

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

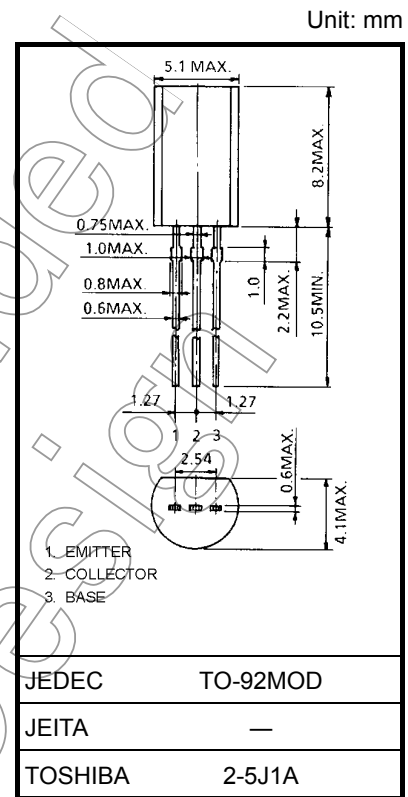
2SA1020

Power Amplifier Applications
 Power Switching Applications

- Low Collector saturation voltage: $V_{CE(sat)} = -0.5 \text{ V (max)}$ ($I_C = -1 \text{ A}$)
- High collector power dissipation: $P_C = 900 \text{ mW}$
- High-speed switching: $t_{stg} = 1.0 \mu\text{s}$ (typ.)
- Complementary to 2SC2655

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

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|------------|------------------|
| Collector-base voltage | V_{CBO} | -50 | V |
| Collector-emitter voltage | V_{CEO} | -50 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Collector current | I_C | -2 | A |
| Base current | I_B | -0.2 | A |
| Collector power dissipation | P_C | 900 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | -55 to 150 | $^\circ\text{C}$ |



Weight: 0.36 g (typ.)

Note: 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).

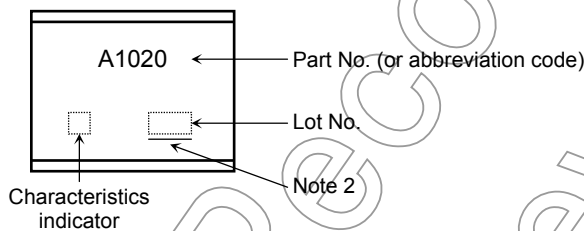
Not for New

Electrical Characteristics (T_a = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------|-----------------------|--|---|------|------|------|
| Collector cut-off current | | I _{CBO} | V _{CB} = -50 V, I _E = 0 | — | — | -1 | μA |
| Emitter cut-off current | | I _{EBO} | V _{EB} = -5 V, I _C = 0 | — | — | -1 | μA |
| Collector-emitter breakdown voltage | | V (BR) CEO | I _C = -10 mA, I _B = 0 | -50 | — | — | V |
| DC current gain | | h _{FE} (1) | V _{CE} = -2 V, I _C = -0.5 A | 70 | — | 240 | |
| | | h _{FE} (2) | V _{CE} = -2 V, I _C = -1.5 A | 40 | — | — | |
| Collector-emitter saturation voltage | | V _{CE (sat)} | I _C = -1 A, I _B = -0.05 A | — | — | -0.5 | V |
| Base-emitter saturation voltage | | V _{BE (sat)} | I _C = -1 A, I _B = -0.05 A | — | — | -1.2 | V |
| Transition frequency | | f _T | V _{CE} = -2 V, I _C = -0.5 A | — | 100 | — | MHz |
| Collector output capacitance | | C _{ob} | V _{CB} = -10 V, I _E = 0, f = 1 MHz | — | 40 | — | pF |
| Switching time | Turn-on time | t _{on} | | — | 0.1 | — | μs |
| | Storage time | t _{stg} | | — | 1 | — | |
| | Fall time | t _f | | I _{B1} = 0.05 A, I _{B2} = 0.05 A DUTY CYCLE ≤ 1% | — | 0.1 | |

Note: h_{FE} (1) classification O: 70 to 140, Y: 120 to 240

Marking

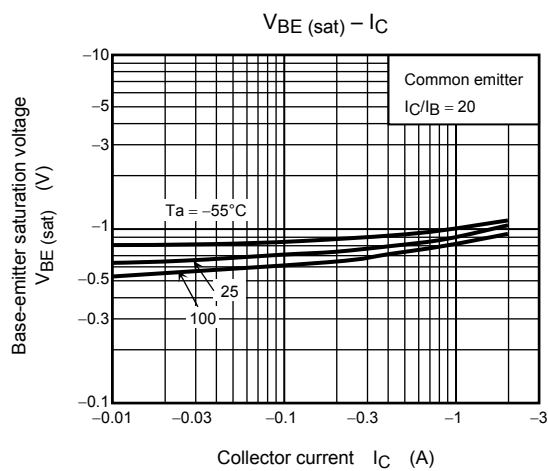
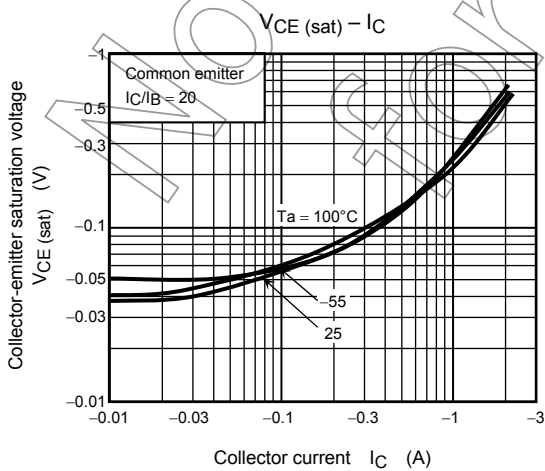
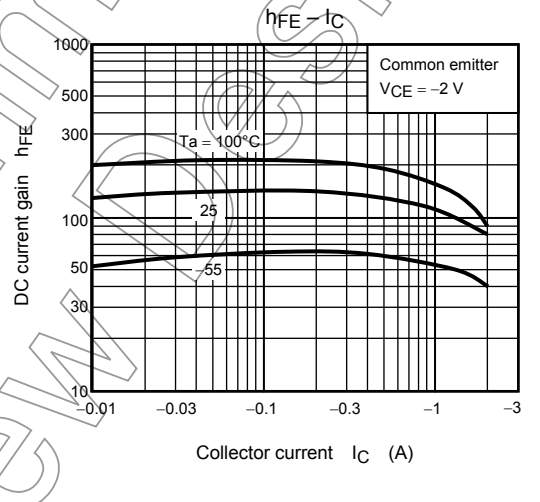
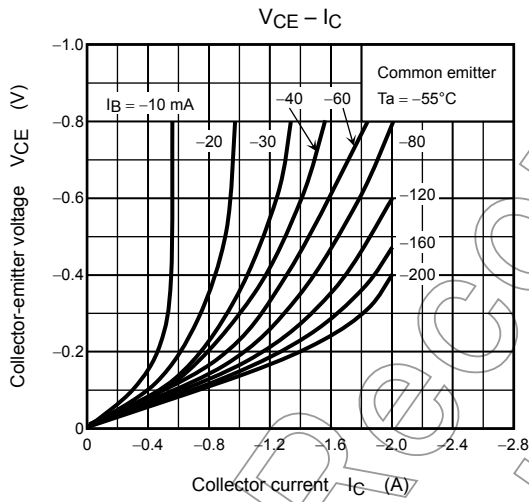
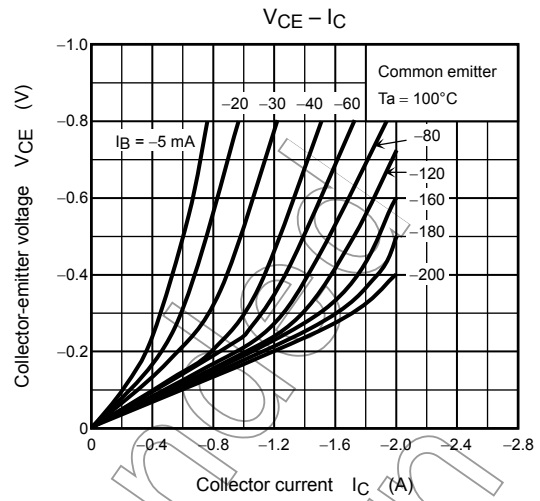
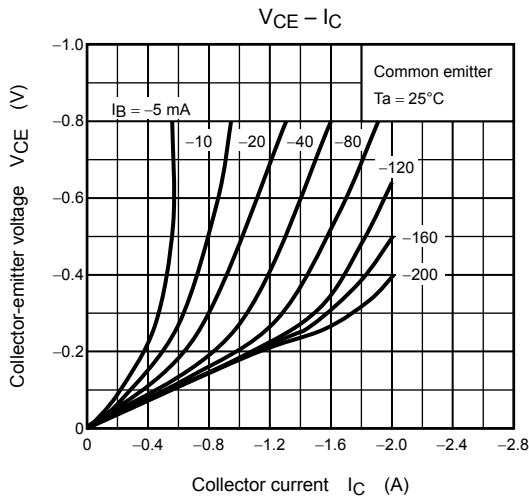


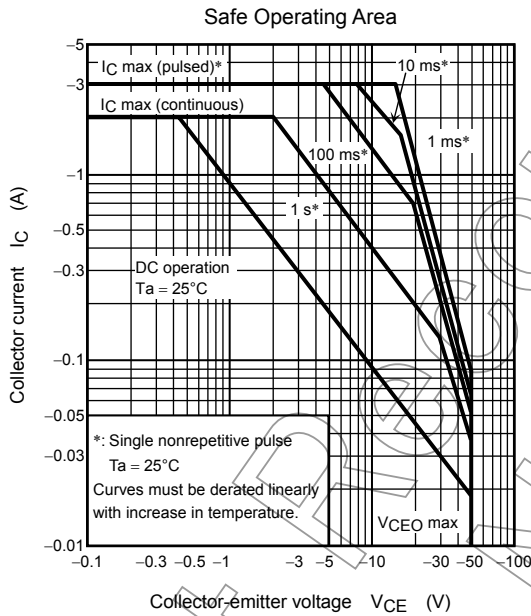
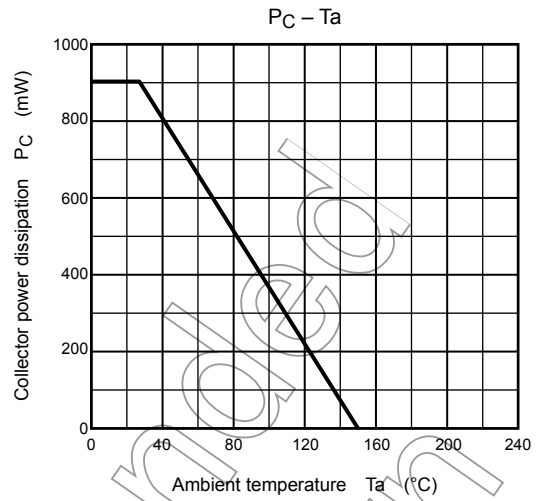
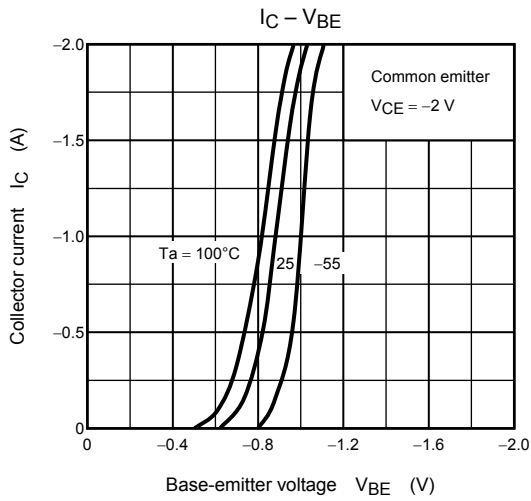
Note 2: A line under a Lot No. identifies the indication of product Labels.

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

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

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