

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

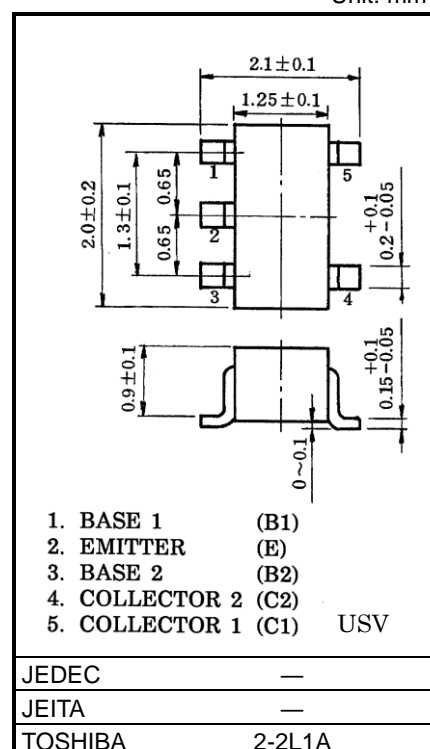
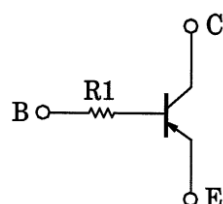
RN2710, RN2711

Unit: mm

Switching, Inverter Circuit,
Interface Circuit and Driver Circuit

- Including two devices in USV (ultra super mini type with 5 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 RN1710 and RN1711

Equivalent Circuit



Weight: 6.2 mg (typ.)

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

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	-50	V
Collector-emitter voltage	V _{CEO}	-50	V
Emitter-base voltage	V _{EBO}	-5	V
Collector current	I _C	-100	mA
Collector power dissipation	P _C *	200	mW
Junction temperature	T _j	150	°C
Storage temperature range	T _{stg}	-55 to 150	°C

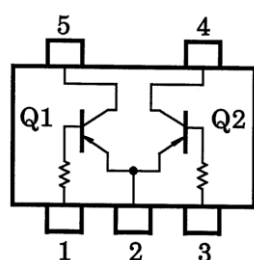
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

* : Total rating

Start of commercial production
1992-01

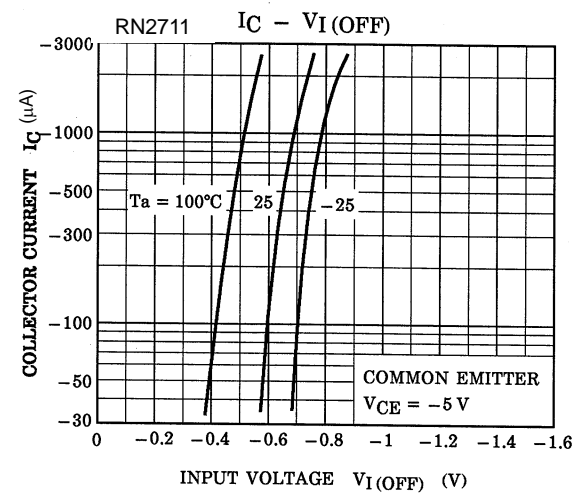
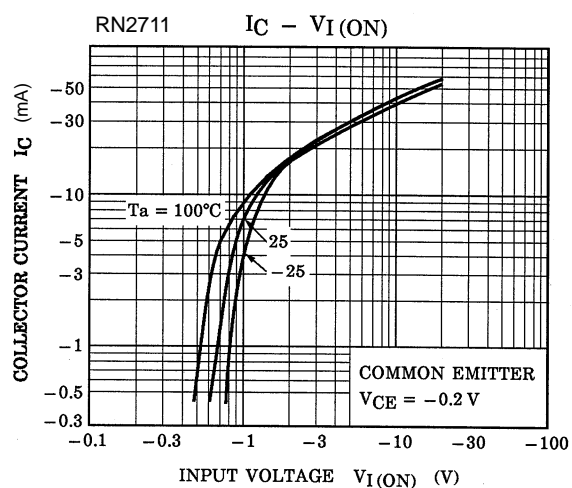
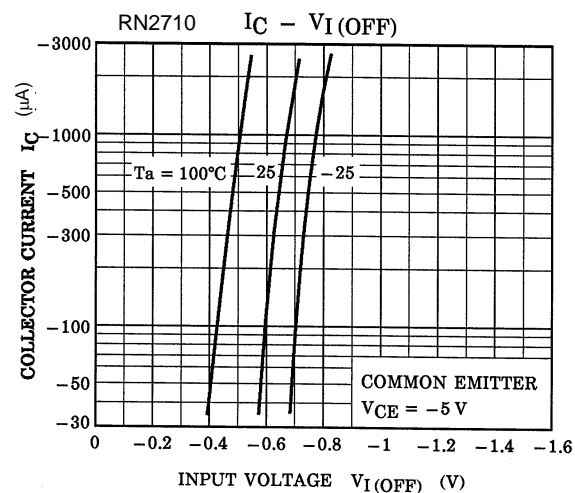
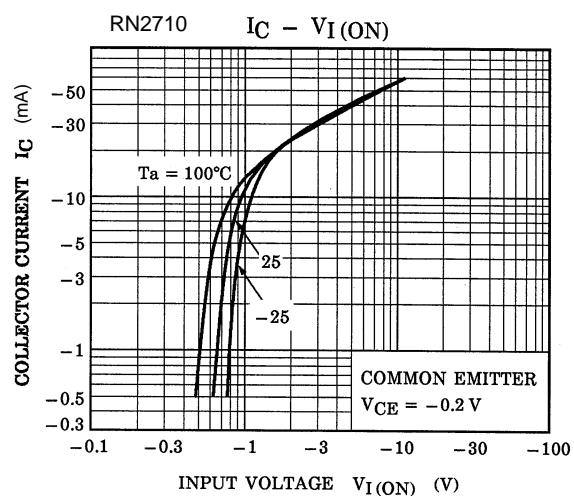
Equivalent Circuit (Top View)



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

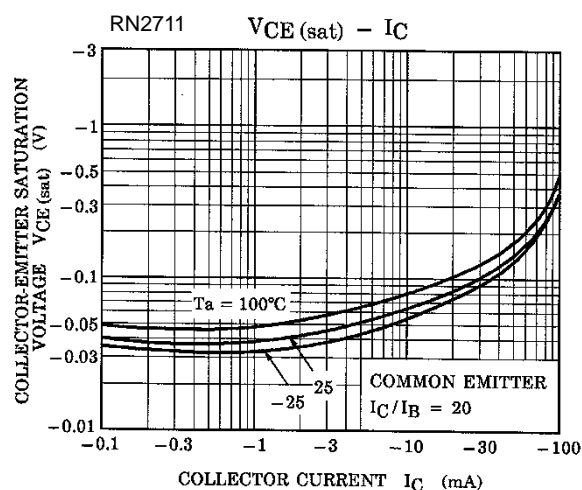
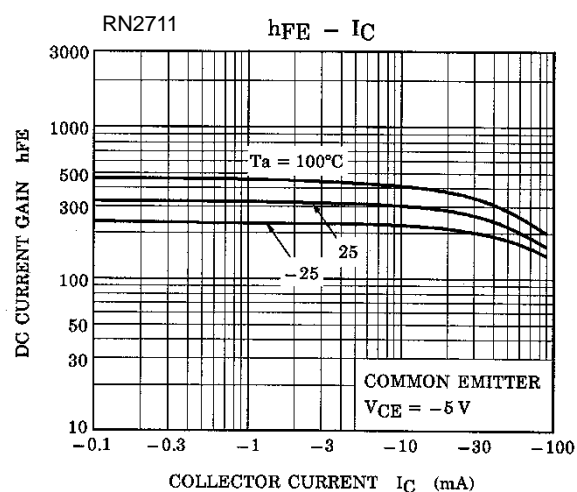
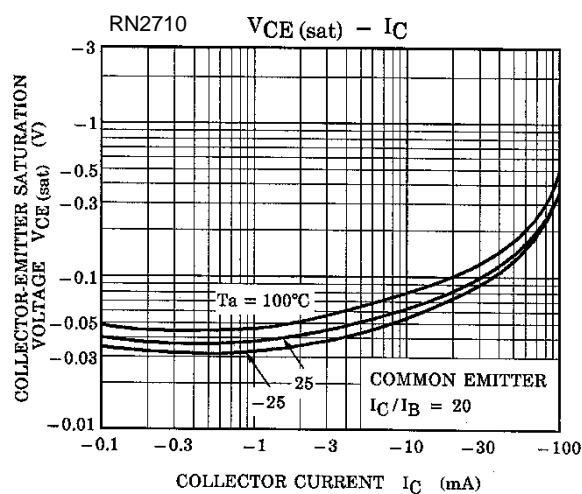
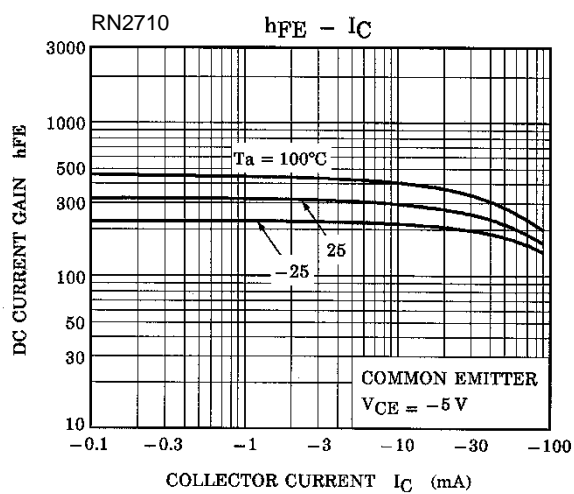
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	$V_{CB} = -50\text{ V}$, $I_E = 0\text{ mA}$	—	—	-100	nA
Emitter cut-off current	I_{EBO}	—	$V_{EB} = -5\text{ V}$, $I_C = 0\text{ mA}$	—	—	-100	nA
DC current gain	h_{FE}	—	$V_{CE} = -5\text{ V}$, $I_C = -1\text{ mA}$	120	—	400	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = -5\text{ mA}$, $I_B = -0.25\text{ mA}$	—	-0.1	-0.3	V
Transition frequency	f_T	—	$V_{CE} = -10\text{ V}$, $I_C = -5\text{ mA}$	—	200	—	MHz
Collector output capacitance	C_{ob}	—	$V_{CB} = -10\text{ V}$, $I_E = 0\text{ mA}$, $f = 1\text{ MHz}$	—	3	6	pF
Input resistor	RN2710	R1	—	3.29	4.7	6.11	kΩ
	RN2711			7	10	13	

Q1, Q2 Common



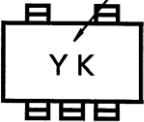
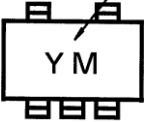
The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

Q1, Q2 Common



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

Marking

Part No.	Marking
RN2710	<p>Part No.(abbreviation code)</p> 
RN2711	<p>Part No.(abbreviation code)</p> 

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