

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC4681

Strobe Flash Applications
Medium Power Amplifier Applications

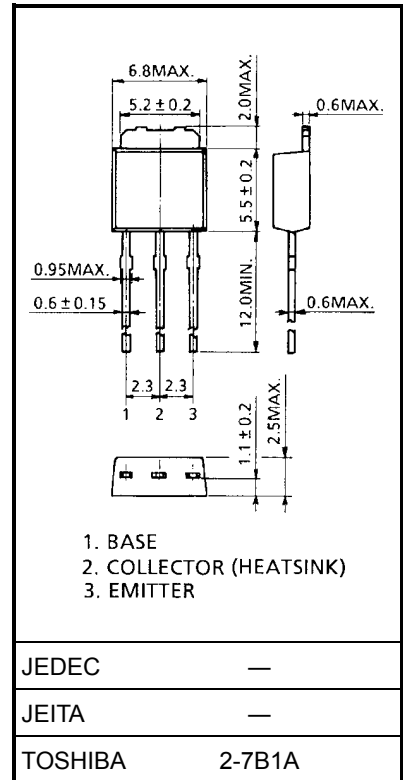
- Excellent h_{FE} linearity
: $h_{FE} (1) = 200$ to 600 ($V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$)
: $h_{FE} (2) = 140$ (min), 200 (typ.) ($V_{CE} = 2\text{ V}$, $I_C = 3\text{ A}$)
- Low collector saturation voltage
: $V_{CE}(\text{sat}) = 0.5\text{ V}$ (max) ($I_C = 3\text{ A}$, $I_B = 60\text{ mA}$)
- Complementary to 2SA1802

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

| Characteristics | | Symbol | Rating | Unit |
|-----------------------------|--------------------------|-----------|------------|------------------|
| Collector-base voltage | | V_{CBO} | 30 | V |
| Collector-emitter voltage | | V_{CES} | 30 | V |
| | | V_{CEO} | 10 | |
| Emitter-base voltage | | V_{EBO} | 6 | V |
| Collector current | DC | I_C | 3 | A |
| | Pulse (Note) | I_{CP} | 6 | |
| 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: Pulse test: Pulse width = 10 ms (max), duty cycle = 30% (max)

Unit: mm

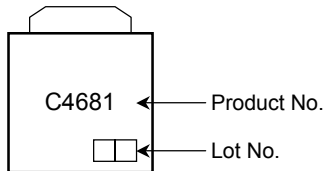


Weight: 0.36 g (typ.)

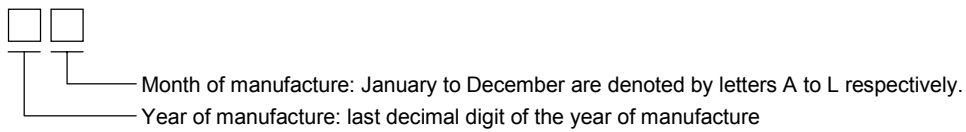
Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|----------------|---|-----|------|-----|------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 30\text{ V}, I_E = 0$ | — | — | 100 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 6\text{ V}, I_C = 0$ | — | — | 100 | nA |
| Collector-emitter breakdown voltage | V_{CEO} | $I_C = 10\text{ mA}, I_B = 0$ | 10 | — | — | V |
| DC current gain | $h_{FE} (1)$ | $V_{CE} = 20\text{ V}, I_C = 0.5\text{ A}$ | 200 | — | 600 | |
| | $h_{FE} (2)$ | $V_{CE} = 2\text{ V}, I_C = 3\text{ A}$ | 140 | 200 | — | |
| Collector-emitter saturation voltage | $V_{CE} (sat)$ | $I_C = 3\text{ A}, I_B = 60\text{ mA}$ | — | 0.33 | 0.5 | V |
| Base-emitter voltage | V_{BE} | $V_{CE} = 2\text{ V}, I_C = 3\text{ A}$ | — | 0.92 | 1.2 | V |
| Transition frequency | f_T | $V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$ | — | 150 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 27 | — | pF |

Marking



Explanation of Lot No.



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