

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

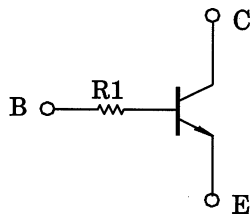
RN1110F, RN1111F

Switching, Inverter Circuit, Interface Circuit
And Driver Circuit Applications

Unit: mm

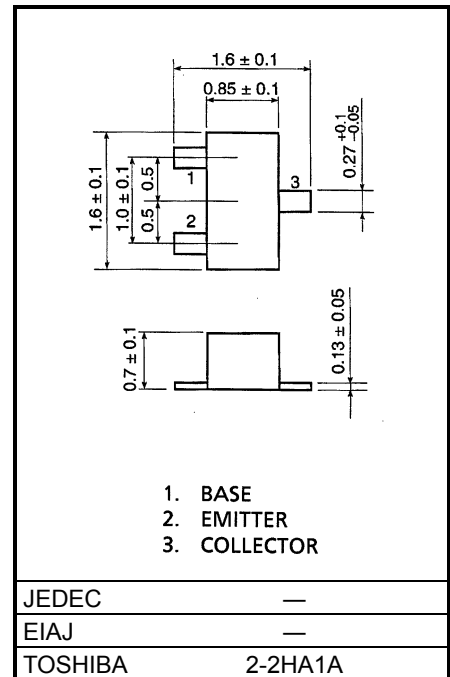
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN2110F, RN2111F

Equivalent Circuit



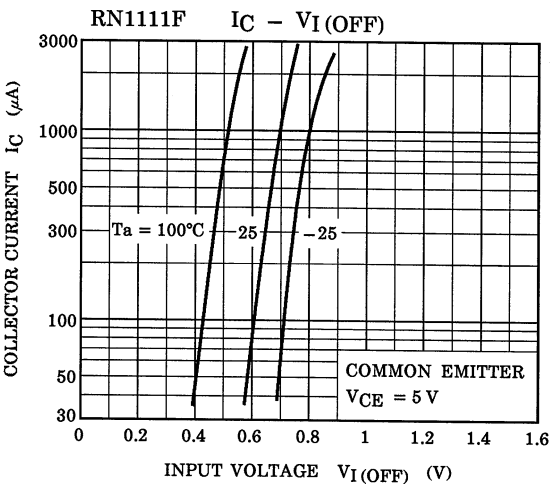
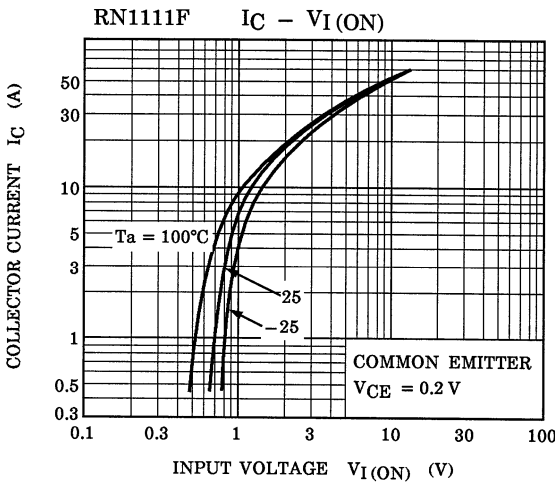
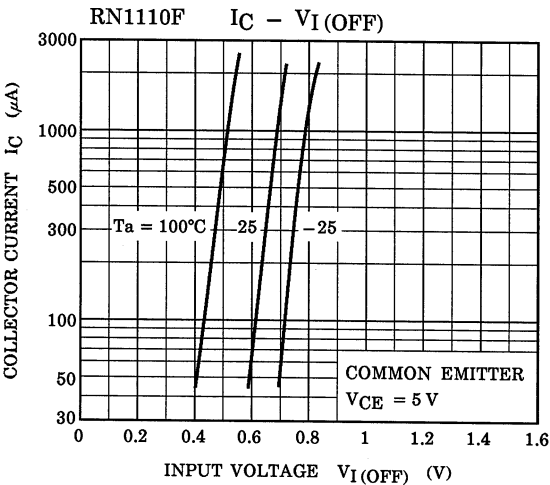
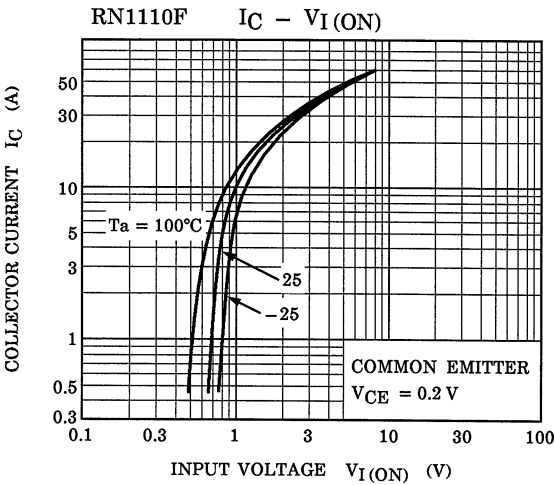
Maximum Ratings (Ta = 25°C)

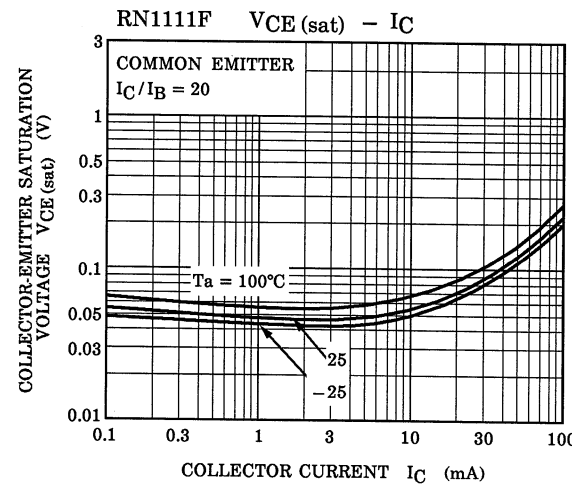
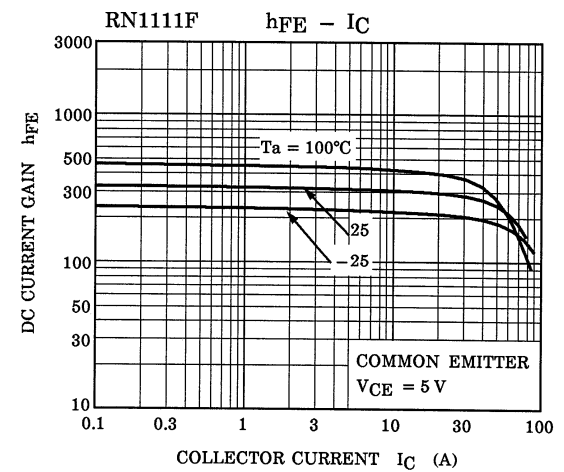
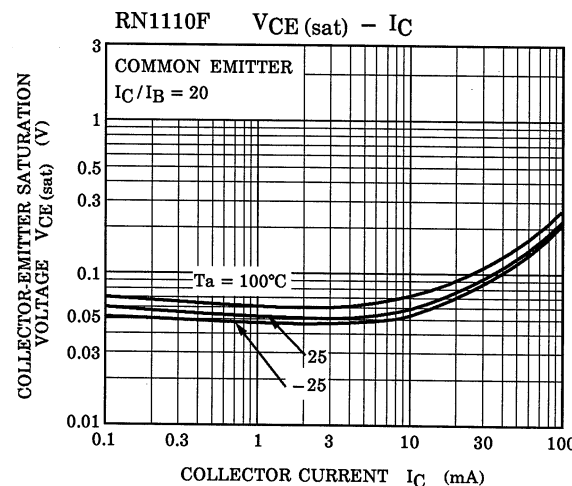
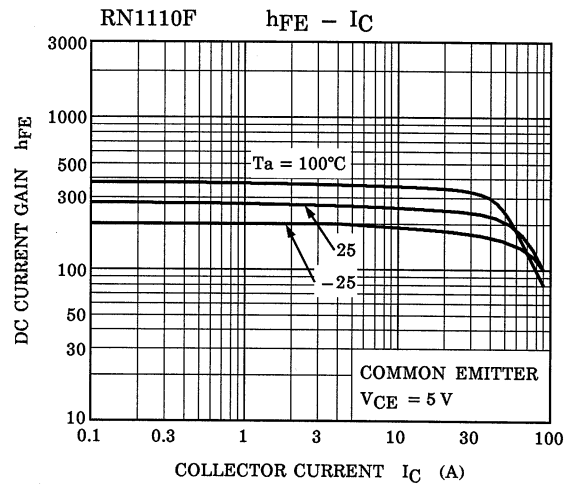
Characterisitic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55~150	°C

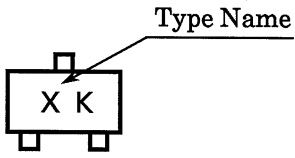
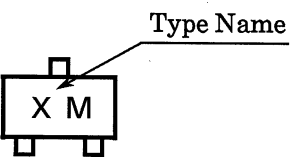


Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	$V_{CB} = 50V, I_E = 0$	—	—	100	nA
Emitter cut-off current	I_{EBO}	—	$V_{EB} = 5V, I_C = 0$	—	—	100	nA
DC current gain	h_{FE}		$V_{CE} = 5V, I_C = 1mA$	120	—	700	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = 5mA, I_B = 0.25mA$	—	0.1	0.3	V
Translation frequency	f_T	—	$V_{CE} = 10V, I_C = 5mA$	—	250	—	MHz
Collector output capacitance	C_{ob}		$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	3	6	pF
Input resistor	RN1110F	R1	—	3.29	4.7	6.11	kΩ
	RN1111F			7	10	13	





Type Name	Marking
RN1110F	 The diagram shows a rectangular component with two small square mounting tabs at the bottom. Inside the rectangle, the characters 'X' and 'K' are printed. An arrow points from the text 'Type Name' to the 'K' character.
RN1111F	 The diagram shows a rectangular component with two small square mounting tabs at the bottom. Inside the rectangle, the characters 'X' and 'M' are printed. An arrow points from the text 'Type Name' to the 'M' character.

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