

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

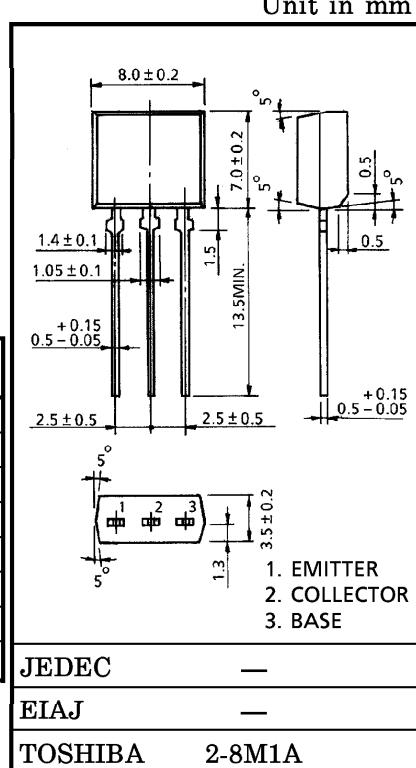
2SA1905

HIGH CURRENT SWITCHING APPLICATIONS

- Low Collector Saturation Voltage : $V_{CE}(\text{sat}) = -0.4V$ (Max.)
- High Speed Switching : $t_{\text{stg}} = 1.0\mu\text{s}$ (Typ.)
- Complementary to 2SC5076

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | -60 | V |
| Collector-Emitter Voltage | V_{CEO} | -50 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -5 | A |
| Base Current | I_B | -1 | A |
| Collector Power Dissipation | P_C | 1.3 | W |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55~150 | $^\circ\text{C}$ |

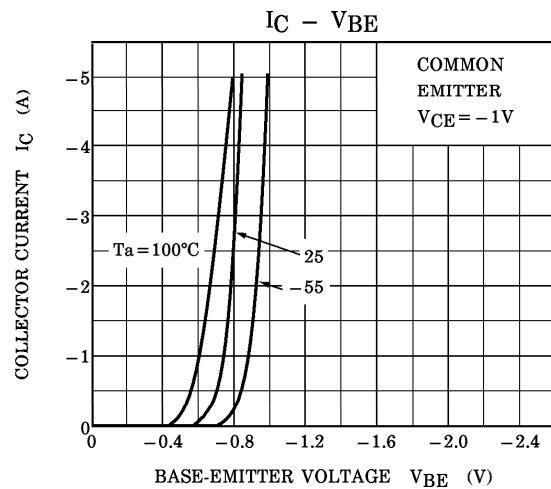
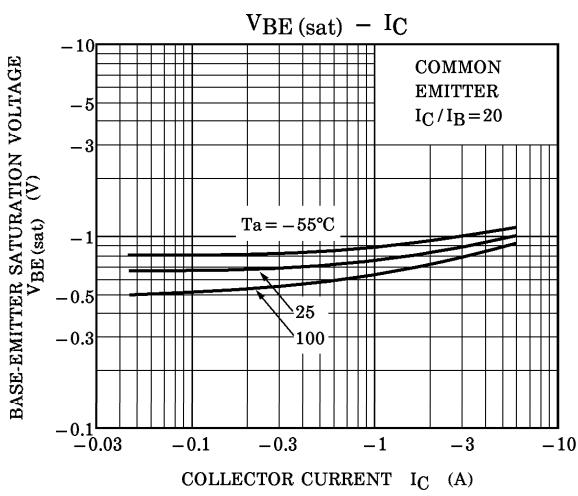
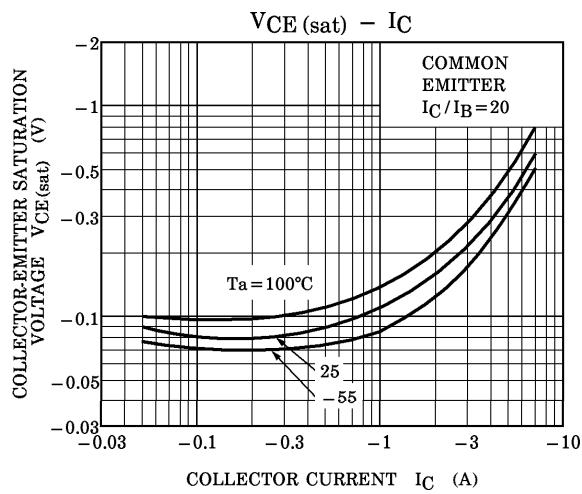
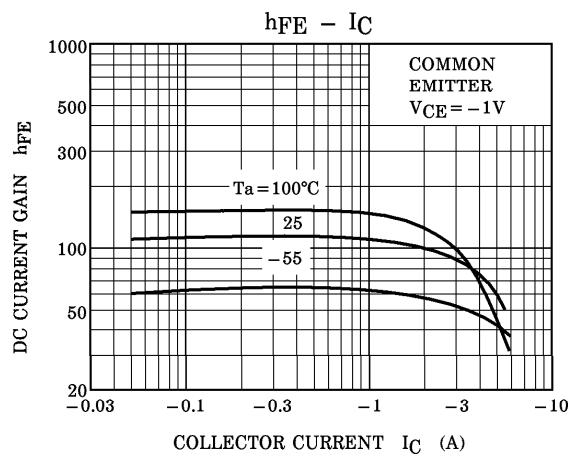
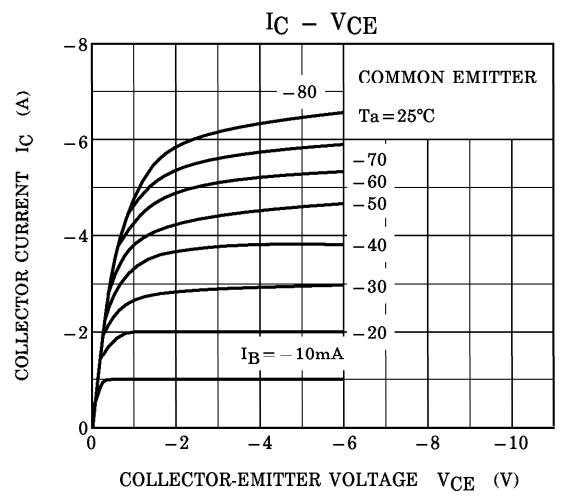


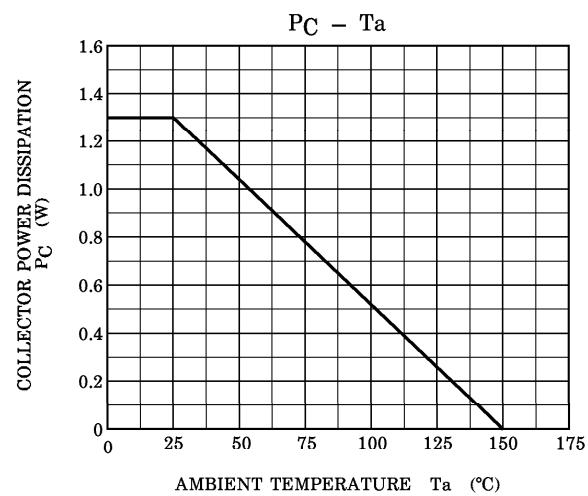
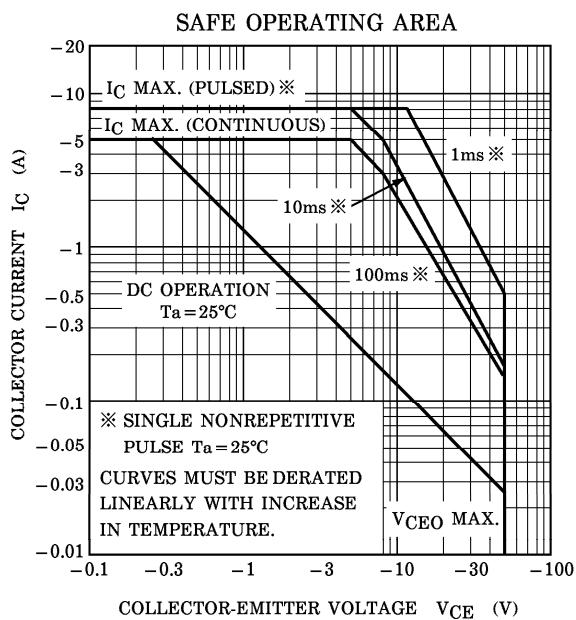
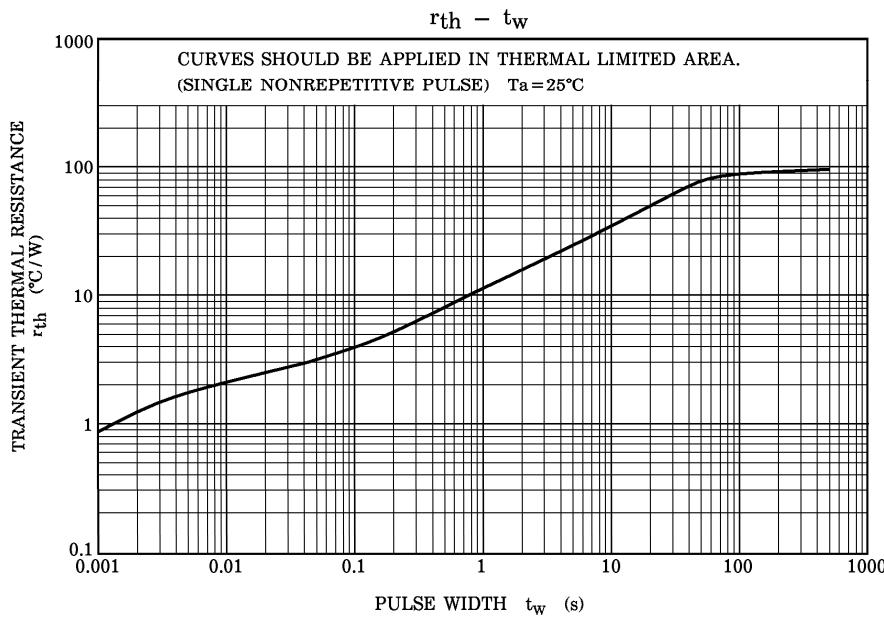
Weight : 0.55g (Typ.)

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|------------------------------|--|---|------|------|---------------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = -50\text{V}$, $I_E = 0$ | — | — | -1 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = -5\text{V}$, $I_C = 0$ | — | — | -1 | μA |
| Collector-Emitter Breakdown Voltage | $V_{(\text{BR})\text{CEO}}$ | $I_C = -10\text{mA}$, $I_B = 0$ | -50 | — | — | V |
| DC Current Gain | $h_{\text{FE}}(1)$ (Note) | $V_{CE} = -1\text{V}$, $I_C = -1\text{A}$ | 70 | — | 240 | |
| | $h_{\text{FE}}(2)$ | $V_{CE} = -1\text{V}$, $I_C = -3\text{A}$ | 30 | — | — | |
| Saturation Voltage | Collector-Emitter | $V_{CE}(\text{sat})$ | $I_C = -3\text{A}$, $I_B = -0.15\text{A}$ | — | -0.2 | -0.4 |
| | Base-Emitter | $V_{BE}(\text{sat})$ | $I_C = -3\text{A}$, $I_B = -0.15\text{A}$ | — | -0.9 | -1.2 |
| Transition Frequency | f_T | $V_{CE} = -4\text{V}$, $I_C = -1\text{A}$ | — | 60 | — | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB} = -10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$ | — | 170 | — | pF |
| Switching Time | Turn-on Time | t_{on} | | | | |
| | Storage Time | t_{stg} | $I_{B1} = I_{B2} = 0.15\text{A}$, DUTY CYCLE $\leq 1\%$ | | | |
| | Fall Time | t_f | $I_{B1} = I_{B2} = 0.15\text{A}$, DUTY CYCLE $\leq 1\%$ | | | |

Note : $h_{\text{FE}}(1)$ Classification O : 70~140, Y : 120~240





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