

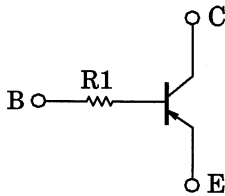
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor built-in Transistor)

RN2131MFV, RN2132MFV

Switching Applications
 Inverter Circuit Applications
 Interface Circuit Applications
 Driver Circuit Applications

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN1131MFV, RN1132MFV

Equivalent Circuit



Absolute Maximum Ratings (Ta = 25°C)

| Characteristic | 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 (Note1) | 150 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature range | T_{stg} | -55 to 150 | °C |

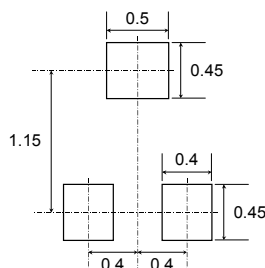
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

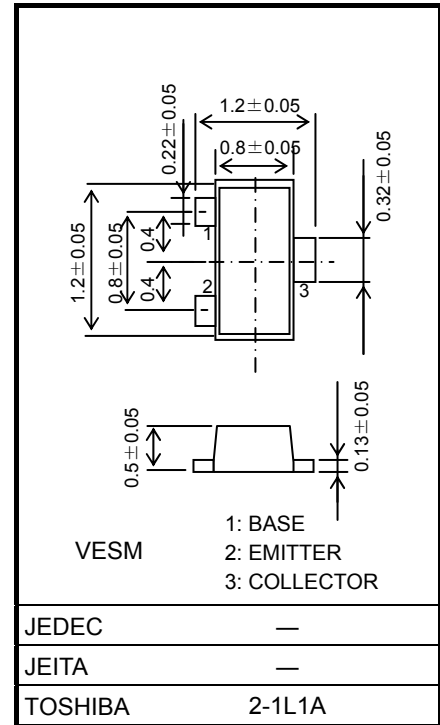
Note1 : Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6 mm)

Land Pattern Example

Unit : mm



Unit: mm

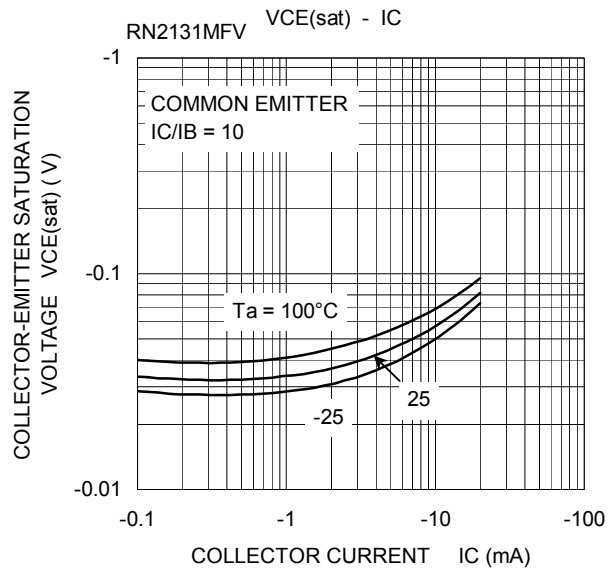
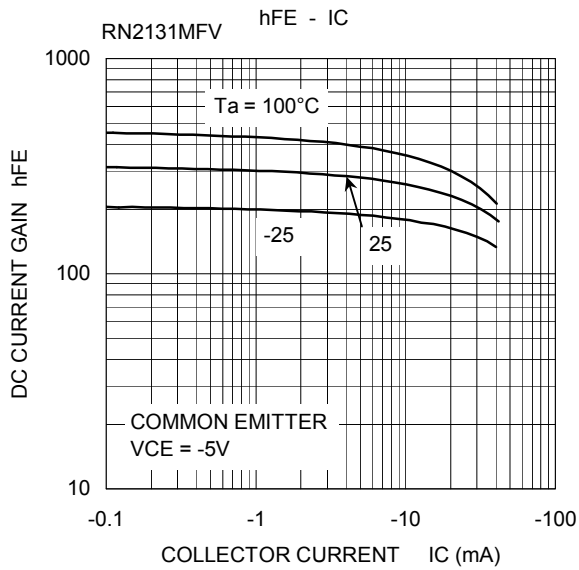
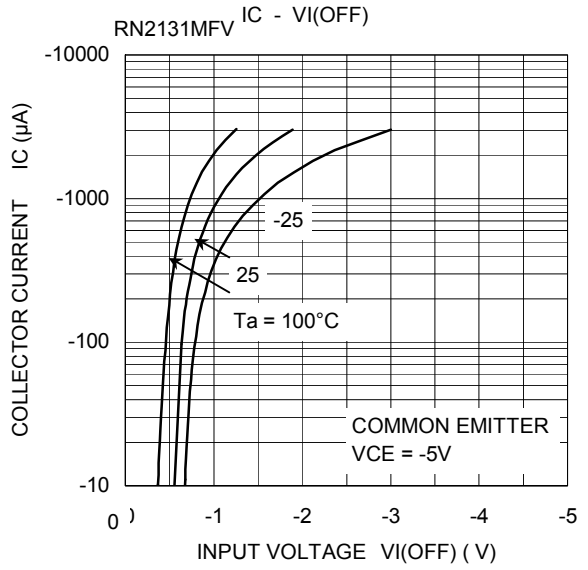
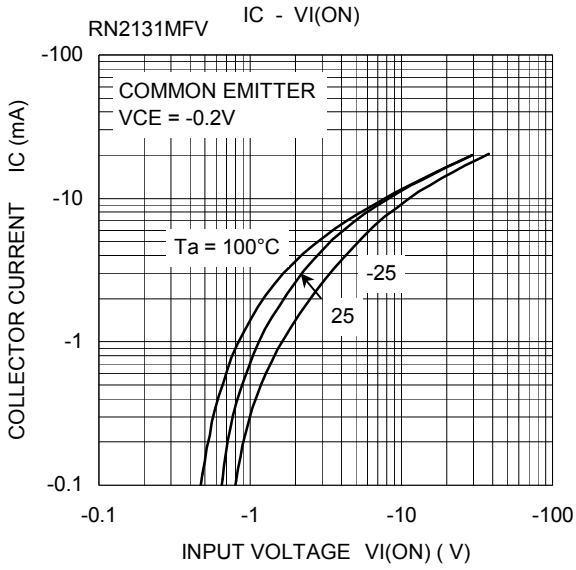


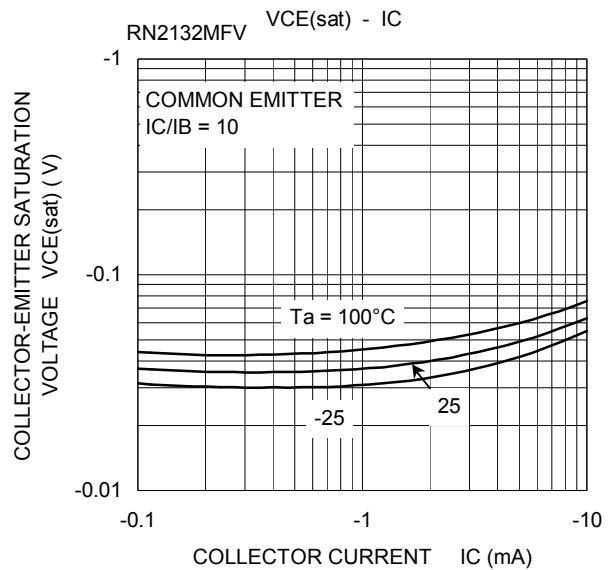
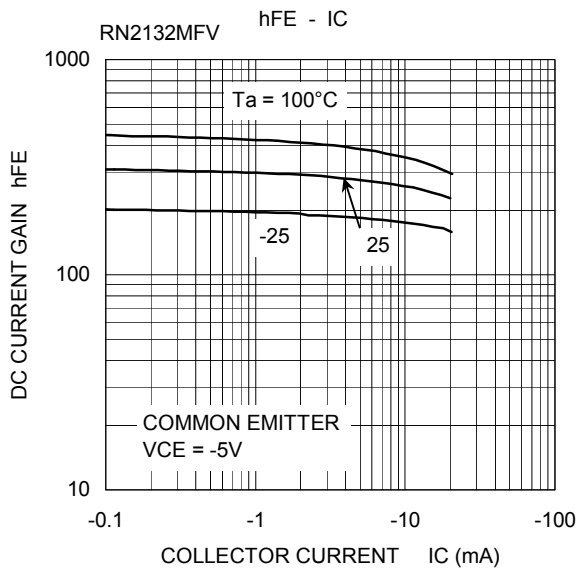
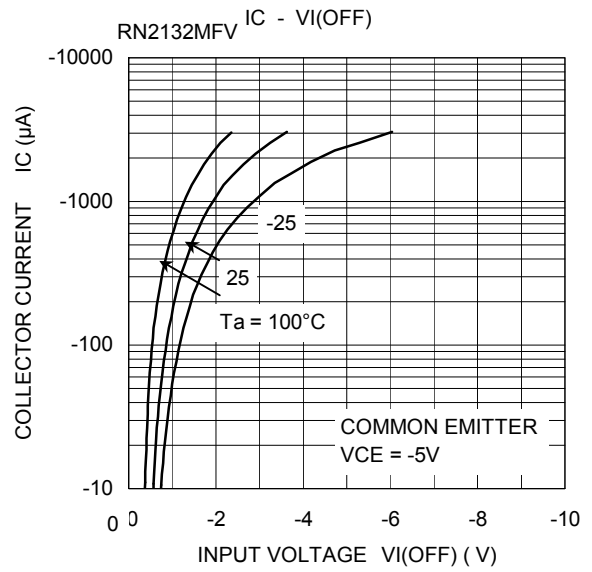
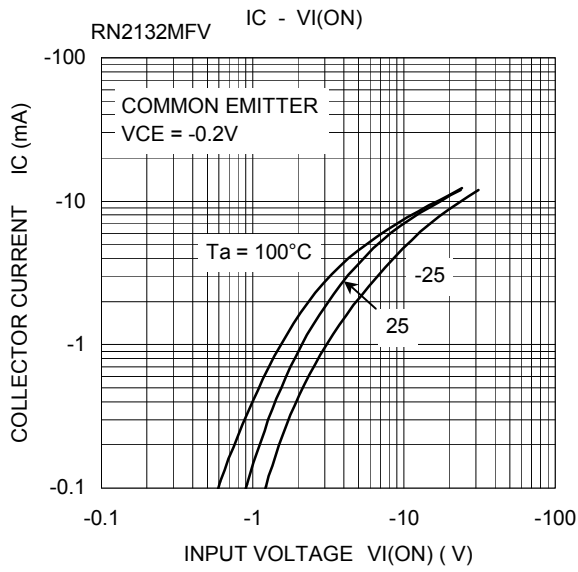
Weight : 1.5 mg (typ.)

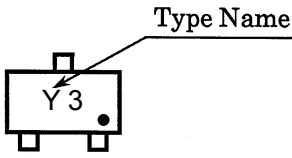
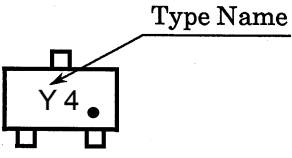
Start of commercial production
 2005-04

Electrical Characteristics (Ta = 25°C)

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|---------------|--------------|--|-----|------|------|------|
| Collector cut-off current | I_{CBO} | — | $V_{CB} = -50\text{ V}, I_E = 0$ | — | — | -100 | nA |
| Emitter cut-off current | I_{EBO} | — | $V_{EB} = -5\text{ V}, I_C = 0$ | — | — | -100 | nA |
| DC current gain | h_{FE} | — | $V_{CE} = -5\text{ V}, I_C = -1\text{ mA}$ | 120 | — | 400 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | $I_C = -5\text{ mA}, I_B = -0.5\text{ mA}$ | — | -0.1 | -0.3 | V |
| Collector output capacitance | C_{ob} | — | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 0.9 | — | pF |
| Input resistor | RN2131MFV | R1 | — | 70 | 100 | 130 | kΩ |
| | RN2132MFV | | | 140 | 200 | 260 | |





| Type Name | Marking |
|-----------|---|
| RN2131MFV |  A schematic diagram of a transformer core with a central vertical tap. The core is labeled 'Y 3'. A line points from the text 'Type Name' to the top of the core. The core has four feet: two on the left and two on the right. A small square is at the top center, and a small circle is at the bottom right. |
| RN2132MFV |  A schematic diagram of a transformer core with a central vertical tap. The core is labeled 'Y 4'. A line points from the text 'Type Name' to the top of the core. The core has four feet: two on the left and two on the right. A small square is at the top center, and a small circle is at the bottom right. |

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