

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1314

Strobe Flash Applications

Audio Power Applications

- High DC current gain and excellent linearity
 : $h_{FE(1)} = 140$ to 600 ($V_{CE} = -1$ V, $I_C = -0.5$ A)
 : $h_{FE(2)} = 60$ (min), 120 (typ.), ($V_{CE} = -1$ V, $I_C = -4$ A)
- Low saturation voltage
 : $V_{CE(sat)} = -0.5$ V (max) ($I_C = -2$ A, $I_B = -50$ mA)
- Small package
- Complementary to 2SC2982

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

| Characteristics | | Symbol | Rating | Unit |
|-----------------------------|--------------------|-------------------|------------|------------------|
| Collector-base voltage | | V_{CBO} | -20 | V |
| Collector-emitter voltage | | V_{CEO} | -10 | V |
| Emitter-base voltage | | V_{EBO} | -6 | V |
| Collector current | DC | I_C | -2 | A |
| | Pulsed (Note 1) | I_{CP} | -4 | |
| Base current | | I_B | -2 | A |
| Collector power dissipation | | P_C | 500 | mW |
| | | P_C (Note 2) | 1000 | |
| Junction temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature range | | T_{stg} | -55 to 150 | $^\circ\text{C}$ |

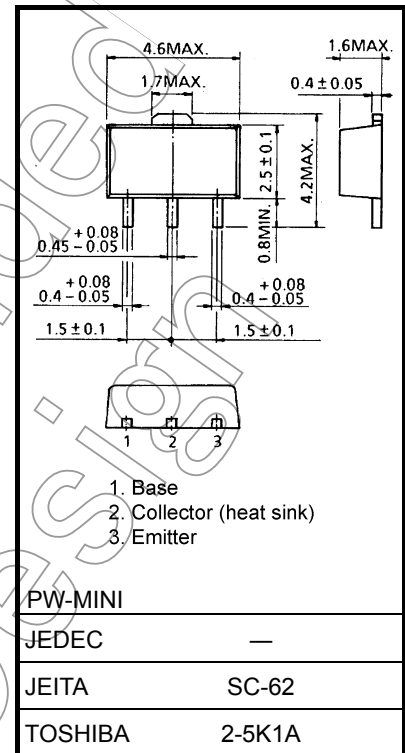
Note 1: Pulse test: pulse width = 10 ms (max), duty cycle = 30% (max)

Note 2: Mounted on a ceramic substrate (250 mm² × 0.8 mm t)

Note 3: 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



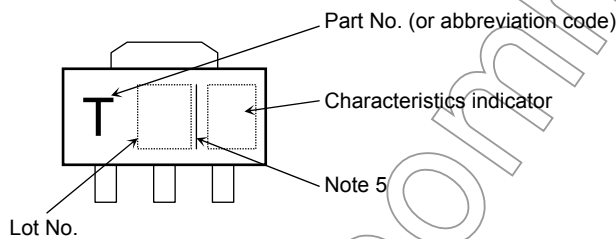
Weight: 0.05 g (typ.)

Electrical Characteristics (T_a = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|---------------------------------|--|-----|-------|------|------|
| Collector cut-off current | I _{CB0} | V _{CB} = -20 V, I _E = 0 | — | — | -100 | nA |
| Emitter cut-off current | I _{E0} | V _{EB} = -6 V, I _C = 0 | — | — | -100 | nA |
| Collector-emitter breakdown voltage | V _{(BR) CEO} | I _C = -10 mA, I _B = 0 | -10 | — | — | V |
| Emitter-base breakdown voltage | V _{(BR) EBO} | I _E = -1 mA, I _C = 0 | -6 | — | — | V |
| DC current gain | h _{FE} (1) (Note 4) | V _{CE} = -1 V, I _C = -0.5 A | 140 | — | 600 | |
| | h _{FE} (2) | V _{CE} = -1 V, I _C = -4 A | 60 | 120 | — | |
| Collector-emitter saturation voltage | V _{CE (sat)} | I _C = -2 A, I _B = -50 mA | — | -0.2 | -0.5 | V |
| Base-emitter voltage | V _{BE} | V _{CE} = -1 V, I _C = -2 A | — | -0.83 | -1.5 | V |
| Transition frequency | f _T | V _{CE} = -1 V, I _C = -0.5 A | — | 140 | — | MHz |
| Collector output capacitance | C _{ob} | V _{CB} = -10 V, I _E = 0, f = 1 MHz | — | 50 | — | pF |

Note 4: h_{FE} (1) classification A: 140 to 280, B: 200 to 400, C: 300 to 600

Marking

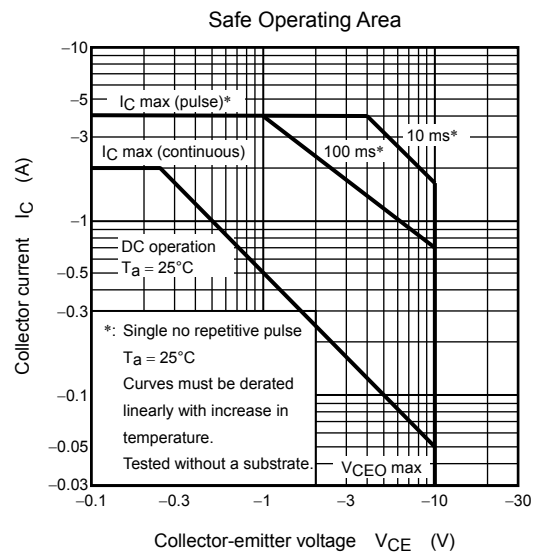
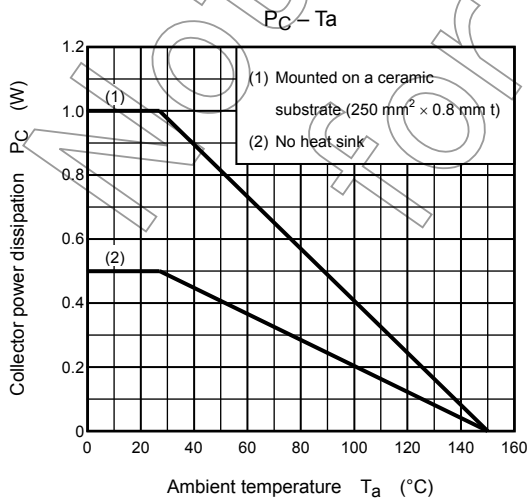
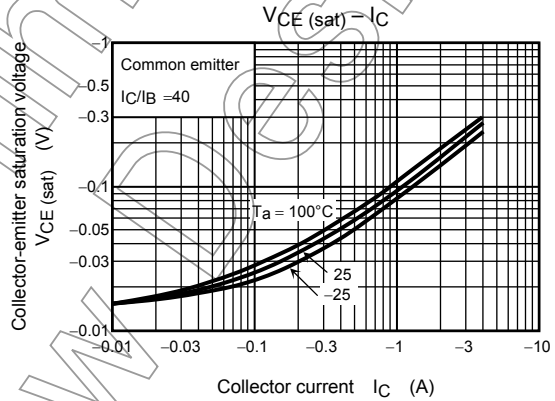
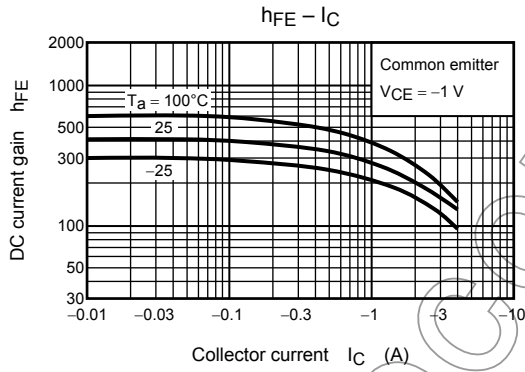
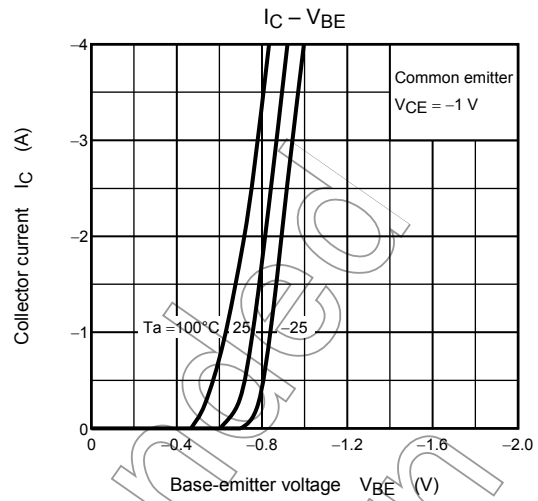
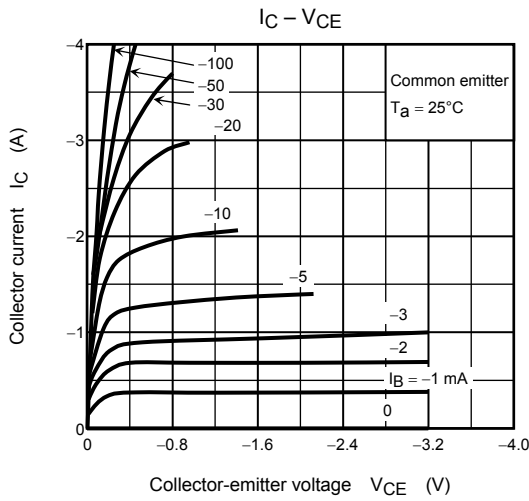


Note 5: A line beside a Lot No. identifies the indication of product Labels.

Without a line: [[Pb]]/INCLUDES > MCV

With a line: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



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