

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1588

Audio Frequency Low Power Amplifier Applications
Driver Stage Amplifier Applications
Switching Applications

- AEC-Q101 Qualified (Note1)
- Excellent h_{FE} linearity: $h_{FE(2)} = 25$ (min)
at $V_{CE} = -6$ V, $I_C = -400$ mA
- Complementary to 2SC4118

Note1: For detail information, please contact our sales.

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

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|--------------------|------------|------------------|
| Collector-base voltage | V_{CBO} | -35 | V |
| Collector-emitter voltage | V_{CEO} | -30 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Collector current | I_C | -500 | mA |
| Base current | I_B | -50 | mA |
| Collector power dissipation | P_C (Note 2, 4) | 200 | mW |
| | P_C (Note 3) | 100 | |
| Junction temperature | T_j (Note 2) | 150 | $^\circ\text{C}$ |
| | T_j (Note 3) | 125 | |
| Storage temperature range | T_{stg} (Note 2) | -55 to 150 | $^\circ\text{C}$ |
| | T_{stg} (Note 3) | -55 to 125 | |

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.

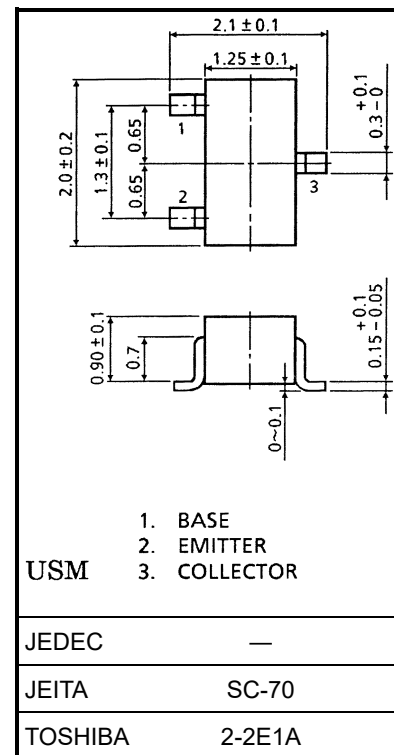
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 2: For devices with the ordering part number ending in LF(T).

Note 3: For devices with the ordering part number in other than LF(T).

Note 4: Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.5 mm² × 3)

Unit: mm



Weight: 0.006 g (typ.)

Start of commercial production
1987-01

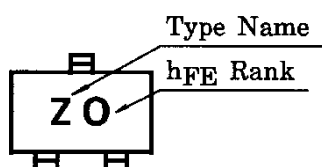
Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|-----------------------|---|-----|------|-------|------|
| Collector cut-off current | ICBO | V _{CB} = -35 V, I _E = 0 A | — | — | -0.1 | μA |
| Emitter cut-off current | IEBO | V _{EB} = -5 V, I _C = 0 A | — | — | -0.1 | μA |
| DC current gain (Note) | hFE (1) | V _{CE} = -1 V, I _C = -100 mA | 70 | — | 400 | — |
| | hFE (2) | V _{CE} = -6 V, I _C = -400 mA | 25 | — | — | |
| Collector-emitter saturation voltage | V _{CE (sat)} | I _C = -100 mA, I _B = -10 mA | — | -0.1 | -0.25 | V |
| Base-emitter voltage | V _{BE} | V _{CE} = -1 V, I _C = -100 mA | — | -0.8 | -1.0 | V |
| Transition frequency | f _T | V _{CE} = -6 V, I _C = -20 mA | — | 200 | — | MHz |
| Collector output capacitance | C _{ob} | V _{CB} = -6 V, I _E = 0 A, f = 1 MHz | — | 13 | — | pF |

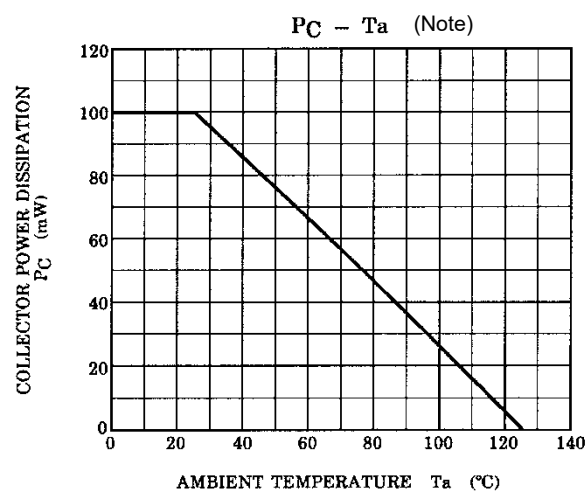
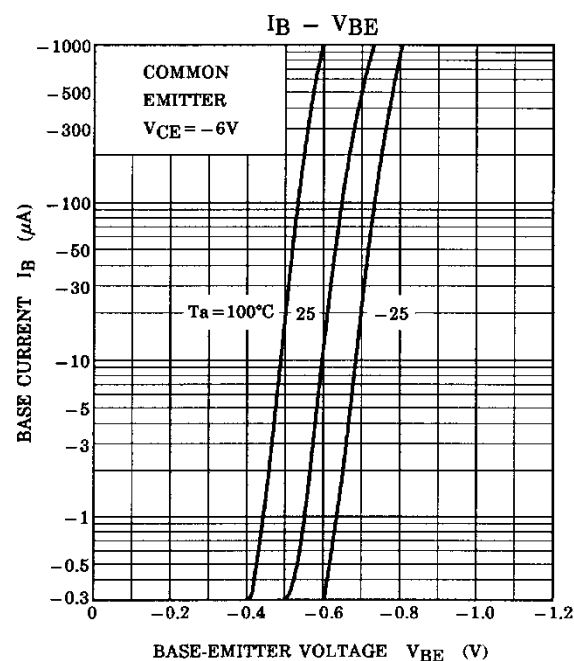
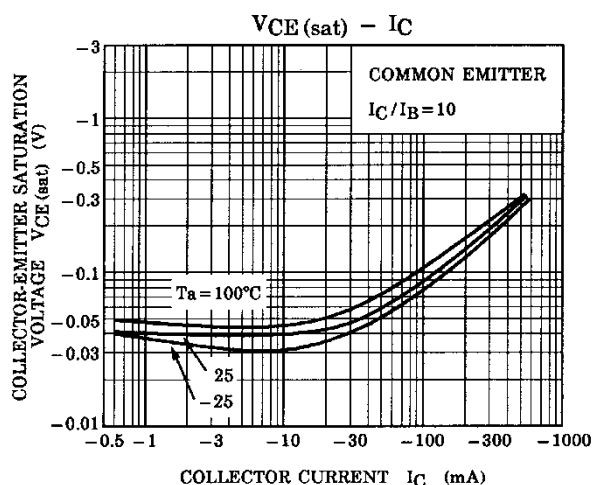
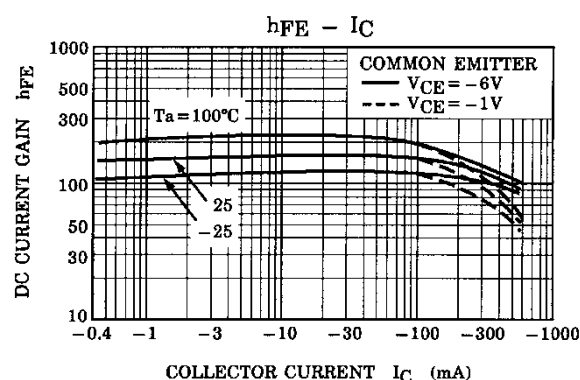
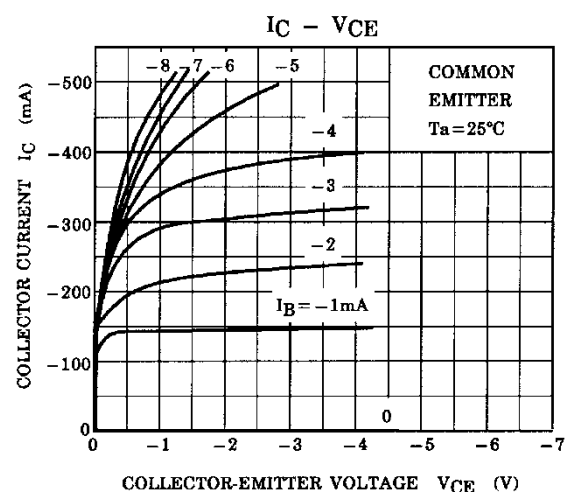
Note: hFE (1) classification O(O): 70~140, Y(Y): 120~240, GR(G): 200~400 () Marking Symbol

hFE (2) classification O: 25 (min), Y: 40 (min), GR: 75 (min)

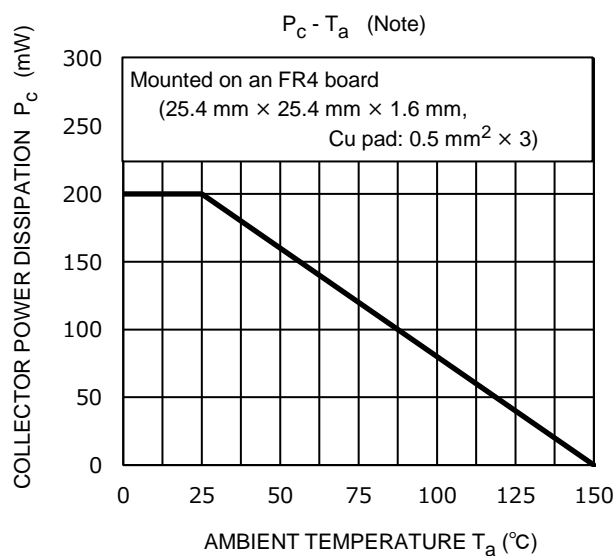
Marking



Characteristics Curves



Note: Reference only with T_j of 125°C .



Note: Reference only with T_j of 150°C .

The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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