

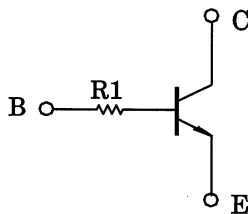
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1131MFV, RN1132MFV

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 RN2131MFV and RN2132MFV

Equivalent Circuit



Absolute Maximum Ratings (Ta = 25°C)

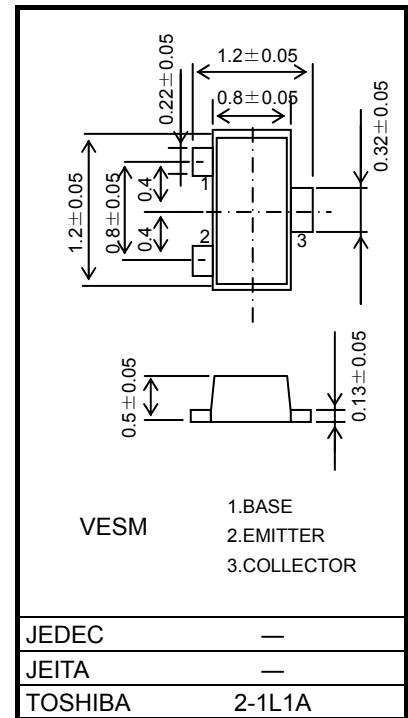
| Characteristic | Symbol | Rating | Unit |
|-----------------------------|---------------|------------|------|
| Collector-base voltage | V_{CBO} | 50 | V |
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 100 | mA |
| Collector 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).

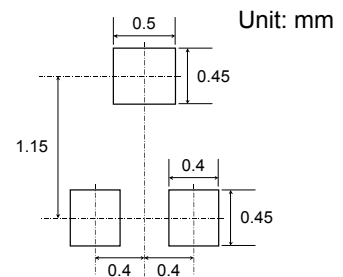
Note1 : Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6 mm)

Unit: mm



Weight: 1.5 mg (typ.)

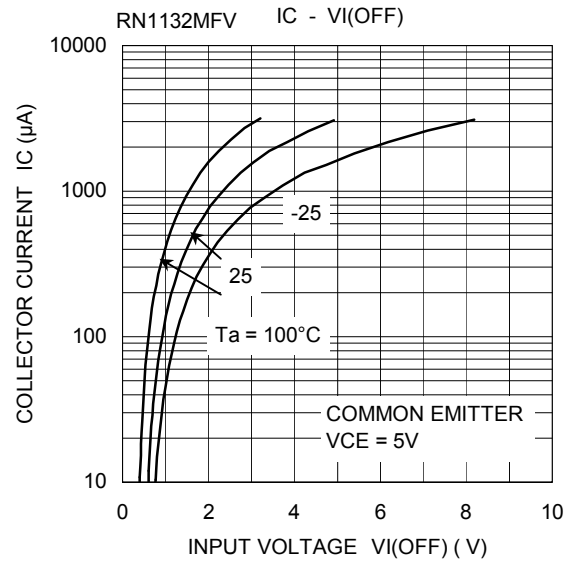
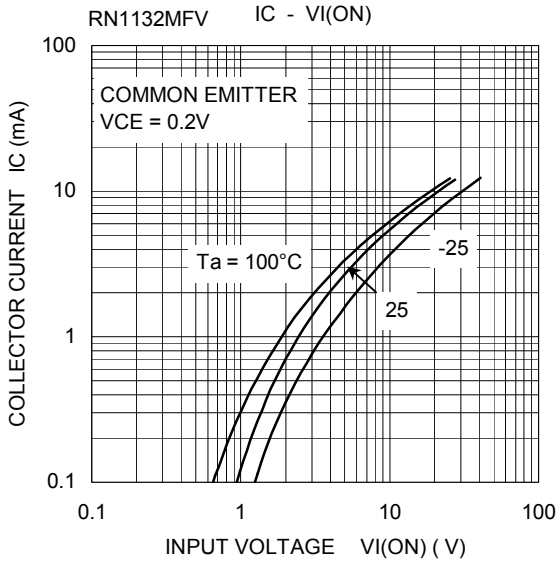
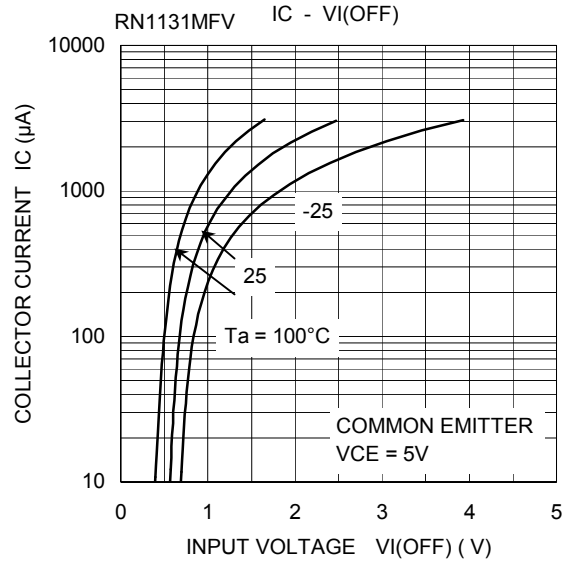
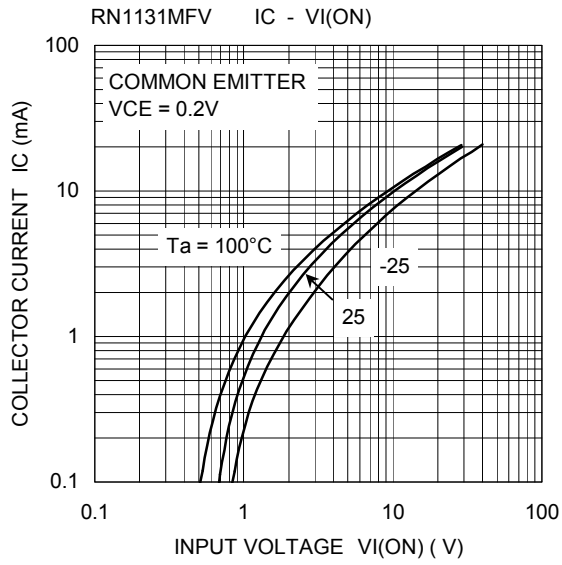
Land Pattern Example

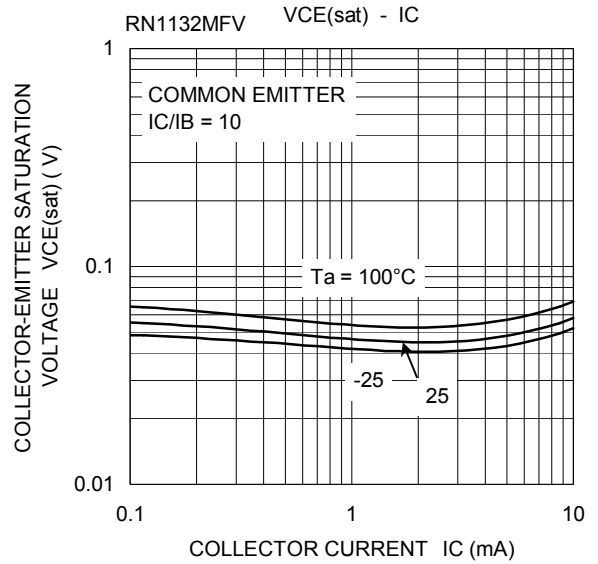
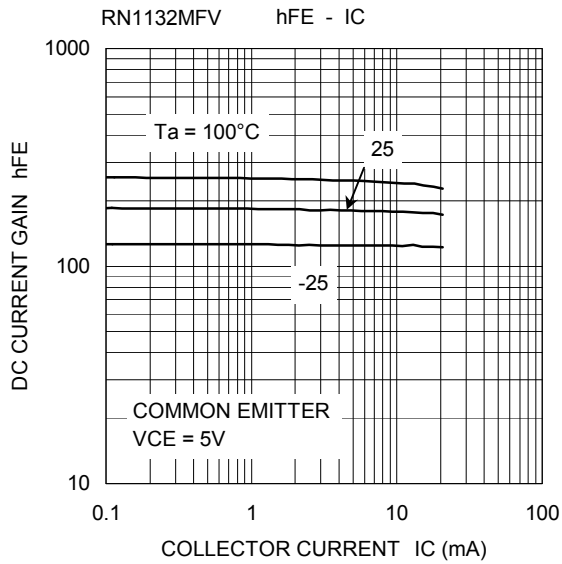
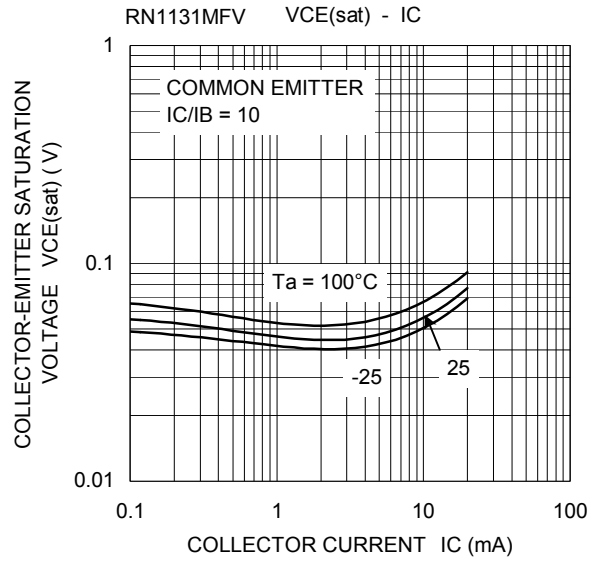
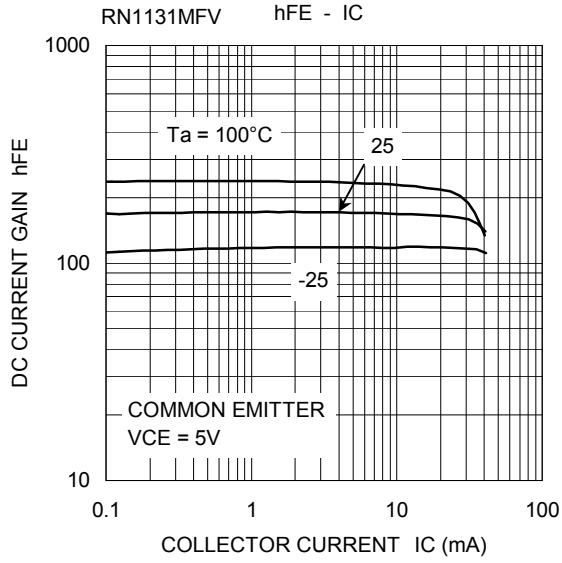


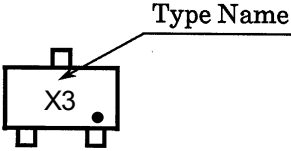
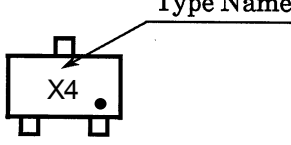
Start of commercial production
 2005-04

Electrical Characteristics (Ta = 25°C)

| Characteristic | | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|-----------|---------------|--------------|-----------------------------------|-----|------|-----|------|
| Collector cut-off current | | I_{CBO} | — | $V_{CB} = 50V, I_E = 0$ | — | — | 100 | nA |
| Emitter cut-off current | | I_{EBO} | — | $V_{EB} = 5V, I_C = 0$ | — | — | 100 | nA |
| DC current gain | | h_{FE} | — | $V_{CE} = 5V, I_C = 1mA$ | 120 | — | 700 | — |
| Collector-emitter saturation voltage | | $V_{CE(sat)}$ | — | $I_C = 5mA, I_B = 0.5mA$ | — | 0.1 | 0.3 | V |
| Collector output capacitance | | C_{ob} | — | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | — | 0.7 | — | pF |
| Input resistor | RN1131MFV | R1 | — | — | 70 | 100 | 130 | kΩ |
| | RN1132MFV | | | | 140 | 200 | 260 | |





| Type Name | Marking |
|-----------|---|
| RN1131MFV |  <p>The diagram shows a rectangular component with a small square protrusion on top and two small square protrusions at the bottom. The text 'X3' is printed on the front face. A line points from the text 'Type Name' to the top protrusion.</p> |
| RN1132MFV |  <p>The diagram shows a rectangular component with a small square protrusion on top and two small square protrusions at the bottom. The text 'X4' is printed on the front face. A line points from the text 'Type Name' to the top protrusion.</p> |

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