

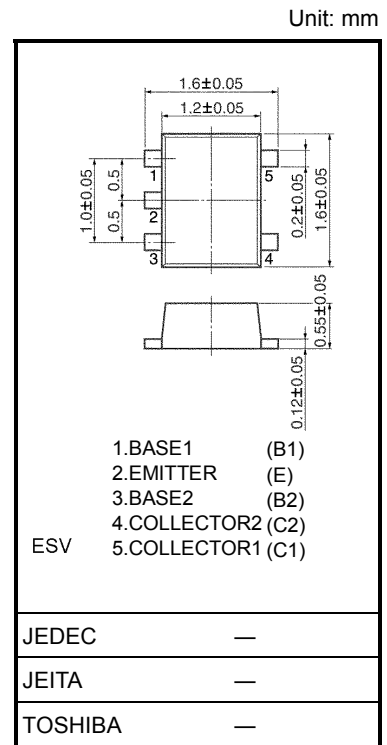
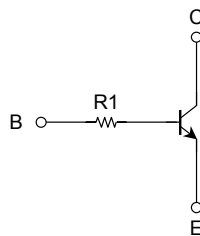
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN1710JE,RN1711JE

Switching, Inverter Circuit, Interface Circuit and
Driver Circuit Applications

- Two devices are incorporated into an Extreme-Super-Mini (5 pin) package.
- Incorporating a bias resistor into a transistor reduces parts count.
Reducing the parts count enable the manufacture of ever more compact equipment and save assembly cost.
- Wide range of resistor values are available to use in various circuit designs.
- Complementary to RN2710JE~RN2711JE

Equivalent Circuit and Bias Resistor Values



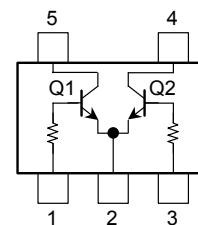
Weight: 0.003 g (typ.)

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	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 (Note)	100	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55~150	°C

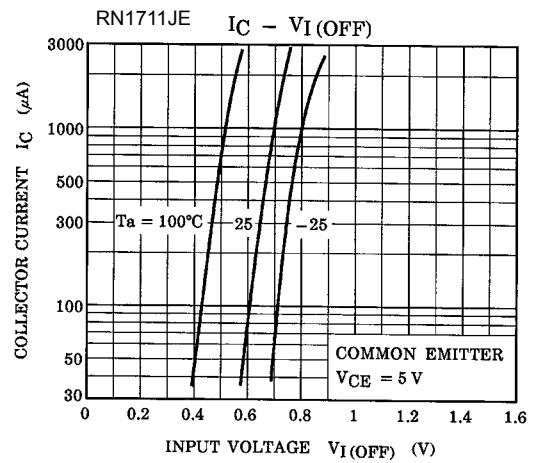
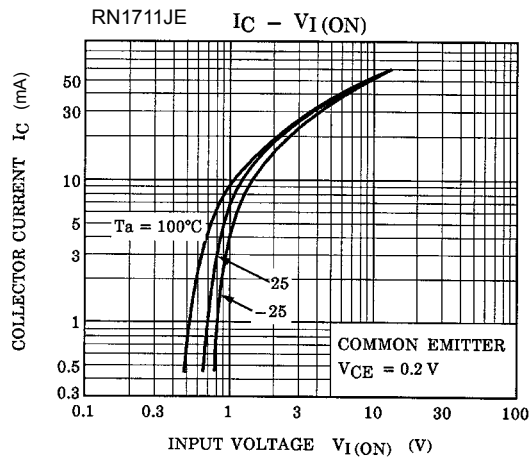
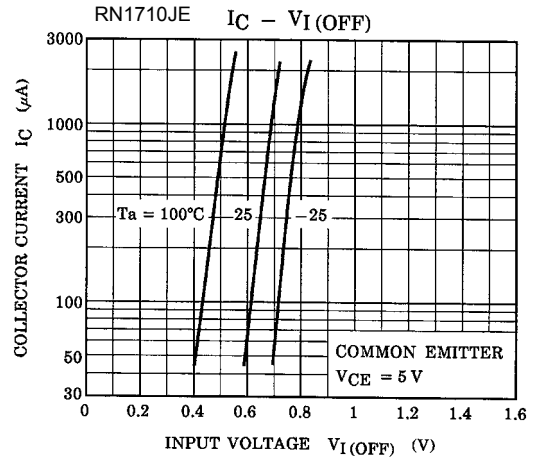
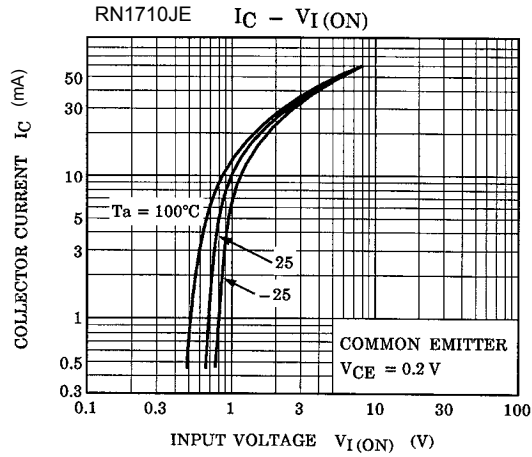
Note: Total rating

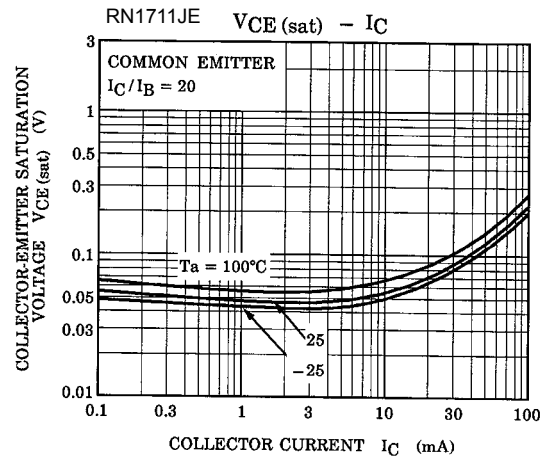
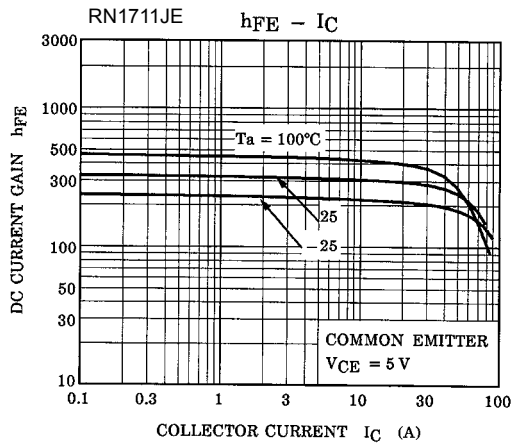
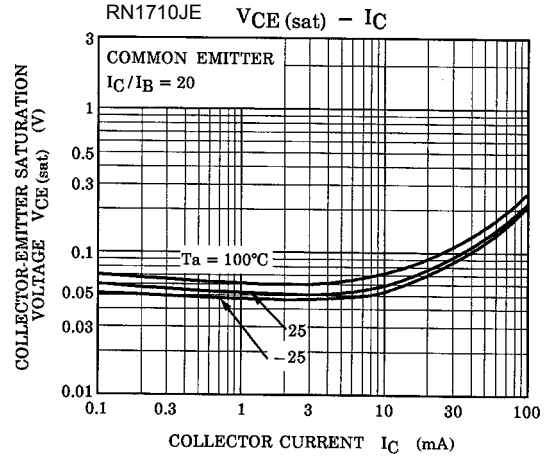
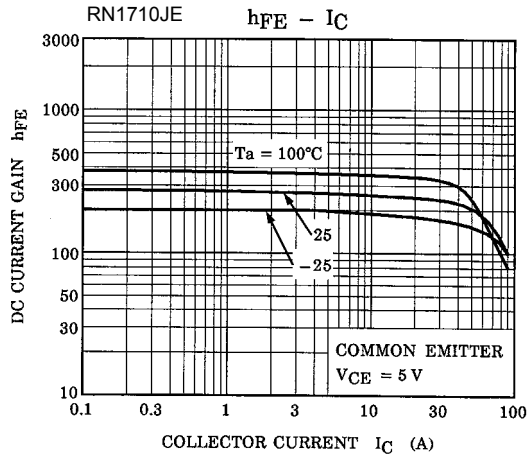
Equivalent Circuit (top view)

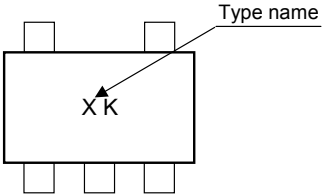
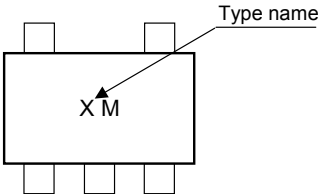


Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

Characteristics		Symbol	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	—	700	
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	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	—	250	—	MHz
Collector output capacitance		C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	3	6	pF
Input resistor	RN1710JE	R1	—	3.29	4.7	6.11	kΩ
	RN1711JE			7	10	13	





Type Name	Marking
RN1710JE	 <p>The diagram shows a rectangular component with four pins: two on the top edge and two on the bottom edge. Inside the rectangle, the marking 'X K' is shown. An arrow points from the text 'Type name' to the letter 'K'.</p>
RN1711JE	 <p>The diagram shows a rectangular component with four pins: two on the top edge and two on the bottom edge. Inside the rectangle, the marking 'X M' is shown. An arrow points from the text 'Type name' to the letter 'M'.</p>

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