

TOSHIBA Transistor Silicon PNP Epitaxial Type

# 2SA1802

Strobe Flash Applications

Medium Power Amplifier Applications

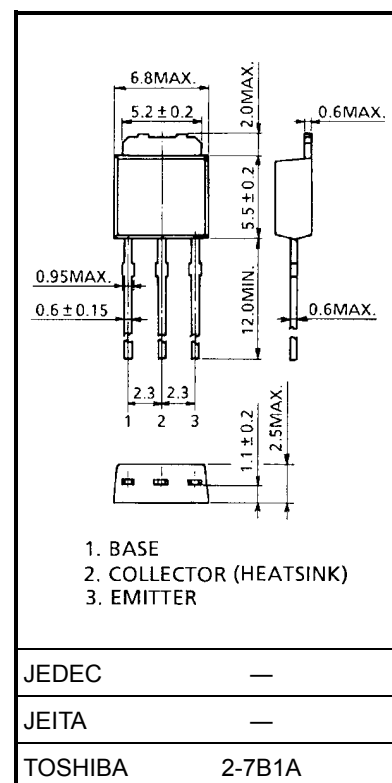
Unit: mm

- Excellent  $h_{FE}$  linearity  
:  $h_{FE}(1) = 200$  to  $600$  ( $V_{CE} = -2$  V,  $I_C = -0.5$  A)  
:  $h_{FE}(2) = 140$  (min),  $200$  (typ.) ( $V_{CE} = -2$  V,  $I_C = -3$  A)
- Low collector saturation voltage  
:  $V_{CE(sat)} = -0.5$  V (max) ( $I_C = -3$  A,  $I_B = -60$  mA)
- Complementary to 2SC4681

## 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                |
|                             | Pulsed<br>(Note 1)       | $I_{CP}$  | -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 1: Pulse test: Pulse width = 10 ms (max), duty cycle = 30% (max)

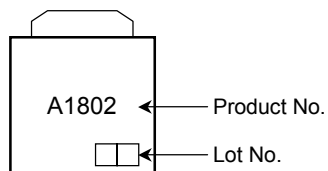


Weight: 0.36 g (typ.)

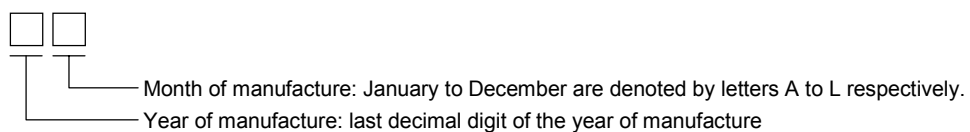
## Electrical Characteristics (Ta = 25°C)

| Characteristics                      | Symbol        | Test Condition                                     | Min | Typ.  | Max   | Unit |
|--------------------------------------|---------------|--|-----|-------|-------|------|
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -20\text{ V}, I_E = 0$                   | —   | —     | -100  | nA   |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -6\text{ V}, I_C = 0$                    | —   | —     | -100  | nA   |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -10\text{ mA}, I_B = 0$                     | -10 | —     | —     | V    |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$        | 200 | —     | 600   |      |
|                                      | $h_{FE(2)}$   | $V_{CE} = -2\text{ V}, I_C = -3\text{ A}$          | 140 | 200   | —     |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -3\text{ A}, I_B = -60\text{ mA}$           | —   | -0.25 | -0.50 | V    |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE} = -2\text{ V}, I_C = -3\text{ A}$          | —   | -0.86 | -1.2  | V    |
| Transition frequency                 | $f_T$         | $V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$        | —   | 180   | —     | MHz  |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | —   | 50    | —     | pF   |

## Marking



## Explanation of Lot No.



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