

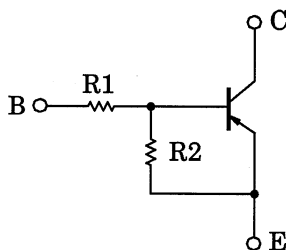
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor built-in Transistor)

## RN2130MFV

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 RN1130MFV

### Equivalent Circuit



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

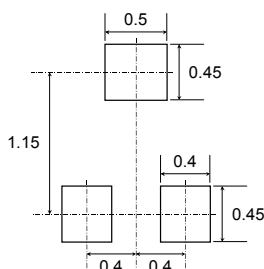
Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-50	V
Collector-emitter voltage	$V_{CEO}$	-50	V
Emitter-base voltage	$V_{EBO}$	-10	V
Collector current	$I_C$	-100	mA
Collector power dissipation	$P_C$ (Note1)	150	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55 to 150	°C

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

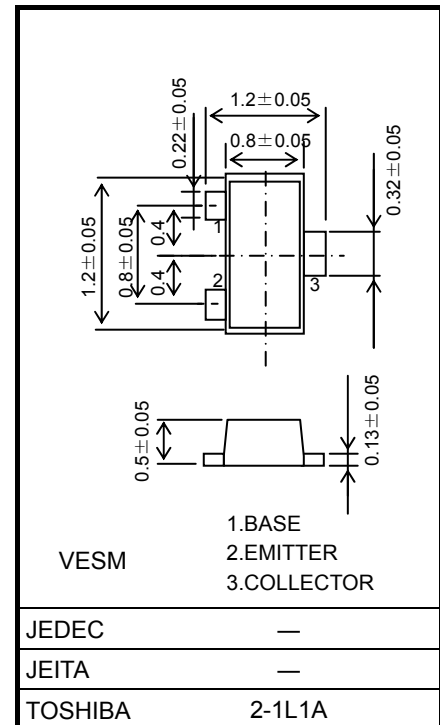
Note2: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

### Land Pattern Example Unit: mm



Unit: mm

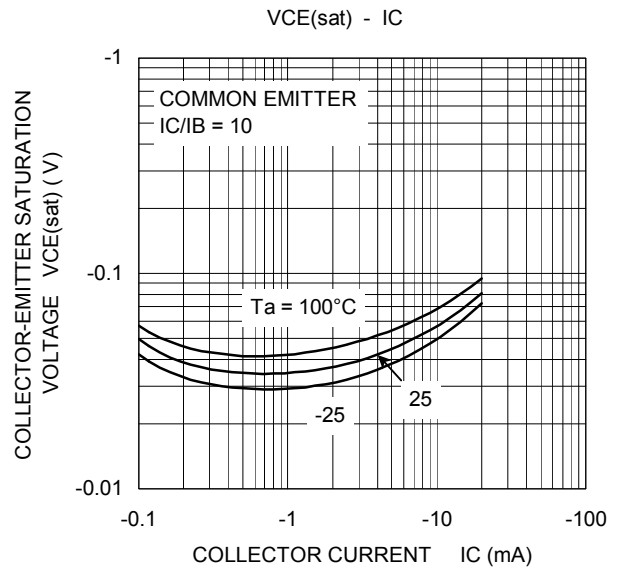
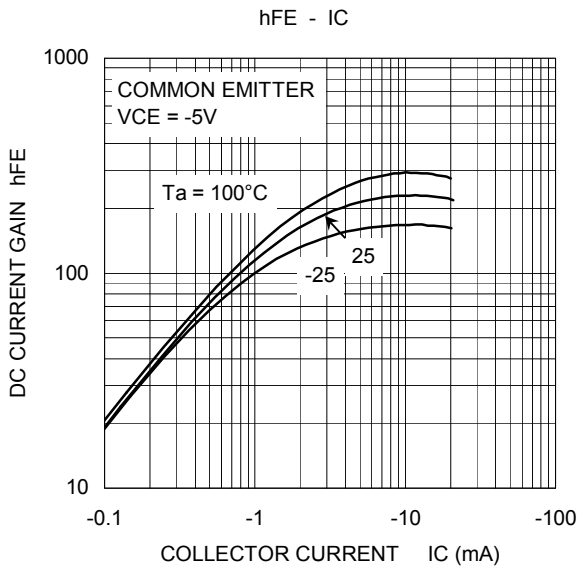
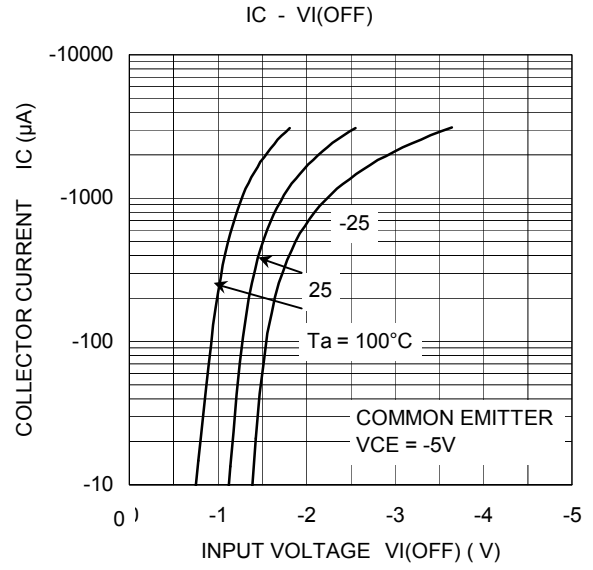
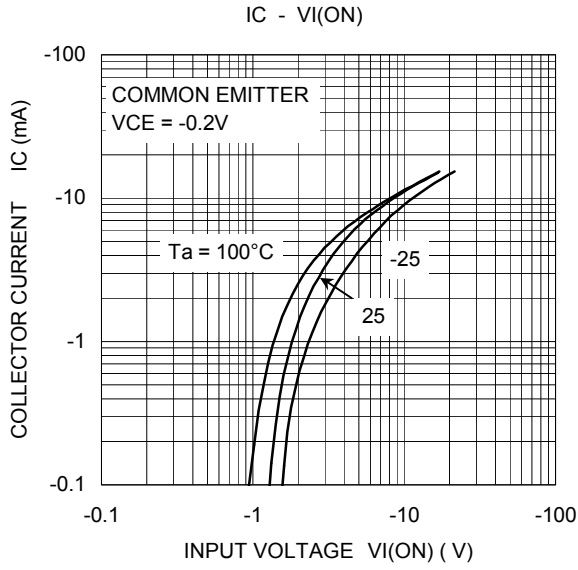


Weight : 1.5 mg (typ.)

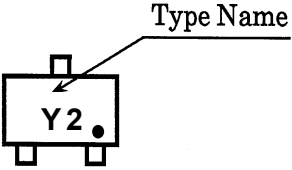
Start of commercial production  
 2005-04

## Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-100	nA
	$I_{CEO}$	$V_{CE} = -50\text{ V}, I_B = 0$	—	—	-500	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -10\text{ V}, I_C = 0$	-38	—	-72	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$	100	—	—	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -5\text{ mA}, I_B = -0.5\text{ mA}$	—	-0.1	-0.3	V
Input voltage (ON)	$V_{I(ON)}$	$V_{CE} = -0.2\text{ V}, I_C = -5\text{ mA}$	-1.7	—	-8.2	V
Input voltage (OFF)	$V_{I(OFF)}$	$V_{CE} = -5\text{ V}, I_C = -0.1\text{ mA}$	-1.0	—	-1.6	V
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	0.9	—	pF
Input resistor	R1	—	70	100	130	$k\Omega$
Resistor ratio	R1/R2	—	0.8	1.0	1.2	—



**Marking**

Type Name	Marking
RN2130MFV	 <p>The diagram shows a rectangular component with a small square protrusion at the top center and two small square protrusions at the bottom. Inside the rectangle, the text 'Y2' is printed, followed by a small black dot. An arrow points from the text 'Type Name' to the top protrusion.</p>

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