

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1131MFV, RN1132MFV

Unit: mm

Switching Applications

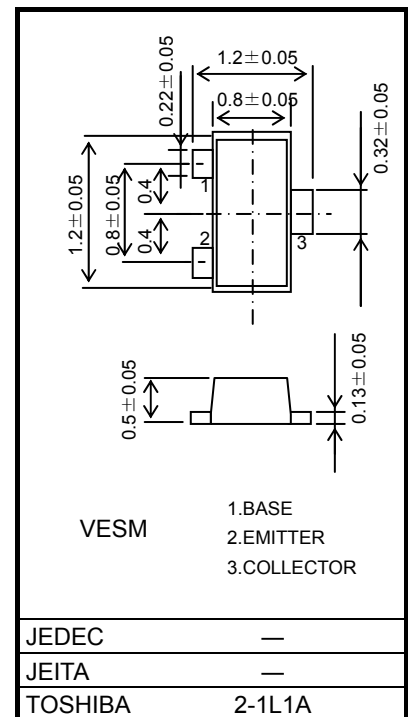
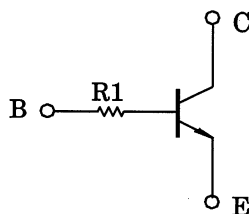
Inverter Circuit Applications

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



Weight: 1.5 mg (typ.)

Absolute Maximum Ratings (Ta = 25°C)

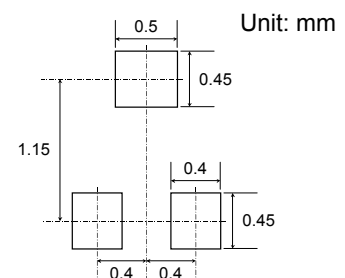
Characterisitic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C (Note1)	150	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	–55 to 150	°C

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)

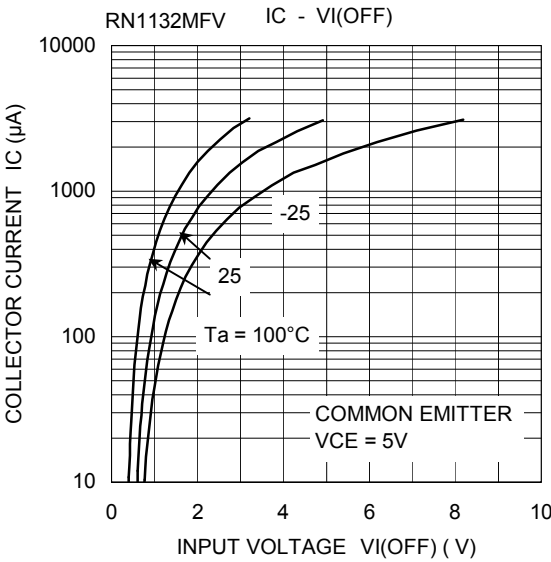
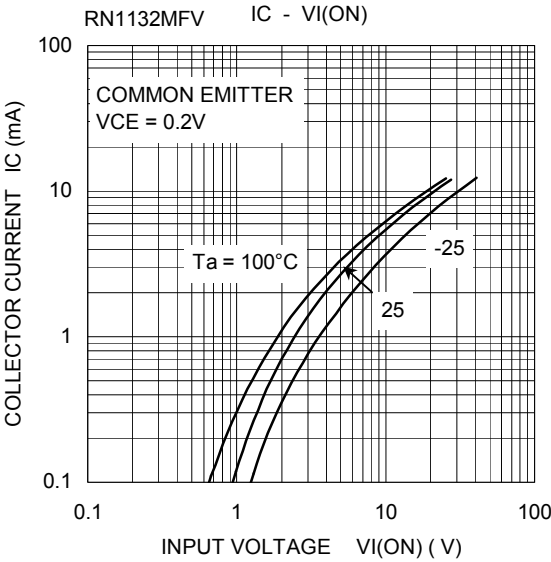
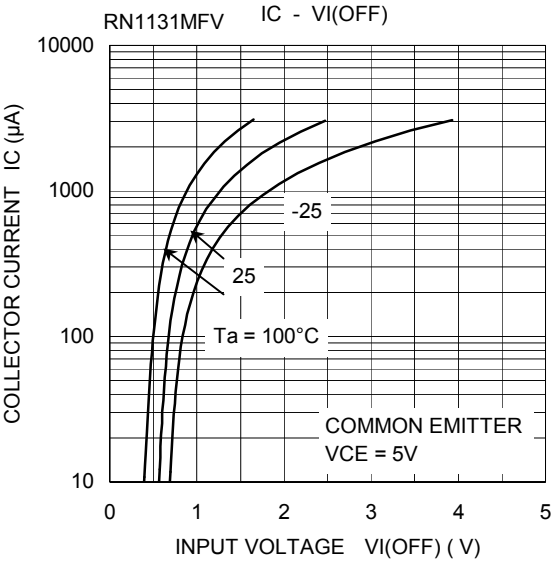
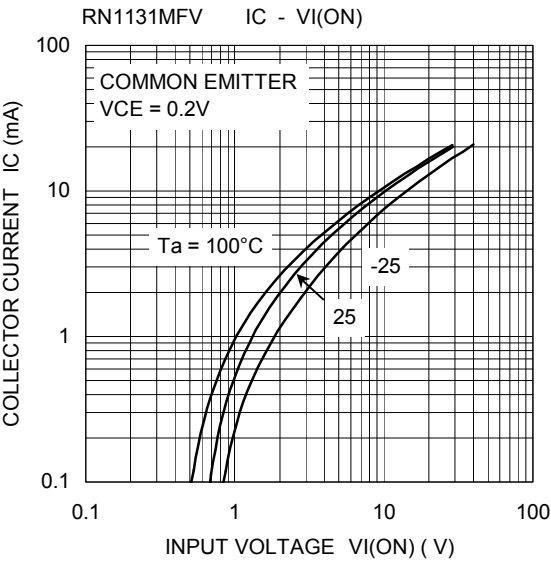
Land Pattern Example

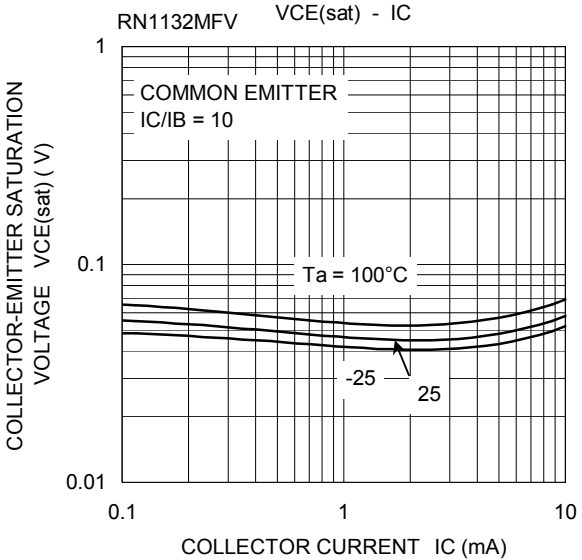
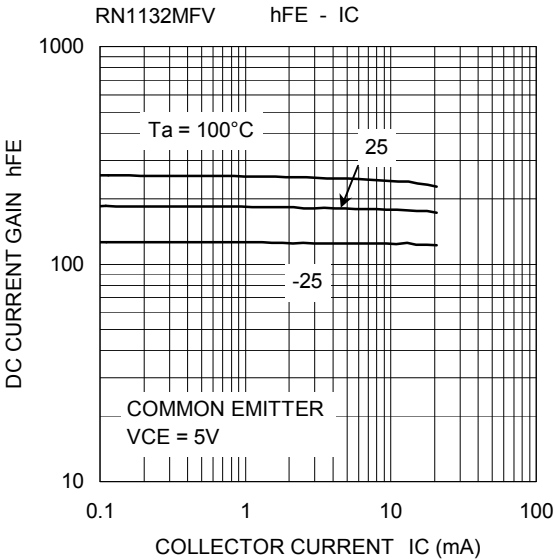
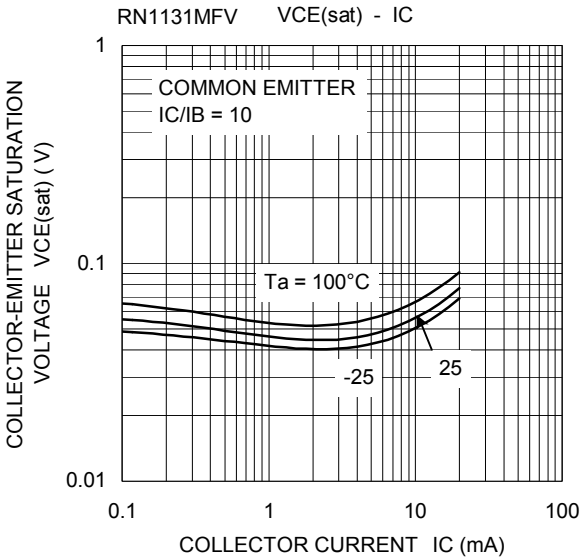
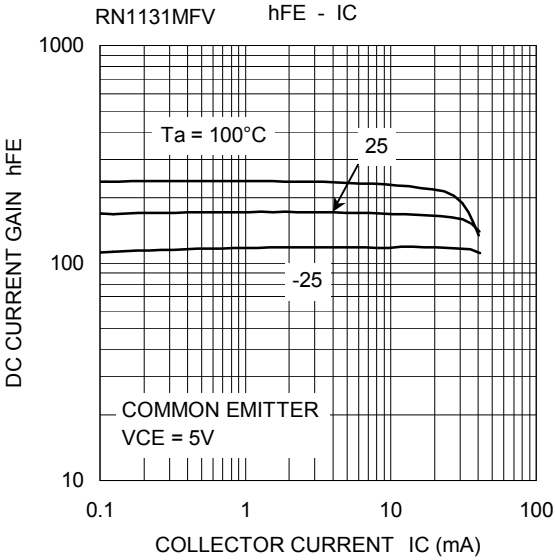


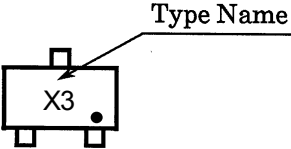
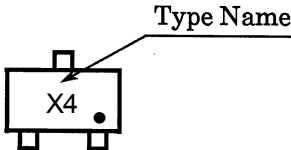
Start of commercial production
2005-04

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 tab on top and two small square feet on the bottom. Inside the rectangle, the text 'X3' is printed. A line points from the text 'Type Name' to the top tab.</p>
RN1132MFV	 <p>The diagram shows a rectangular component with a small square tab on top and two small square feet on the bottom. Inside the rectangle, the text 'X4' is printed. A line points from the text 'Type Name' to the top tab.</p>

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