

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# RN1131MFV,RN1132MFV

Switching Applications

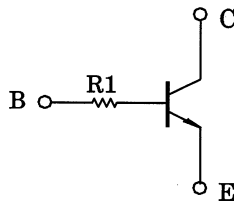
Inverter Circuit Applications

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,RN2132MFV

### Equivalent Circuit



### Absolute Maximum Ratings (Ta = 25°C)

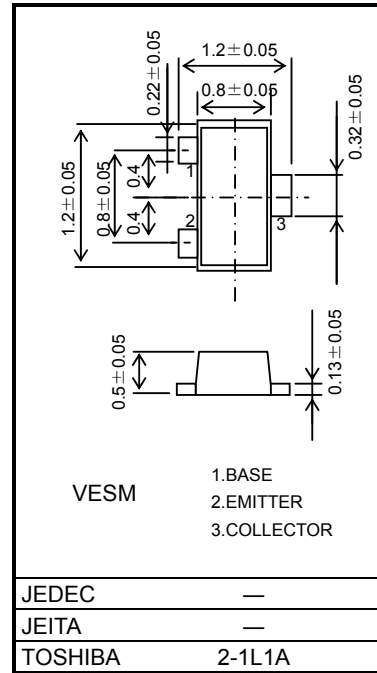
Characteristic	Symbol	Rating	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	100	mA
Collector power dissipation	P <sub>C</sub> (Note)	150	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-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.

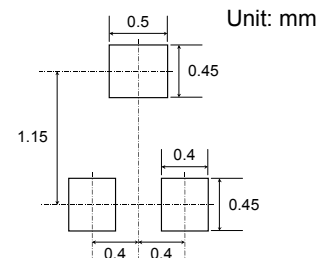
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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

Unit: mm

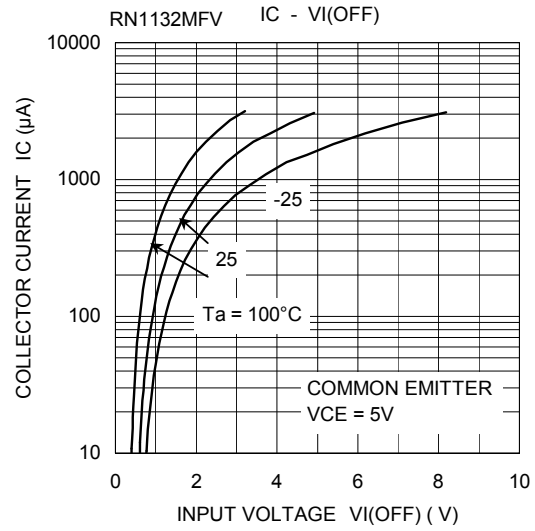
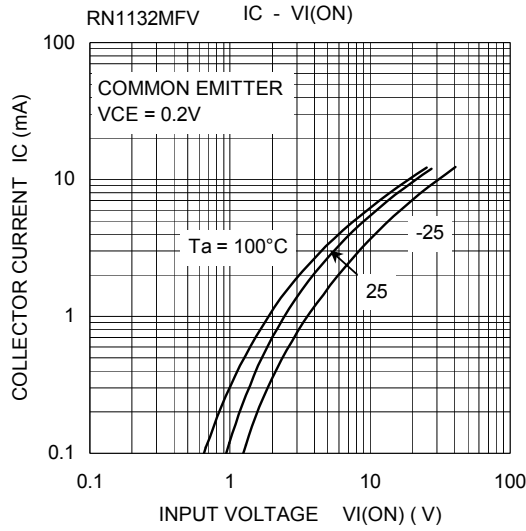
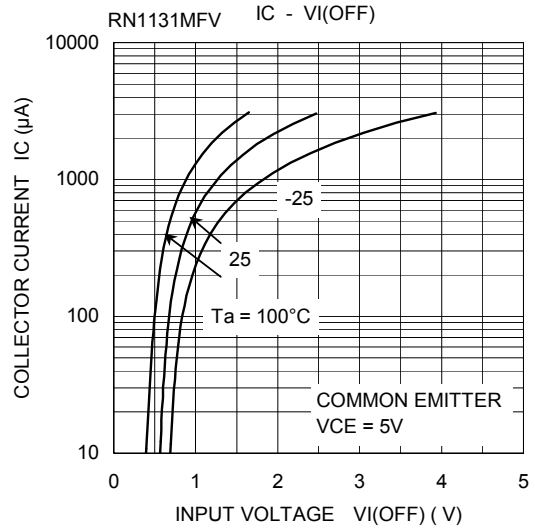
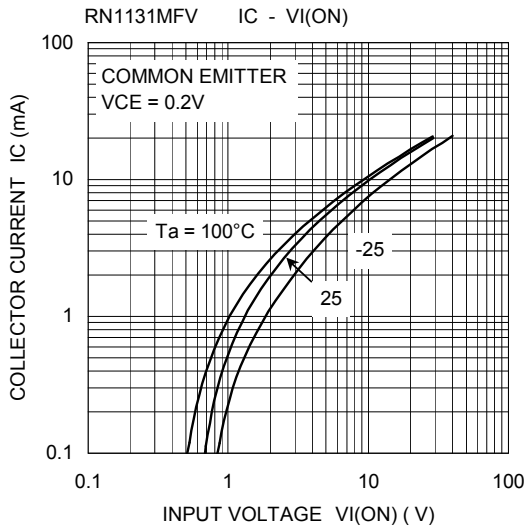


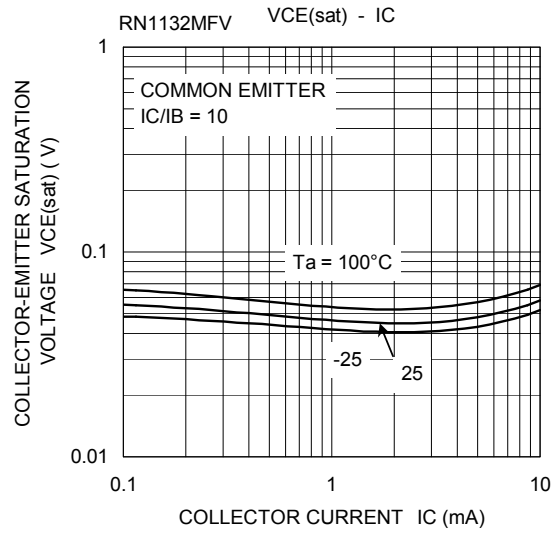
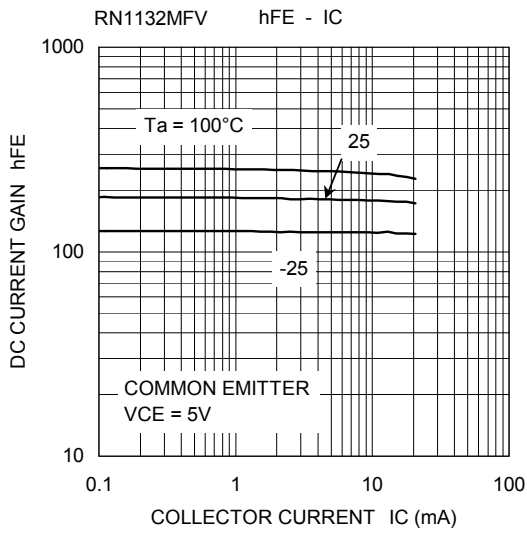
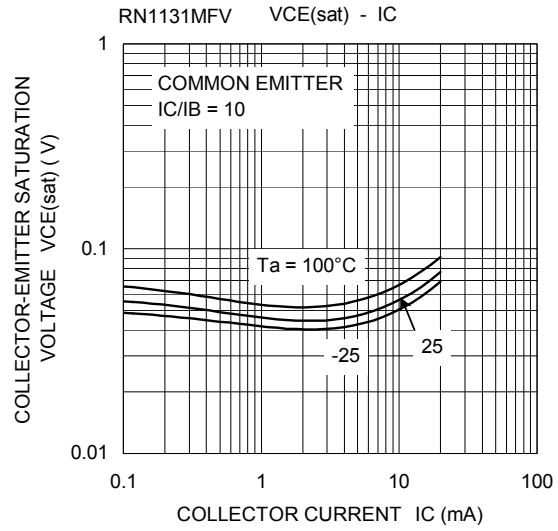
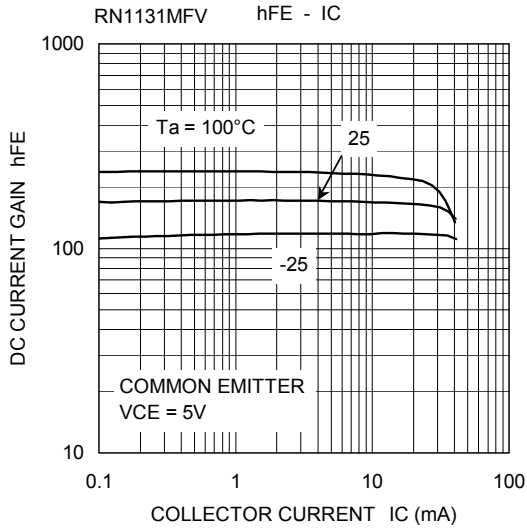
### Land Pattern Example

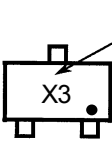
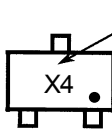


## Electrical Characteristics (Ta = 25°C)

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	$V_{CE(sat)}$	—	$I_C = 5mA, I_B = 0.25mA$	—	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	
RN1132MFV	

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