

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

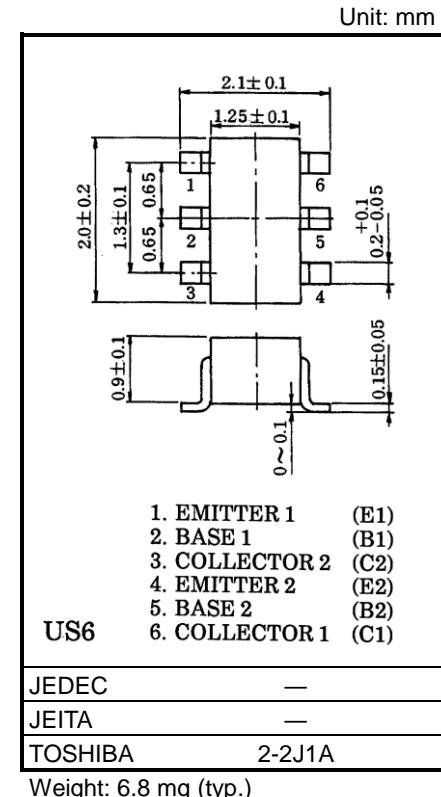
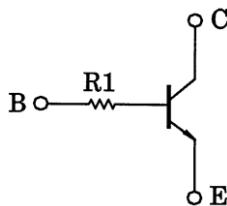
# RN1910, RN1911

## Switching, Inverter Circuit, Interface Circuit and Driver Circuit

- AEC-Q101 Qualified (Note1)
- Including two devices in US6 (ultra super mini type 6 leads)
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process and miniaturize equipment.
- Various resistance values are available to suit various circuit designs.
- Complementary to RN2910 and RN2911

Note1: For detail information, please contact to our sales.

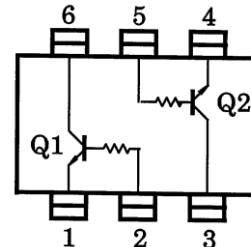
## Equivalent Circuit



## Equivalent Circuit (Top View)

## Absolute Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)

Characterisstic	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	50	V
Collector-emitter voltage	V <sub>CBO</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> *	200	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.).

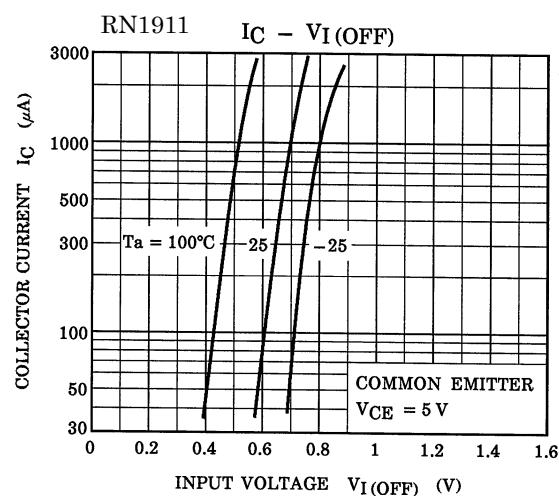
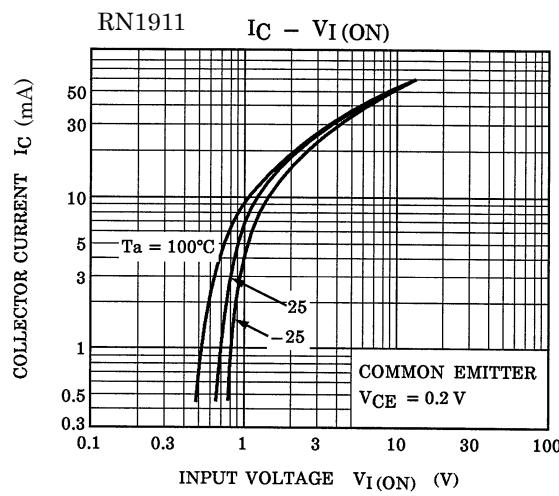
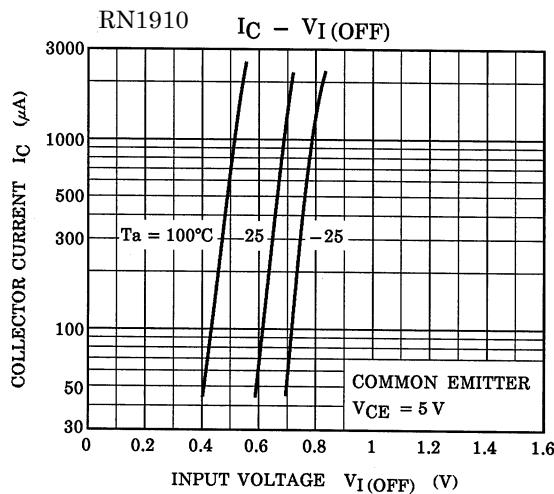
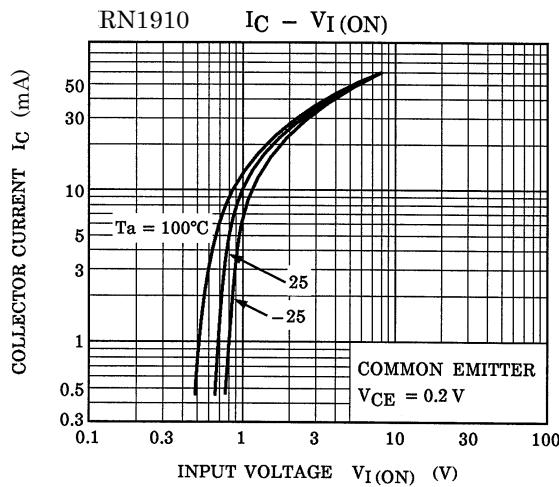
\*: Total rating

Start of commercial production  
1990-12

**Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)**

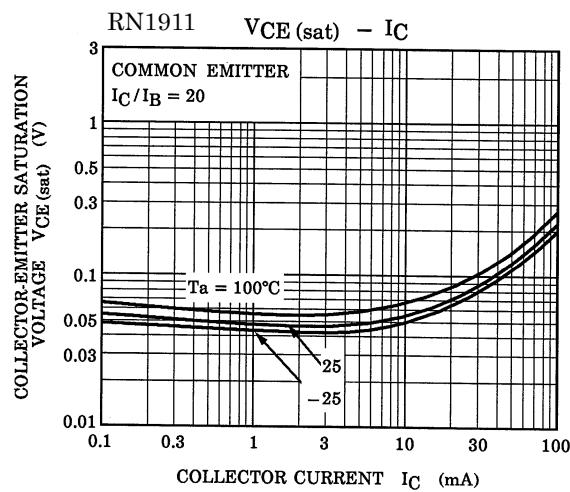
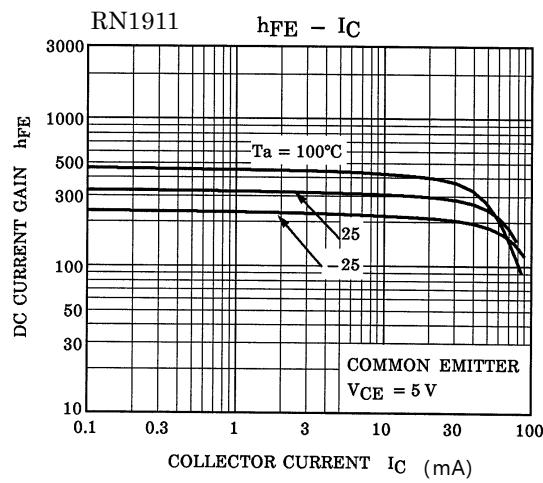
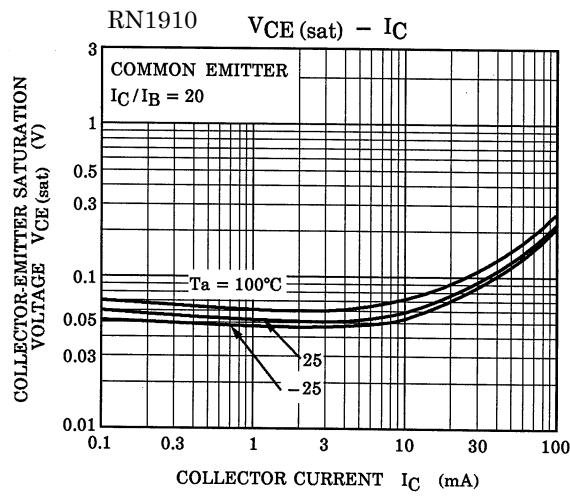
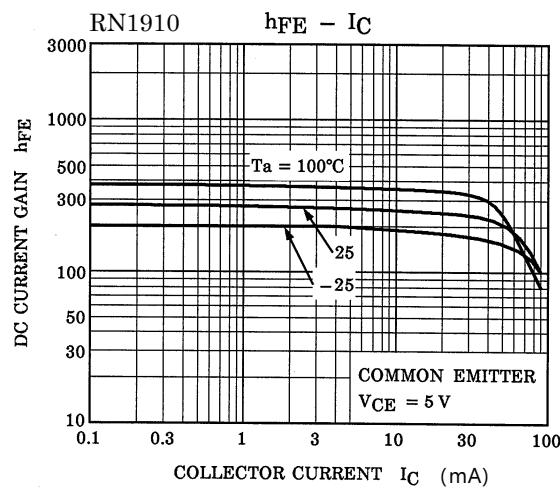
Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit	
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 50 V, I <sub>E</sub> = 0 mA	—	—	100	nA	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0 mA	—	—	100	nA	
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 1 mA	120	—	700	—	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 5 mA, I <sub>B</sub> = 0.25 mA	—	0.1	0.3	V	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 5 mA	—	250	—	MHz	
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0 V, f = 1 MHz	—	3	6	pF	
Input resistor	RN1910	R1	—	3.29	4.7	6.11	kΩ
	RN1911			7	10	13	

## Characteristics Curves (Q1, Q2 Common)



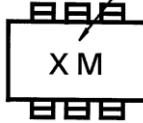
The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

### Characteristics Curves (Q1, Q2 Common)



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**Marking**

Part No.	Marking
RN1910	Part No.(abbreviation code) 
RN1911	Part No.(abbreviation code) 

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