

TOSHIBA Transistor Silicon PNP Epitaxial (PCT process)

2SA1588

Audio Frequency Low Power Amplifier Applications

Driver Stage Amplifier Applications

Switching Applications

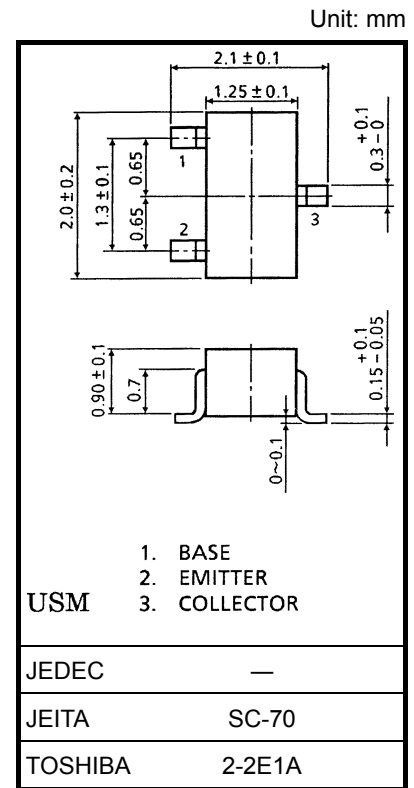
- Excellent h_{FE} linearity: $h_{FE} (2) = 25$ (min)
at $V_{CE} = -6$ V, $I_C = -400$ mA
- Complementary to 2SC4118

Absolute Maximum Ratings (Ta = 25°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 | 100 | mW |
| Junction temperature | T_j | 125 | °C |
| Storage temperature range | T_{stg} | -55 to 125 | °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).



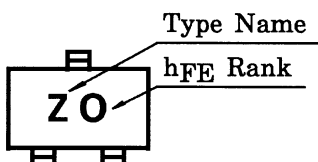
Weight: 0.006 g (typ.)

Electrical Characteristics (Ta = 25°C)

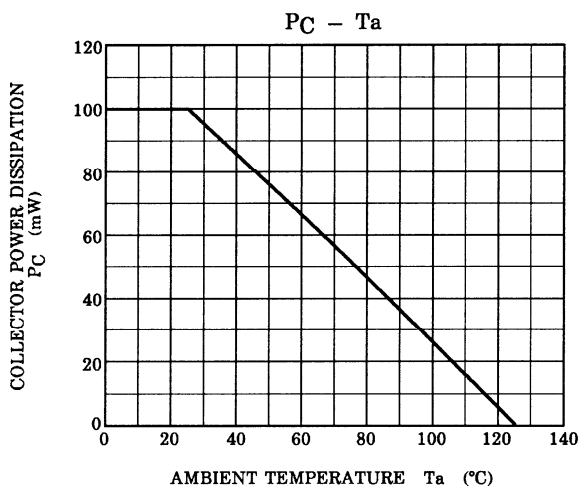
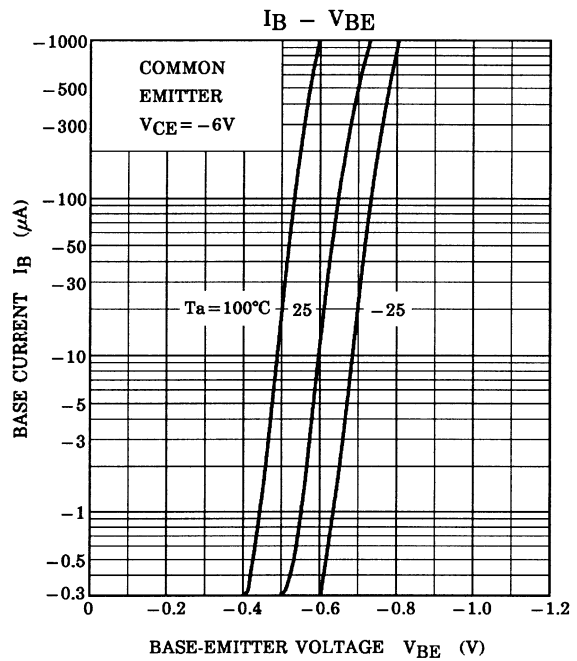
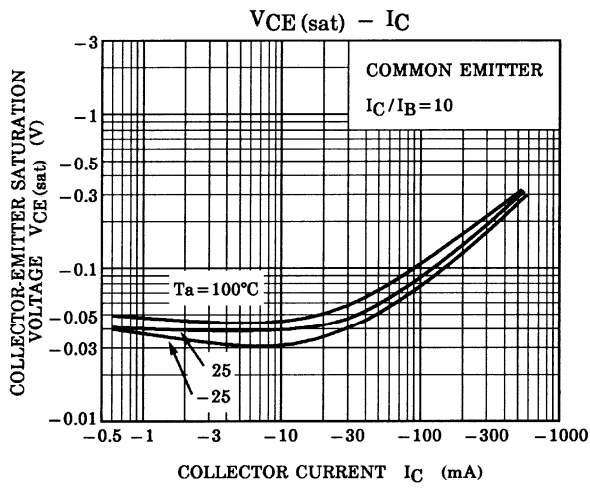
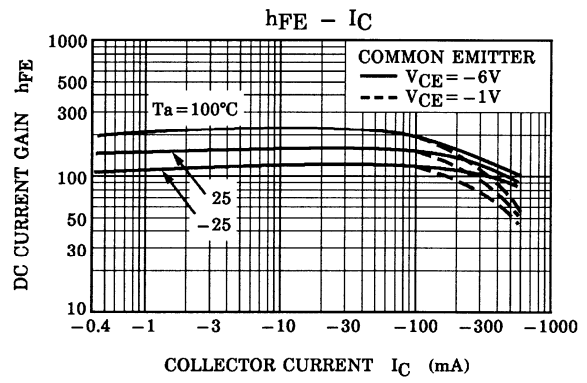
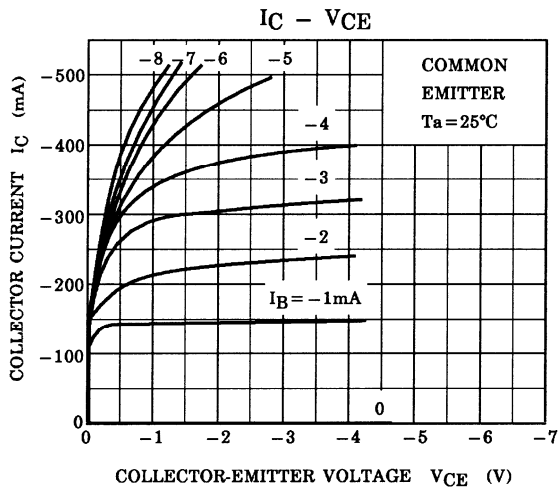
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|----------------|--|-----|------|-------|---------|
| Collector cut-off current | I_{CBO} | $V_{CB} = -35$ V, $I_E = 0$ | — | — | -0.1 | μ A |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5$ V, $I_C = 0$ | — | — | -0.1 | μ A |
| DC current gain (Note) | $h_{FE} (1)$ | $V_{CE} = -1$ V, $I_C = -100$ mA | 70 | — | 400 | |
| | $h_{FE} (2)$ | $V_{CE} = -6$ 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, $I_E = 0$, $f = 1$ MHz | — | 13 | — | pF |

Note: $h_{FE} (1)$ classification O(O): 70~140, Y(Y): 120~240, GR(G): 200~400 () Marking Symbol
 $h_{FE} (2)$ classification O: 25 (min), Y: 40 (min), GR: 75 (min)

Marking



Start of commercial production
1987-01



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