

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

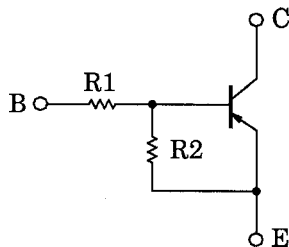
RN2707, RN2708, RN2709

Switching, Inverter Circuit, Interface Circuit
And Driver Circuit Applications

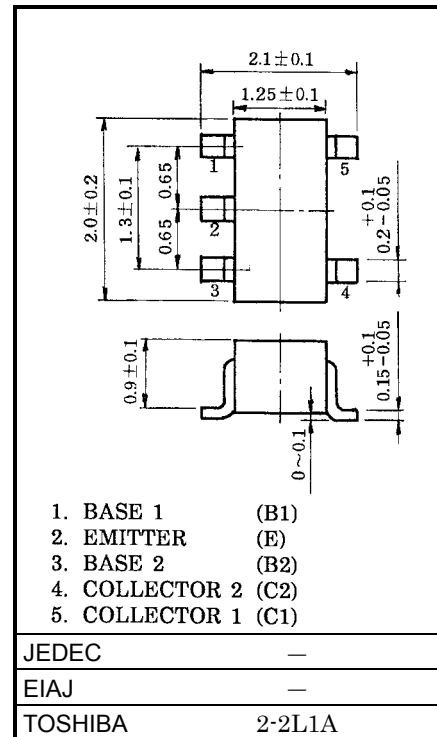
Unit in mm

- 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
- Complementary to RN1707~RN1709

Equivalent Circuit and Bias Resistor Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN2707	10	47
RN2708	22	47
RN2709	47	22

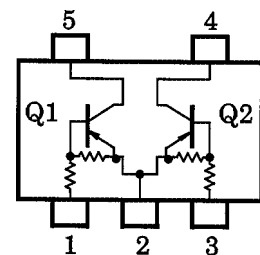


Weight: 6.2mg

Equivalent Circuit (Top View)

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

Characteristic	Symbol	Rating	Unit				
Collector-base voltage	RN2707~2709	V _{CB0}	-50	V			
Collector-emitter voltage					V _{CEO}	-50	V
Emitter-base voltage	RN2707	V _{EBO}	-6	V			
	RN2708		-7				
	RN2709		-15				
Collector current	RN2707~2709	I _C	-100	mA			
Collector power dissipation					P _C *	200	mW
Junction temperature					T _j	150	°C
Storage temperature range					T _{stg}	-55~150	°C



* : Total rating

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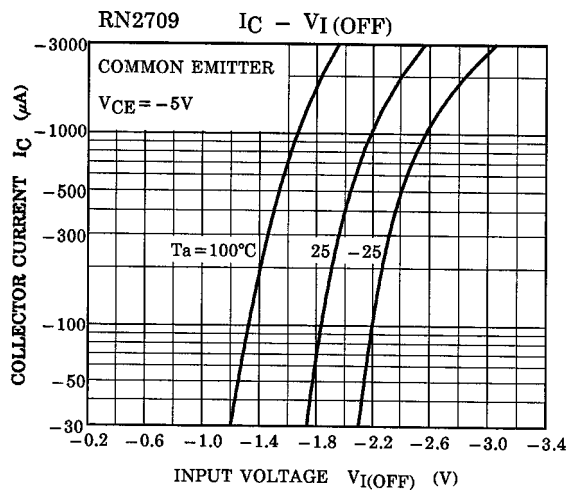
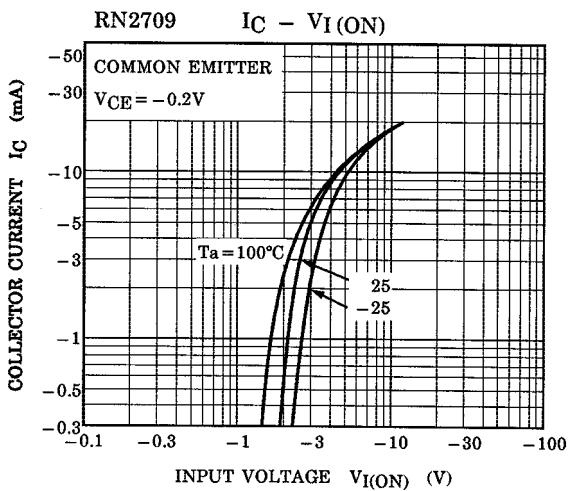
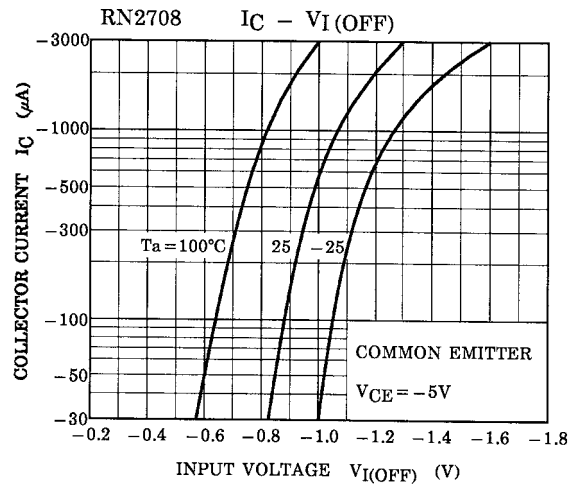
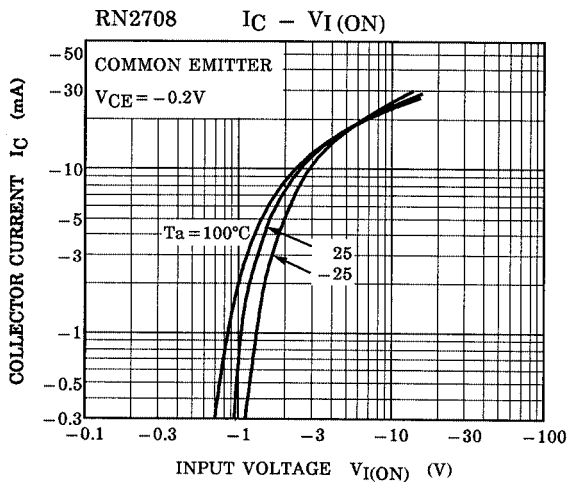
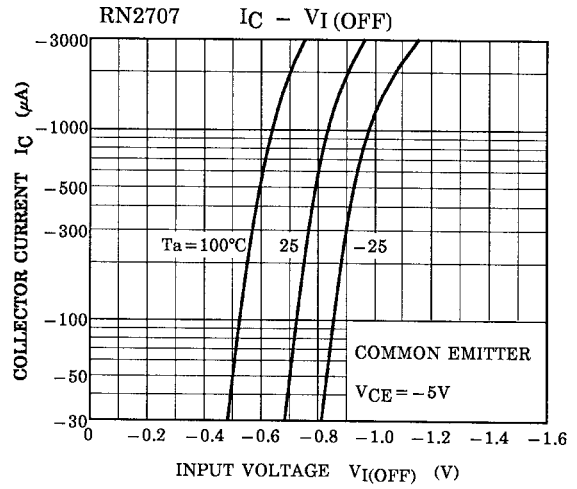
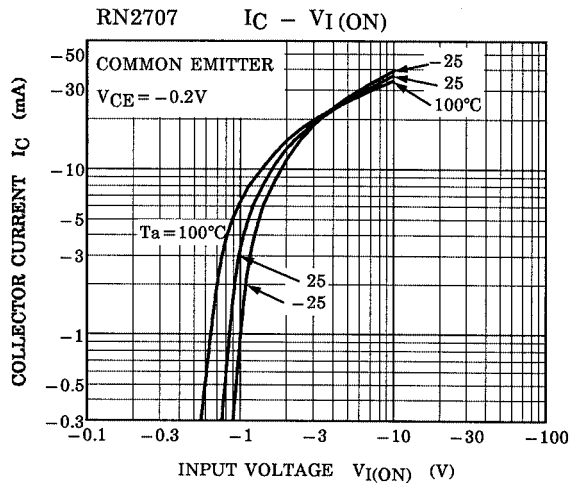
Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2707~2709	ICBO	—	V _{CB} = -50V, I _E = 0	—	—	-100	nA
		ICEO	—	V _{CE} = -50V, I _B = 0	—	—	-500	nA
Emitter cut-off current	RN2707	IEBO	—	V _{EB} = -6V, I _C = 0	-0.081	—	-0.15	mA
	RN2708		—	V _{EB} = -7V, I _C = 0	-0.078	—	-0.145	
	RN2709		—	V _{EB} = -15V, I _C = 0	-0.167	—	-0.311	
DC current gain	RN2707	h _{FE}	—	V _{CE} = -5V, I _C = -10mA	80	—	—	—
	RN2708		—		80	—	—	
	RN2709		—		70	—	—	
Collector-emitter saturation voltage	RN2707~2709	V _{CE (sat)}	—	I _C = -5mA, I _B = -0.25mA	—	-0.1	-0.3	V
Input voltage (ON)	RN2707	V _{I (ON)}	—	V _{CE} = -0.2V, I _C = -5mA	-0.7	—	-1.8	V
	RN2708		—		-1.0	—	-2.6	
	RN2709		—		-2.2	—	-5.8	
Input voltage (OFF)	RN2707	V _{I (OFF)}	—	V _{CE} = -5V, I _C = -0.1mA	-0.5	—	-1.0	V
	RN2708		—		-0.6	—	-1.16	
	RN2709		—		-1.5	—	-2.6	
Translation frequency	RN2707~2709	f _T	—	V _{CE} = -10V, I _C = -5mA	—	200	—	MHz
Collector output capacitance	RN2707~2709	C _{ob}	—	V _{CB} = -10V, I _E = 0, f = 1MHz	—	3	6	pF
Input resistor	RN2707	R1	—	—	7	10	13	kΩ
	RN2708		—		15.4	22	28.6	
	RN2709		—		32.9	47	61.1	
Resistor ratio	RN2707	R1/R2	—	—	0.191	0.213	0.232	—
	RN2708		—		0.421	0.468	0.515	
	RN2709		—		1.92	2.14	2.35	

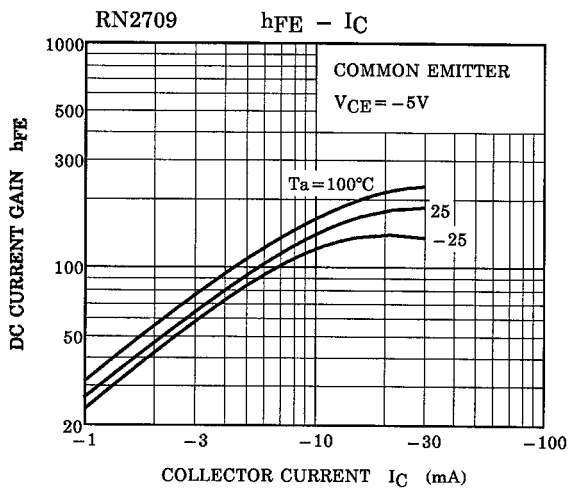
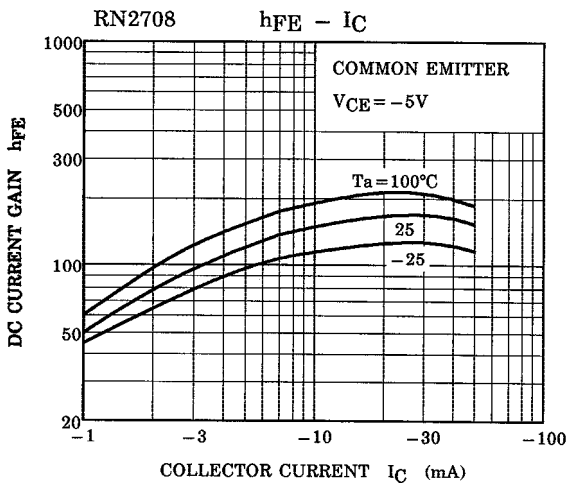
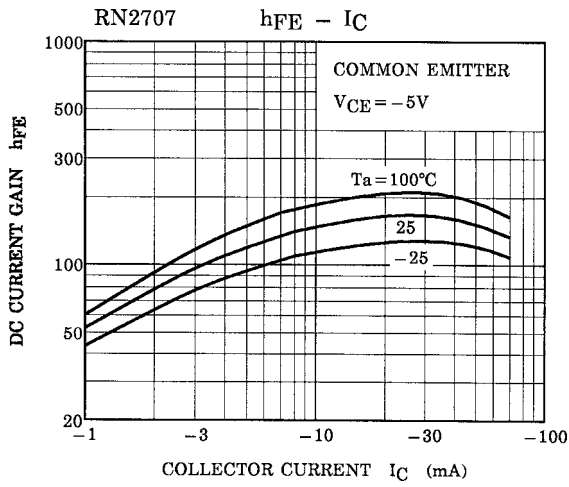
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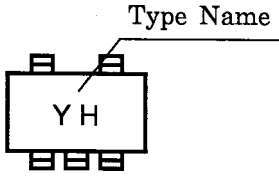
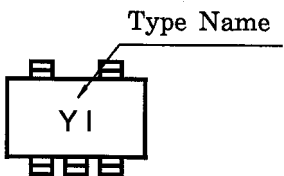
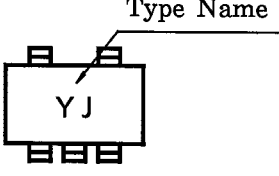
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(Q1, Q2 Common)



(Q1, Q2 Common)



Type Name	Marking
RN2707	 A schematic diagram of a rectangular component with two pins on the top and three pins on the bottom. The letters 'YH' are printed in the center. A line points from the text 'Type Name' above to the 'Y' in the marking.
RN2708	 A schematic diagram of a rectangular component with two pins on the top and three pins on the bottom. The letters 'YI' are printed in the center. A line points from the text 'Type Name' above to the 'Y' in the marking.
RN2709	 A schematic diagram of a rectangular component with two pins on the top and three pins on the bottom. The letters 'YJ' are printed in the center. A line points from the text 'Type Name' above to the 'Y' in the marking.