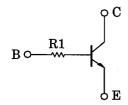
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# RN1310,RN1311

Switching, Inverter Circuit, Interface Circuit And Driver Circuit Applications

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN2310, RN2311

## **Equivalent Circuit**



## **Maximum Ratings (Ta = 25°C)**

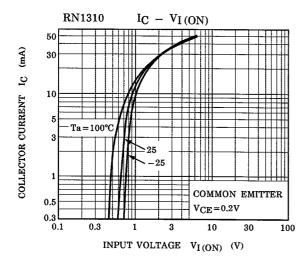
Characterisstic	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	50	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>c</sub>	100	mA
Collector power dissipation	Pc	100	mW
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	-55~150	°C

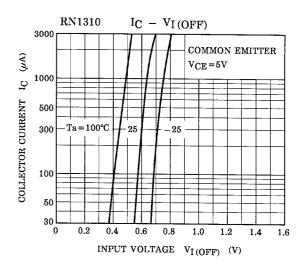
# 1. BASE 2. EMITTER 3. COLLECTOR JEDEC EIAJ SC-70 TOSHIBA 2.1±0.1 1.25±0.1

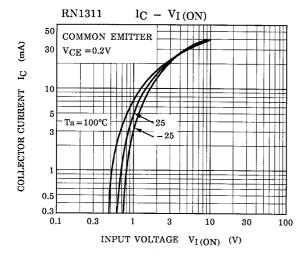
Weight: 0.006g

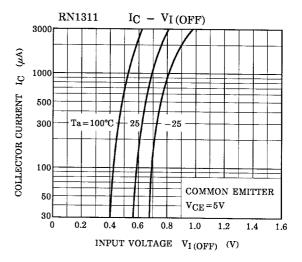
## **Electrical Characteristics (Ta = 25°C)**

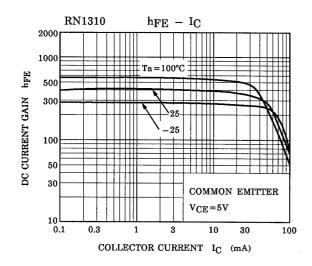
Characteristic		Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current		I <sub>CBO</sub>	_	V <sub>CB</sub> = 50V, I <sub>E</sub> = 0	_	_	100	nA
Emitter cut-off current		I <sub>EBO</sub>	_	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0	_	_	100	nA
DC current gain		h <sub>FE</sub>	_	$V_{CE}$ = 5V, $I_C$ = 1mA	120	_	700	-
Collector-emitter saturation voltage		V <sub>CE</sub> (sat)	_	I <sub>C</sub> = 5mA, I <sub>B</sub> = 0.25mA	_	0.1	0.3	V
Translation frequency		f <sub>T</sub>	_	V <sub>CE</sub> = 10V, I <sub>C</sub> = 5mA	1	250	1	MHz
Collector output capacitance		C <sub>ob</sub>	_	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	_	3	6	pF
Input resistor	RN1310	- R1	_	_	3.29	4.7	6.11	kΩ
	RN1311				7	10	13	

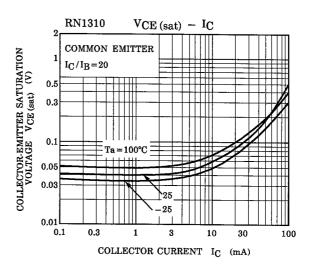


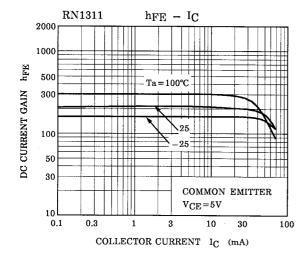


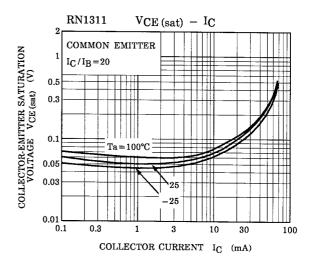












Type Name	Marking
RN1310	Type Name  X K
RN1311	Type Name  X M

4

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000707EAA

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