

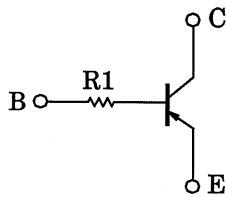
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor built-in Transistor)

RN2110, RN2111

Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications

- Built-in bias resistors
- Simplified circuit design
- Fewer parts and simplified manufacturing process
- Complementary to RN1110, RN1111

Equivalent Circuit



Absolute Maximum Ratings (Ta = 25°C)

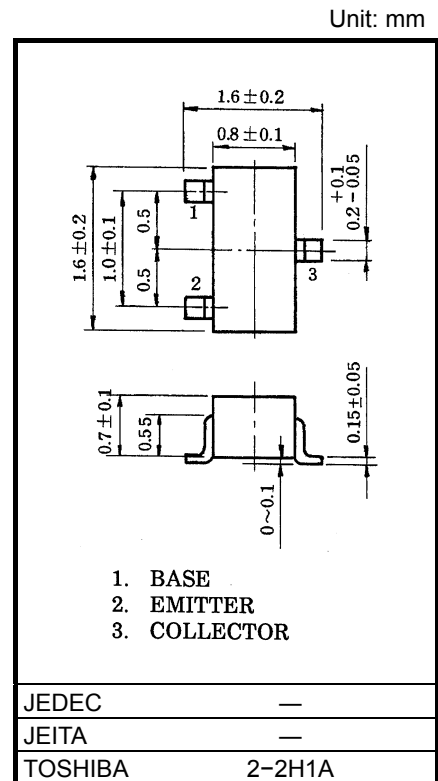
Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-100	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55 to 150	°C

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.

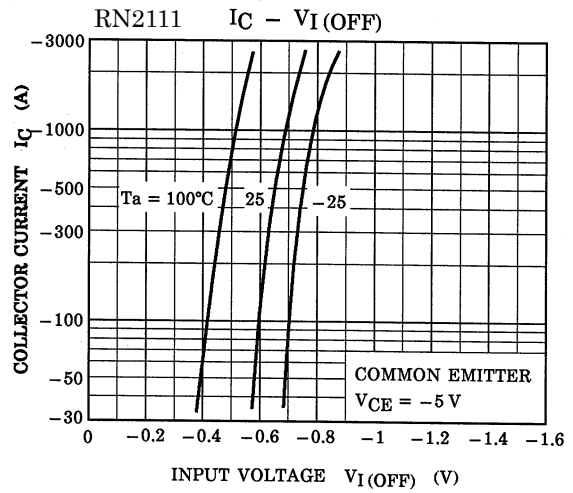
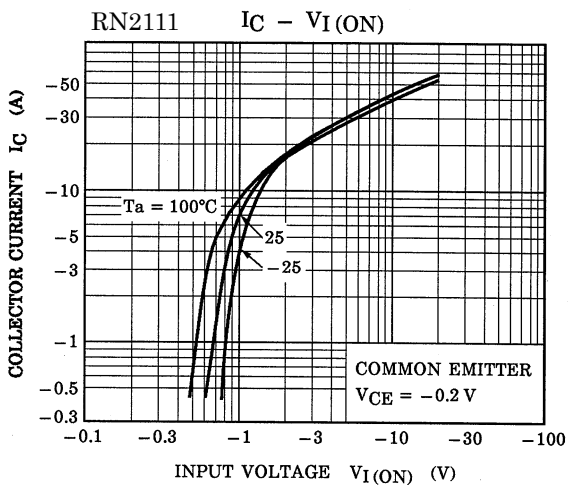
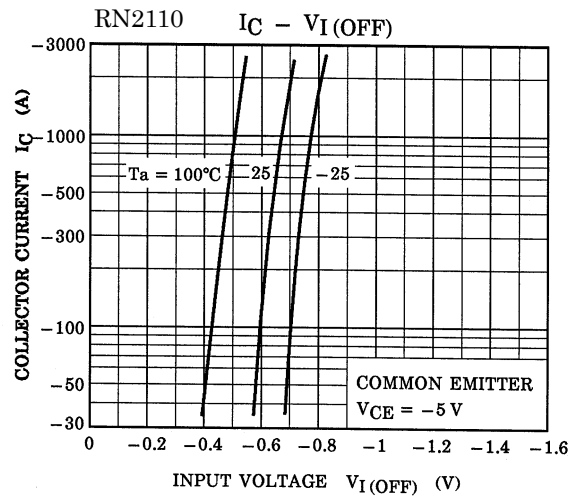
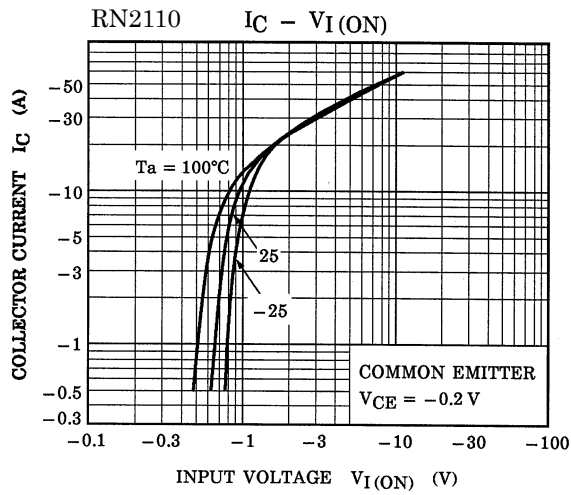
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

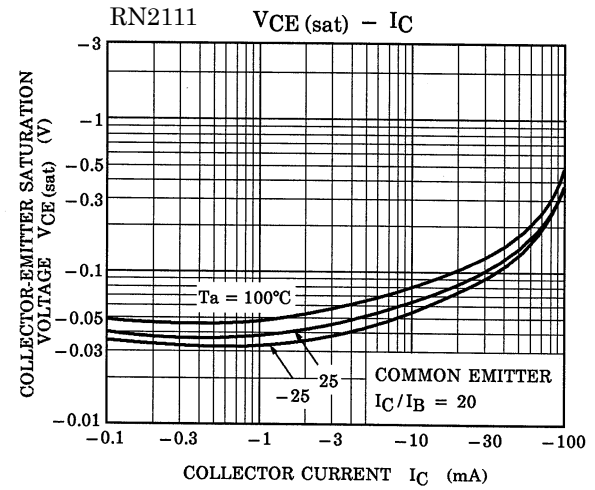
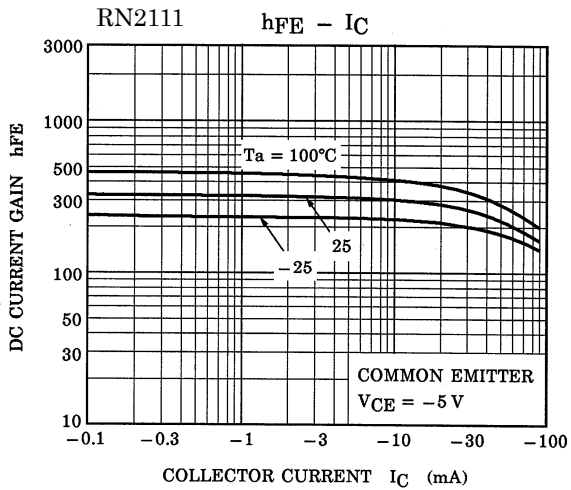
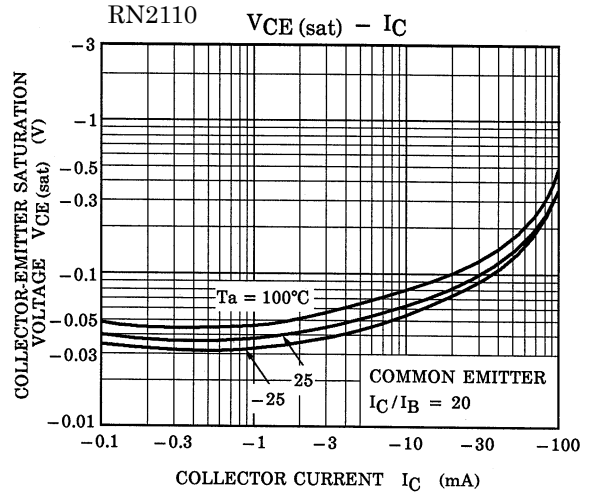
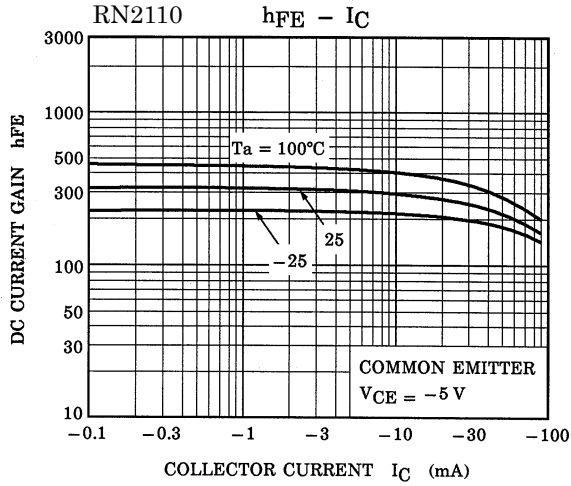
Electrical Characteristics (Ta = 25°C)

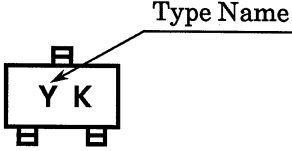
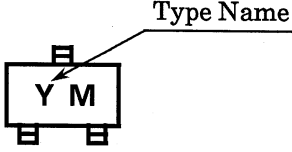
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-100	nA
Emitter cut-off current	I_{EBO}	—	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-100	nA
DC current gain	h_{FE}	—	$V_{CE} = -5\text{ V}, I_C = -1\text{ mA}$	120	—	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}	—	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	3	6	pF
Input resistor	RN2110	R1	—	3.29	4.7	6.11	kΩ
	RN2111			7	10	13	



Start of commercial production
1990-12





Type Name	Marking
RN2110	 <p>The diagram shows a rectangular component with two pins at the bottom. Inside the rectangle, the letters 'Y K' are printed. An arrow points from the text 'Type Name' to the 'Y' character.</p>
RN2111	 <p>The diagram shows a rectangular component with two pins at the bottom. Inside the rectangle, the letters 'Y M' are printed. An arrow points from the text 'Type Name' to the 'Y' character.</p>

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