

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

RN2130MFV

Unit: mm

Switching Applications

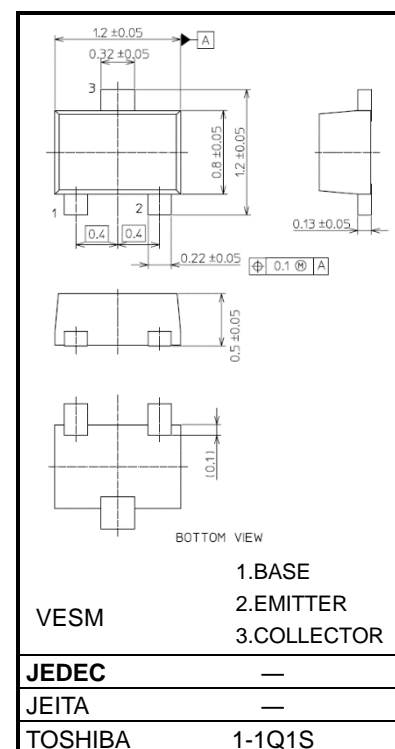
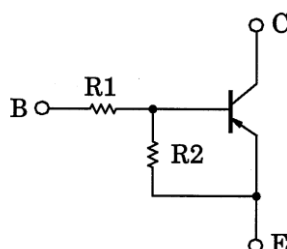
Inverter Circuit Applications

Interface Circuit Applications

Driver Circuit Applications

- Ultra-small package, suited to very high density mounting
- Incorporating a bias resistor into the transistor reduces the number of parts, so enabling the manufacture of ever more compact equipment and lowering assembly cost.
- A wide range of resistor values is available for use in various circuits.
- Complementary to the RN1130MFV

Equivalent Circuit



Weight: 1.5 mg (typ.)

Absolute Maximum Ratings (Ta = 25°C)

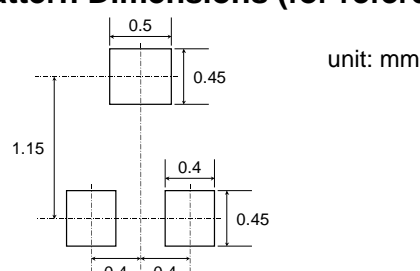
Characterisitic	Symbol	Rating	Unit
Collector-base voltage	V _{CB0}	−50	V
Collector-emitter voltage	V _{CE0}	−50	V
Emitter-base voltage	V _{EB0}	−10	V
Collector current	I _C	−100	mA
Collector power dissipation	P _C (Note1)	150	mW
Junction temperature	T _j	150	°C
Storage temperature range	T _{stg}	−55 to 150	°C

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)

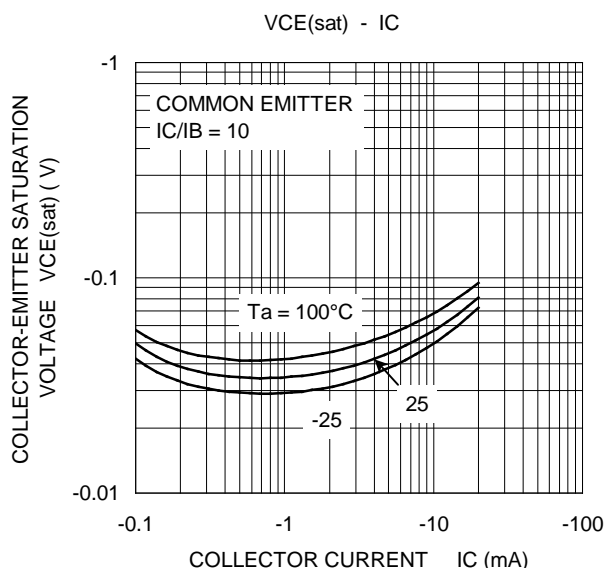
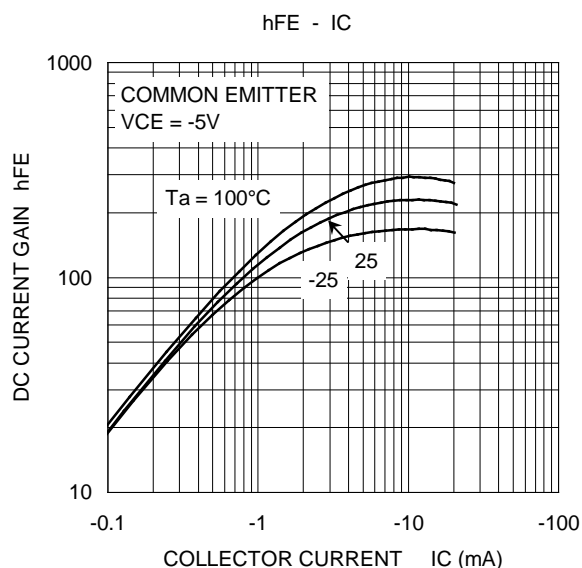
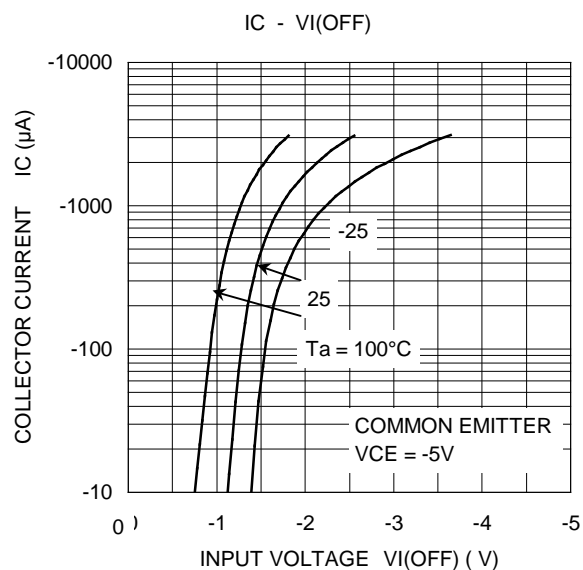
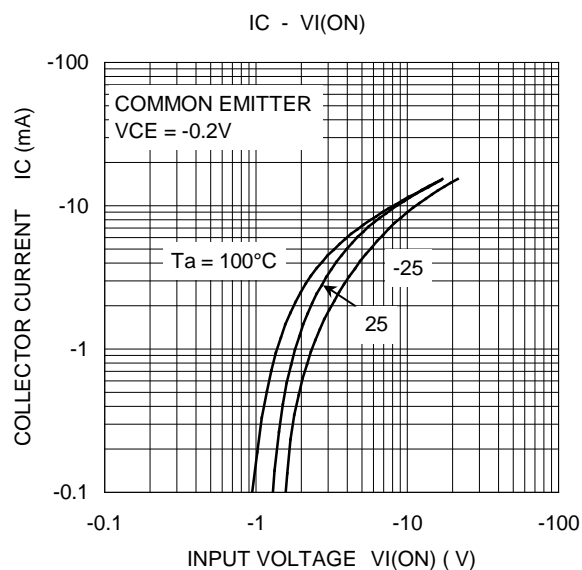
Land Pattern Dimensions (for reference only)



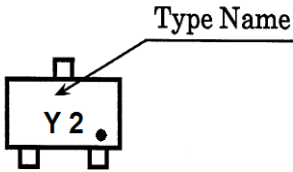
Start of commercial production
2005-04

Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	ICBO	V _{CB} = -50 V, I _E = 0 A	—	—	-100	nA
	ICEO	V _{CE} = -50 V, I _B = 0 A	—	—	-500	nA
Emitter cut-off current	IEBO	V _{EB} = -10 V, I _C = 0 A	-38	—	-72	μA
DC current gain	h _{FE}	V _{CE} = -5 V, I _C = -10 mA	100	—	—	—
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = -5 mA, I _B = -0.5 mA	—	-0.1	-0.3	V
Input voltage (ON)	V _{I(ON)}	V _{CE} = -0.2 V, I _C = -5 mA	-1.7	—	-8.2	V
Input voltage (OFF)	V _{I(OFF)}	V _{CE} = -5 V, I _C = -0.1 mA	-1.0	—	-1.6	V
Collector output capacitance	C _{ob}	V _{CB} = -10 V, I _E = 0 A, f = 1 MHz	—	0.9	—	pF
Input resistor	R1	—	70	100	130	kΩ
Resistor ratio	R1/R2	—	0.8	1.0	1.2	—



Marking

Type Name	Marking
RN2130MFV	

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