TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor built-in Transistor)

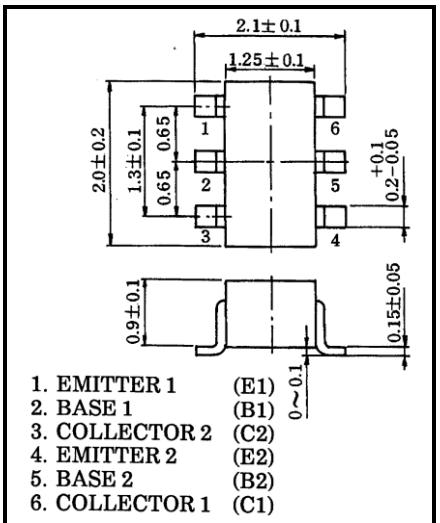
# RN2910, RN2911

Switching, Inverter Circuit, Interface Circuit and Driver Circuit

- AEC-Q101 Qualified (Note1)
- Including two devices in US6 (ultra super mini type with 6 leads)
- With built-in bias resistors.
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process and miniaturize equipment.
- Various resistance values are available to suit various circuit designs.
- Complementary to RN1910 to RN1911

Note1: For detail information, please contact to our sales.

Unit: mm

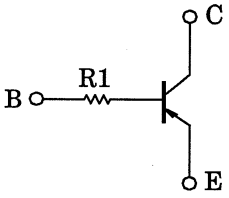



US6

| | |
|---|---|
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-3J1A |

Weight: 6.8 mg (typ.)

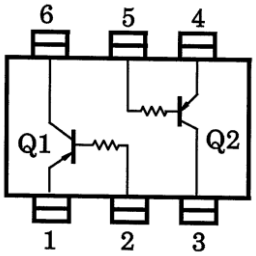
## Equivalent Circuit




## Absolute Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)

| Characterisstic | 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 | $I_C$ | −100 | mA |
| Collector power dissipation | $P_C$* | 200 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature range | $T_{stg}$ | −55 to 150 | °C |

## Equivalent Circuit (Top View)




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).

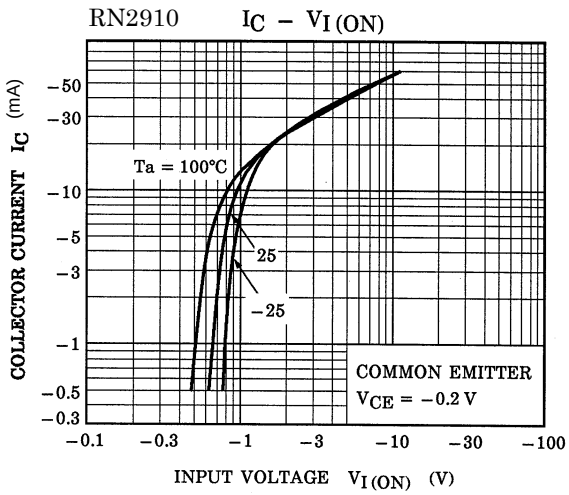
*: Total rating

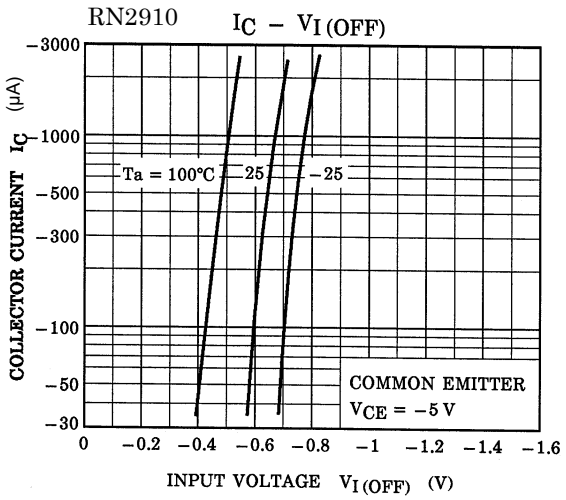
Start of commercial production
1998-02

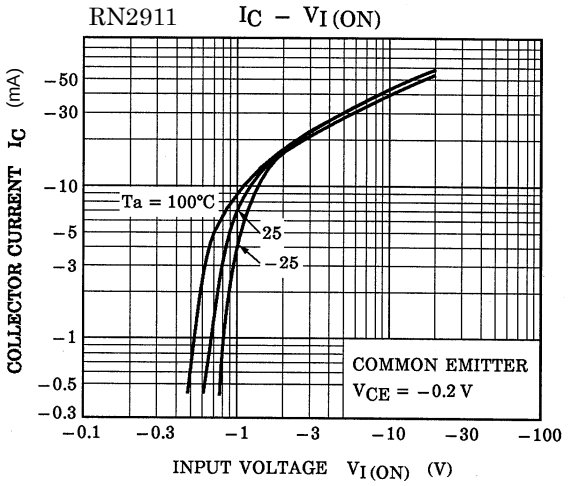
## Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

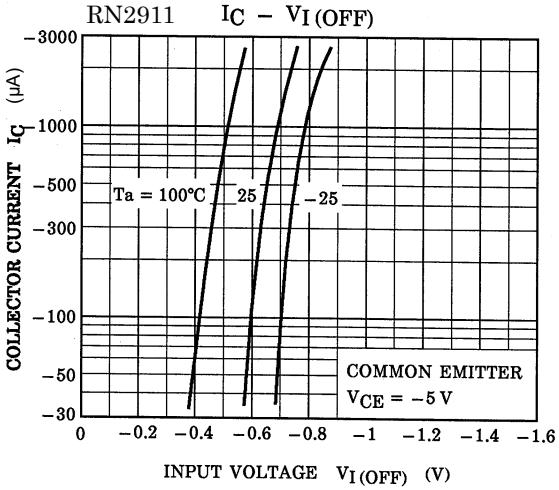
| Characteristic | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Collector cut-off current | | $I_{CBO}$ | $V_{CB}$ = −50 V, $I_E$ = 0 mA | — | — | −100 | nA |
| Emitter cut-off current | | $I_{EBO}$ | $V_{EB}$ = −5 V, $I_C$ = 0 mA | — | — | −100 | nA |
| DC current gain | | $h_{FE}$ | $V_{CE}$ = −5 V, $I_C$ = −1 mA | 120 | — | 400 | — |
| Collector-emitter saturation voltage | | $V_{CE\ (sat)}$ | $I_C$ = −5 mA, $I_B$ = −0.25 mA | — | −0.1 | −0.3 | V |
| Transition frequency | | $f_T$ | $V_{CE}$ = −10 V, $I_C$ = −5 mA | — | 200 | — | MHz |
| Collector output capacitance | | $C_{ob}$ | $V_{CB}$ = −10 V, $I_E$ = 0 mA, f = 1 MHz | — | 3 | 6 | pF |
| Input resistor | RN2910 | R1 | — | 3.29 | 4.7 | 6.11 | kΩ |
| | RN2911 | | | 7 | 10 | 13 | |

## Characteristics Curves (Q1, Q2 Common)



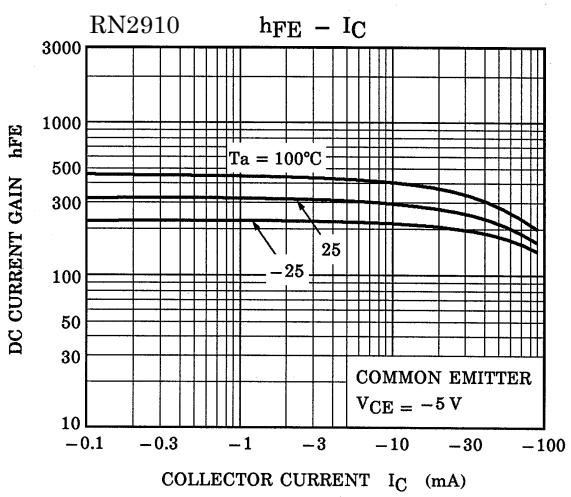



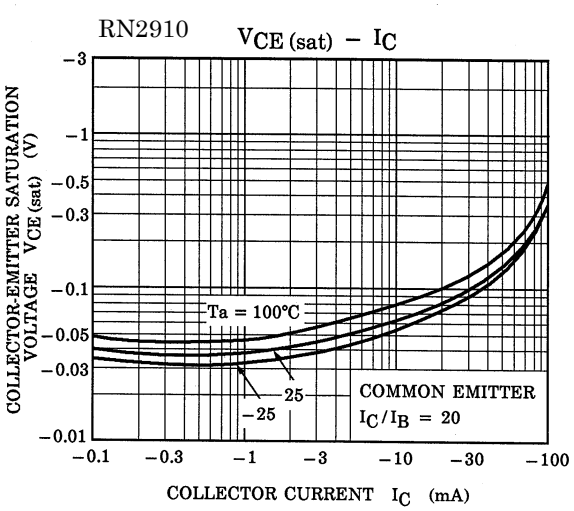



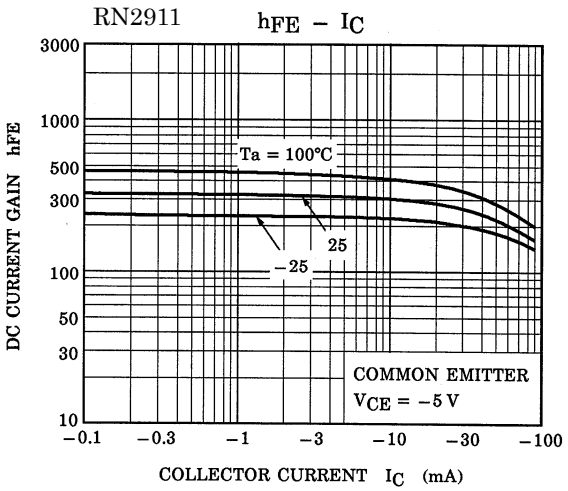



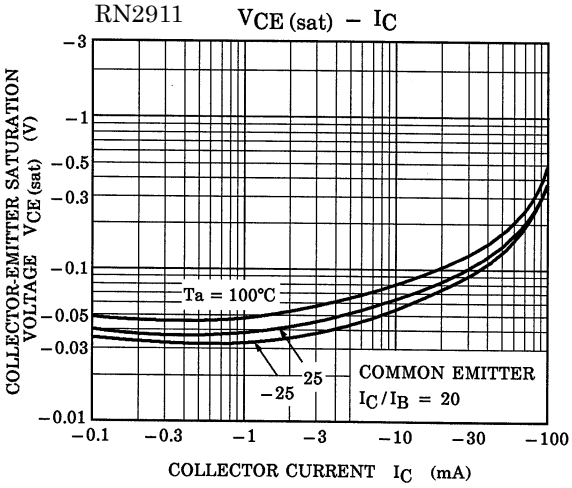

The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

## Characteristics Curves (Q1, Q2 Common)

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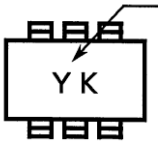
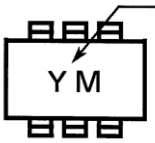
## Marking

| Part No. | Marking |
|---|---|
| RN2910 | Part No.(abbreviation code)<br>  |
| RN2911 | Part No.(abbreviation code)<br>  |

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