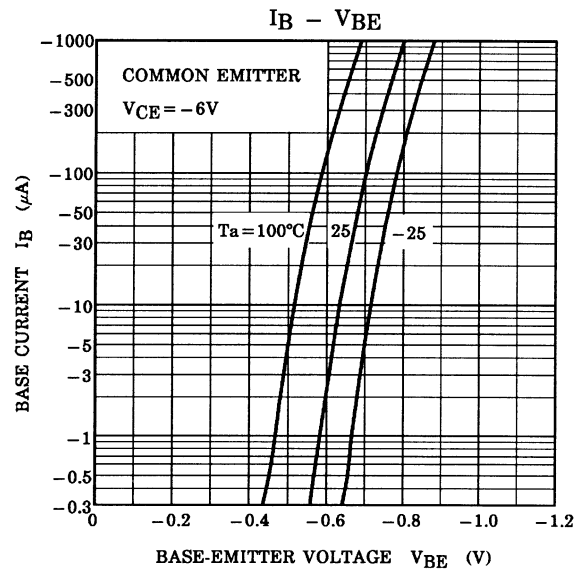
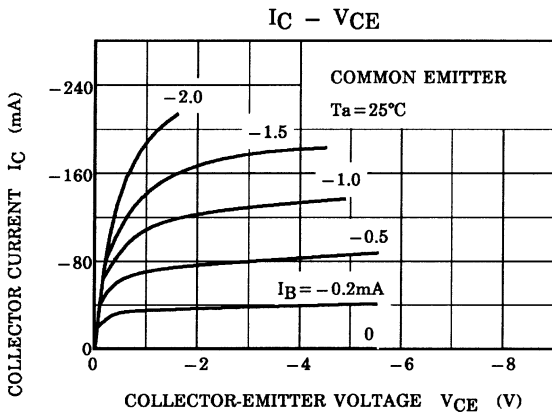
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------------|--|-----|------|------|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = -50\text{ V}$, $I_E = 0$ | — | — | -0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5\text{ V}$, $I_C = 0$ | — | — | -0.1 | μA |
| DC current gain | h_{FE} (Note) | $V_{CE} = -6\text{ V}$, $I_C = -2\text{ mA}$ | 70 | — | 400 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$ | — | -0.1 | -0.3 | V |
| Transition frequency | f_T | $V_{CE} = -10\text{ V}$, $I_C = -1\text{ mA}$ | 80 | — | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$ | — | 4 | 7 | 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 O (O) : 70 to 140, Y (Y) : 120 to 240, GR (G) : 200 to 400
() marking symbol

Marking



Start of commercial production
1987-01



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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.