

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC3072

Strobe Flash Applications
 Medium Power Amplifier Applications

- High DC current gain
 : $h_{FE} = 140$ to 450 ($V_{CE} = 2$ V, $I_C = 0.5$ A)
 : $h_{FE} = 70$ (min) ($V_{CE} = 2$ V, $I_C = 4$ A)
- Low collector saturation voltage
 : $V_{CE(sat)} = 1.0$ V (max) ($I_C = 4$ A, $I_B = 0.1$ A)
- High power dissipation
 : $P_C = 10$ W ($T_c = 25^\circ\text{C}$), $P_C = 1.0$ W ($T_a = 25^\circ\text{C}$)

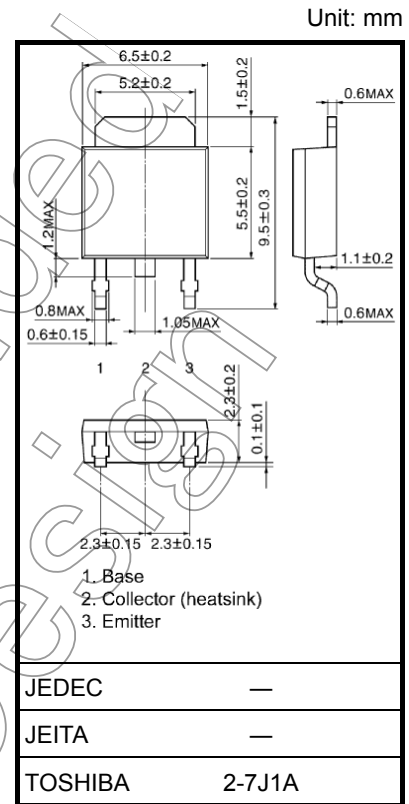
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Characteristics | | Symbol | Rating | Unit |
|-----------------------------|--------------------------|-----------|------------|------------------|
| Collector-base voltage | | V_{CBO} | 50 | V |
| Collector-emitter voltage | | V_{CES} | 40 | V |
| | | V_{CEO} | 20 | |
| Emitter-base voltage | | V_{EBO} | 8 | V |
| Collector current | DC | I_C | 5 | A |
| | Pulse (Note 1) | I_{CP} | 8 | |
| Base current | | I_B | 0.5 | A |
| Collector power dissipation | $T_a = 25^\circ\text{C}$ | P_C | 1.0 | W |
| | $T_c = 25^\circ\text{C}$ | | 10 | |
| 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: 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).



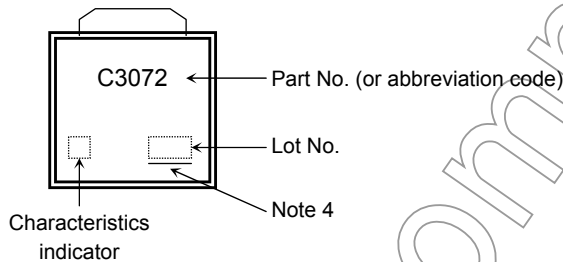
Weight: 0.36 g (typ.)

Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------------------|---|-----|------|-----|------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 40\text{ V}, I_E = 0$ | — | — | 100 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 8\text{ V}, I_C = 0$ | — | — | 100 | nA |
| Collector-emitter breakdown voltage | $V_{(BR) CEO}$ | $I_C = 10\text{ mA}, I_B = 0$ | 20 | — | — | V |
| DC current gain | $h_{FE (1)}$ (Note 3) | $V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$ | 140 | — | 450 | |
| | $h_{FE (2)}$ | $V_{CE} = 2\text{ V}, I_C = 4\text{ A}$ | 70 | — | — | |
| Collector emitter saturation voltage | $V_{CE (sat)}$ | $I_C = 4\text{ A}, I_B = 0.1\text{ A}$ | — | — | 1.0 | V |
| Base-emitter voltage | V_{BE} | $V_{CE} = 2\text{ V}, I_C = 4\text{ A}$ | — | — | 1.5 | V |
| Transition frequency | f_T | $V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$ | — | 100 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 40 | — | pF |

Note 3: $h_{FE (1)}$ classification A: 140 to 240, B: 200 to 330, C: 300 to 450

Marking

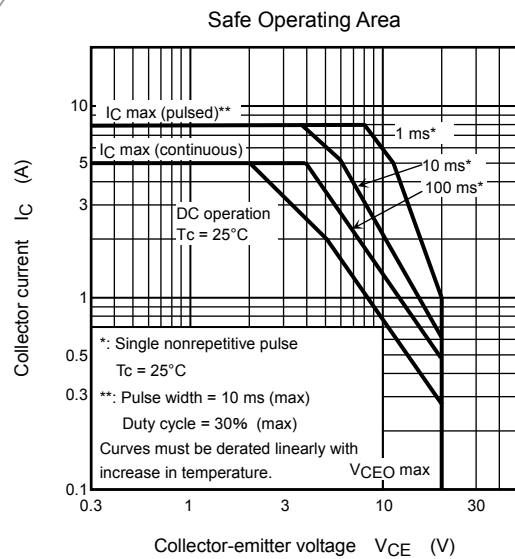
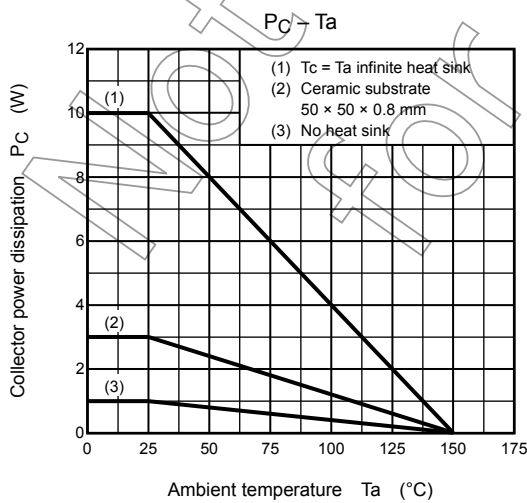
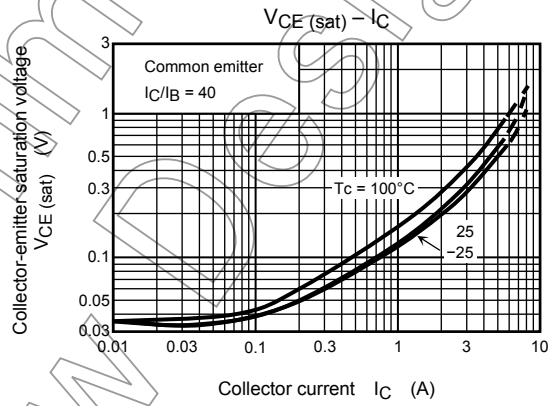
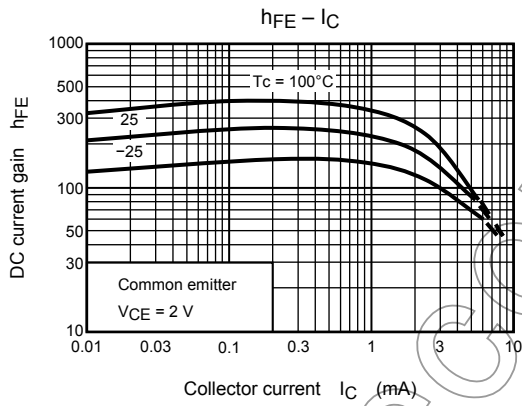
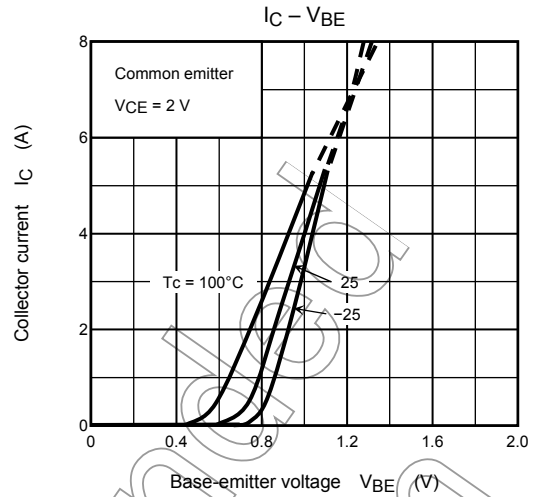
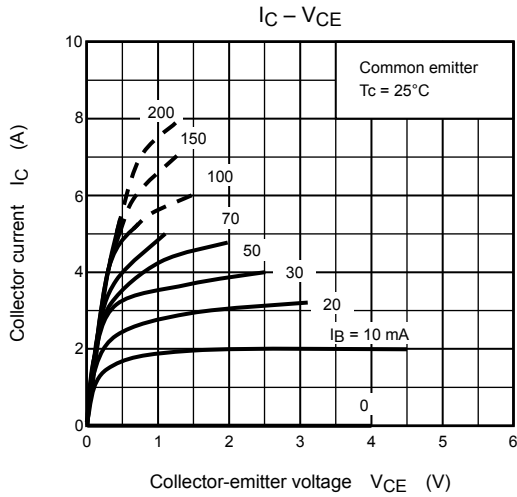


Note 4: A line under a Lot No. identifies the indication of product Labels.

Not underlined: [[Pb]]/INCLUDES > MCV

Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

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