

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

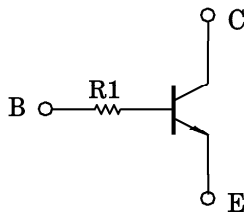
RN1110F, RN1111F

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

Unit in mm

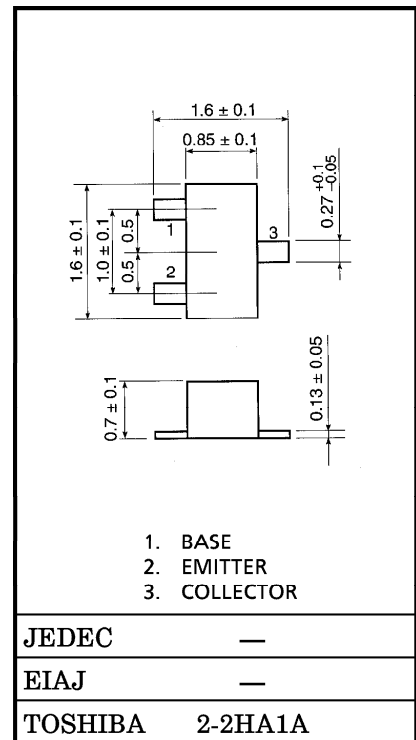
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN2110F, RN2111F

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	50	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EB0}	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

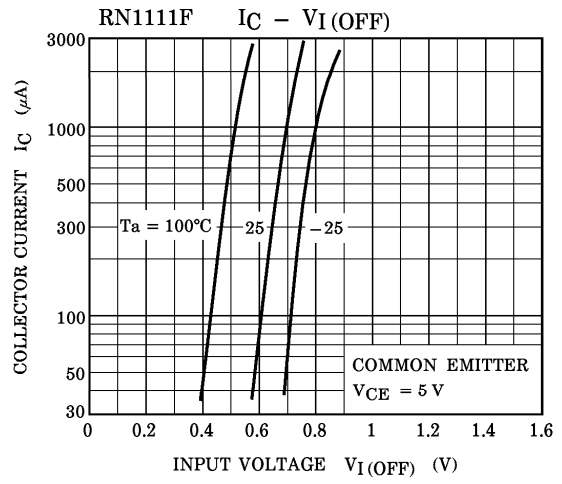
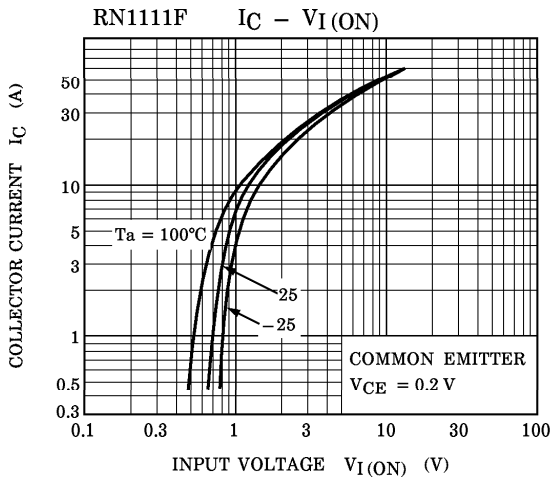
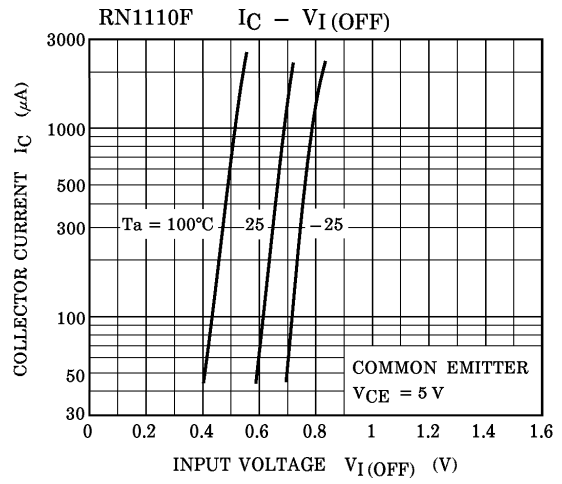
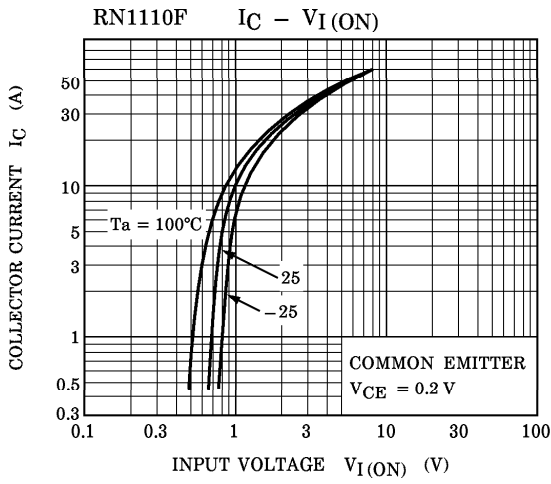


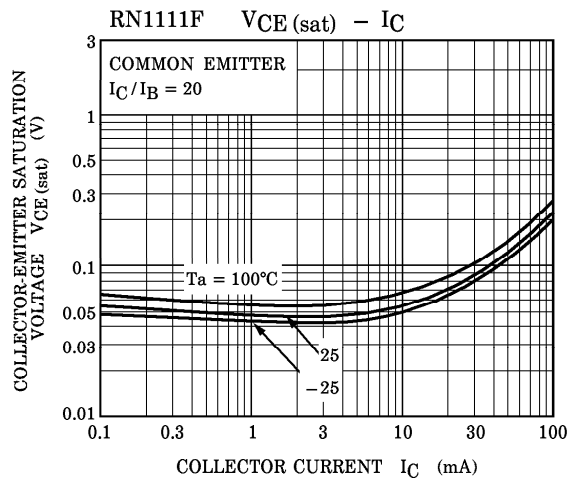
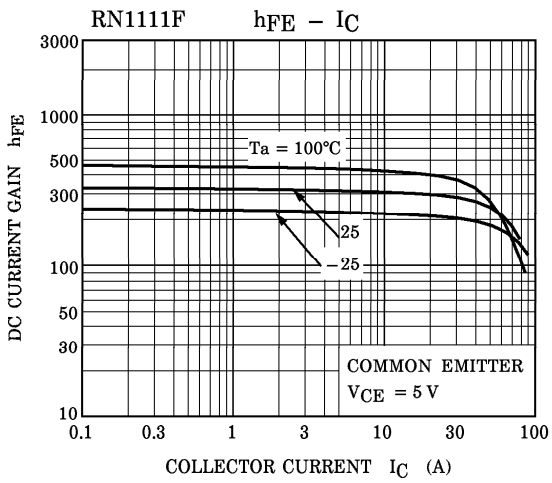
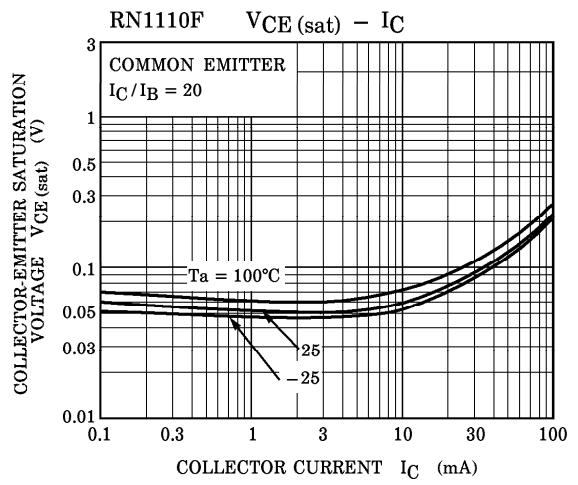
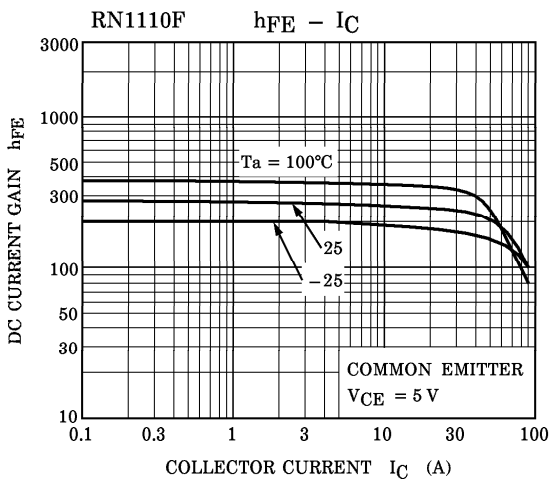
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

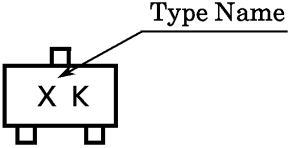
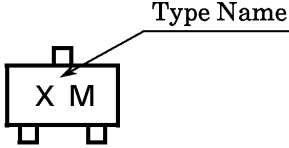
CHARACTERISTIC	SYMBOL	TEST CONSION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I _{CBO}	V _{CB} = 50 V, I _E = 0	—	—	100	nA	
Emitter Cut-off Current	I _{EBO}	V _{EB} = 5 V, I _C = 0	—	—	100	nA	
DC Current Gain	h _{FE}	V _{CE} = 5 V, I _C = 1 mA	120	—	700		
Collector-Emitter Saturation Voltage	V _{CE (sat)}	I _C = 5 mA, I _B = 0.25 mA	—	0.1	0.3	V	
Transition Frequency	f _T	V _{CE} = 10 V, I _C = 5 mA	—	250	—	MHz	
Collector Output Capacitance	C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz	—	3	6	pF	
Input Resistor	RN1111F	R1	—	3.29	4.7	6.11	kΩ
	RN1110F			7	10	13	

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TYPE NAME	MARKING
RN1110F	 A diagram of a rectangular component with a small square protrusion on top and two small square protrusions on the bottom. The letters 'X K' are printed inside the rectangle. An arrow points from the text 'Type Name' to the 'K' in 'X K'.
RN1111F	 A diagram of a rectangular component with a small square protrusion on top and two small square protrusions on the bottom. The letters 'X M' are printed inside the rectangle. An arrow points from the text 'Type Name' to the 'M' in 'X M'.