

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

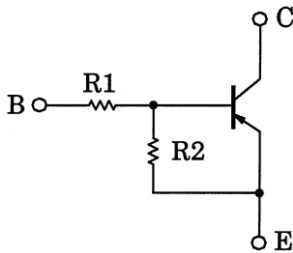
RN2907, RN2908, RN2909

Switching, Inverter Circuit, Interface Circuit and Driver Circuit

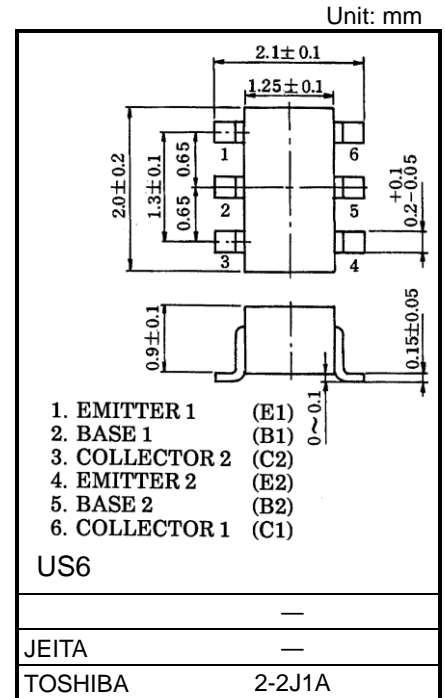
- AEC-Q101 Qualified (Note1)
- Including two devices in US6 (ultra super mini type with 6 leads)
- With built-in bias resistors.
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process and miniaturize equipment.
- Various resistance values are available to suit various circuit designs.
- Complementary to RN1907 to RN1909

Note1: For detail information, please contact to our sales.

Equivalent Circuit and Bias Resistor Values



Part No.	R1 (kΩ)	R2 (kΩ)
RN2907	10	47
RN2908	22	47
RN2909	47	22

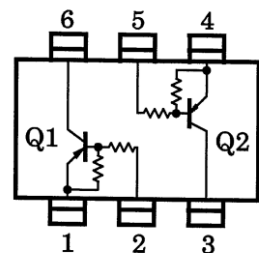


Weight: 6.8 mg (typ.)

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

Characteristic		Symbol	Rating	Unit
Collector-base voltage	RN2907 to 2909	V _{CBO}	-50	V
Collector-emitter voltage		V _{CEO}	-50	V
Emitter-base voltage	RN2907	V _{EBO}	-6	V
	RN2908		-7	
	RN2909		-15	
Collector current	RN2907 to 2909	I _C	-100	mA
Collector power dissipation		P _C *	200	mW
Junction temperature		T _j	150	°C
Storage temperature range		T _{stg}	-55 to 150	°C

Equivalent Circuit (Top View)



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).

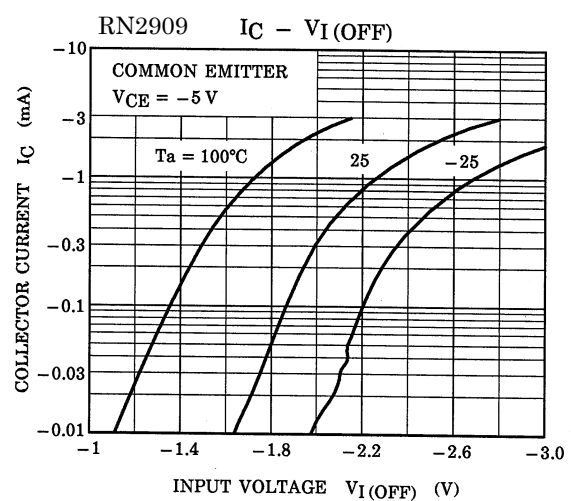
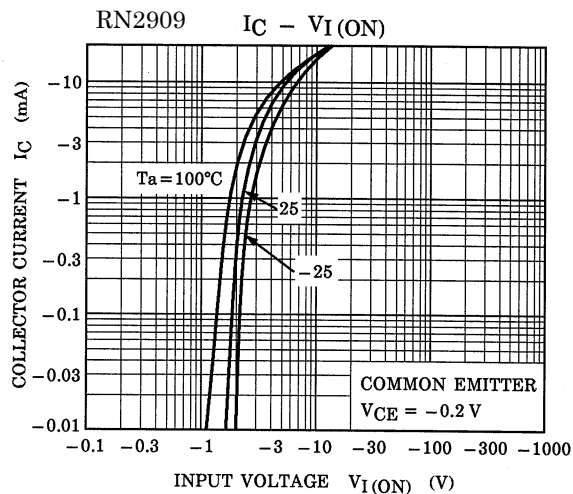
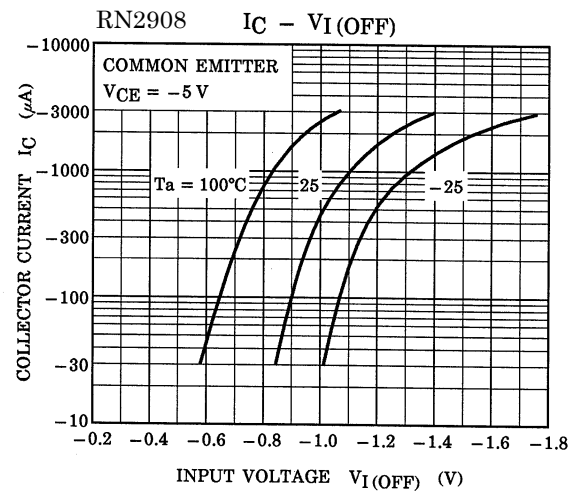
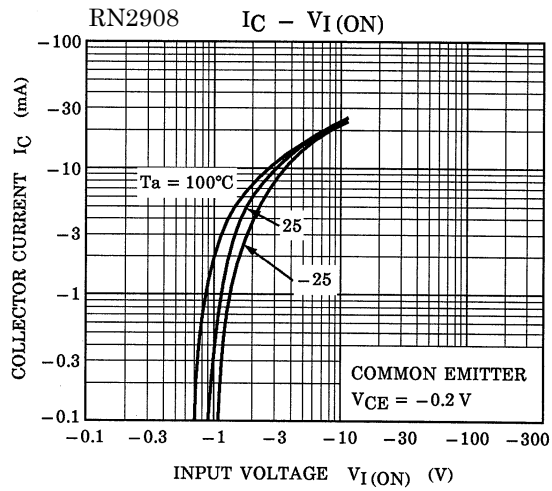
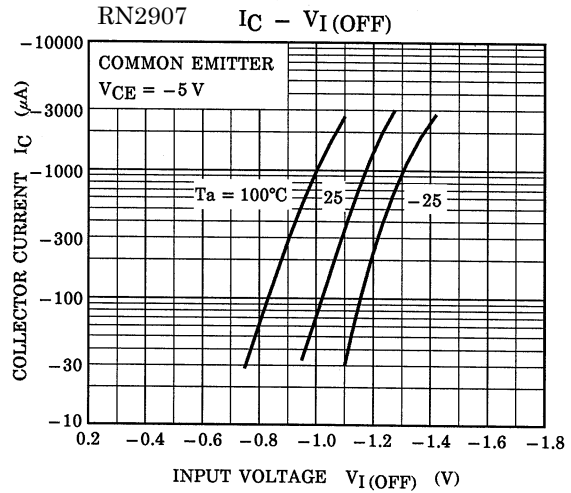
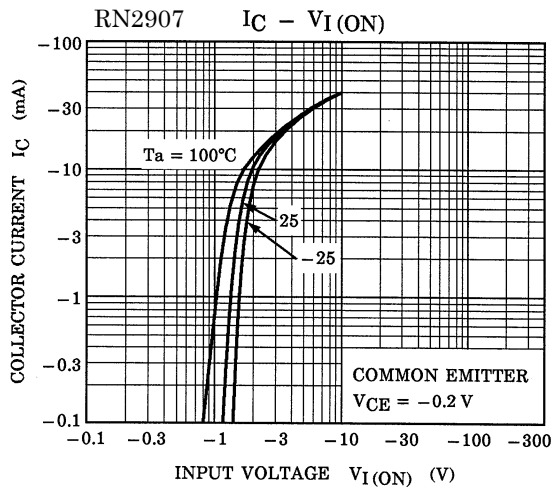
* : Total rating

Start of commercial production
1990-12

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

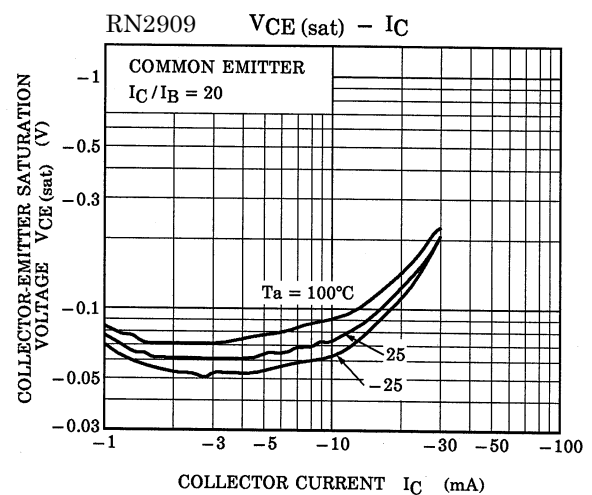
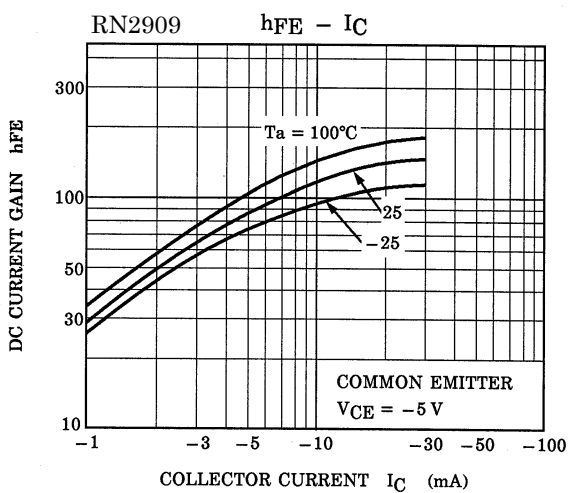
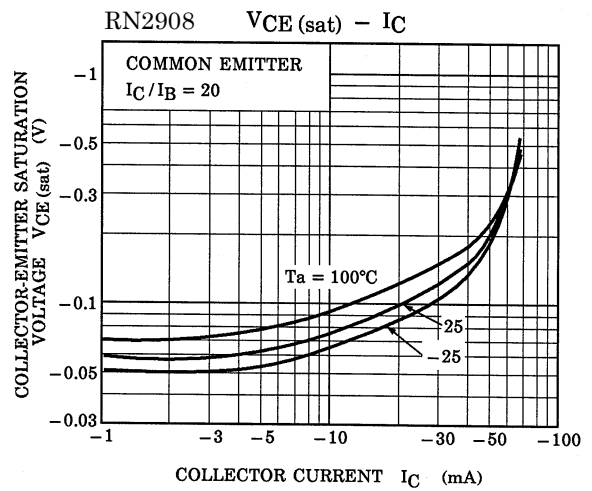
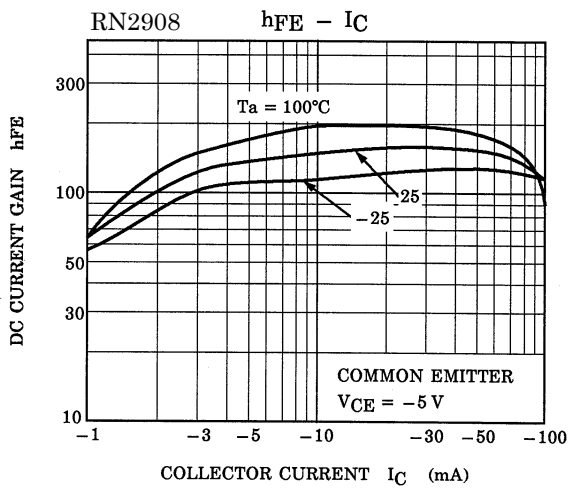
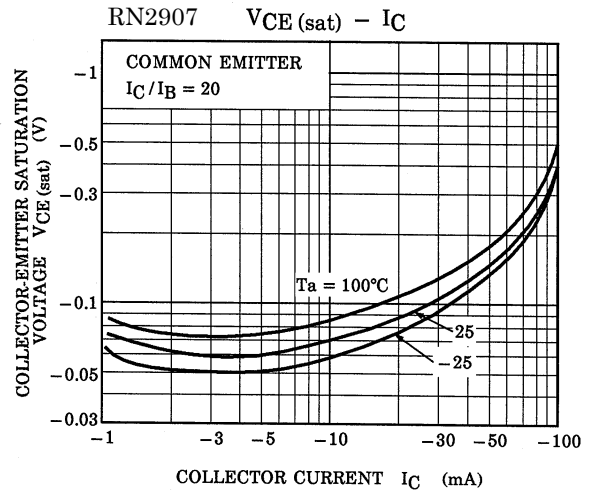
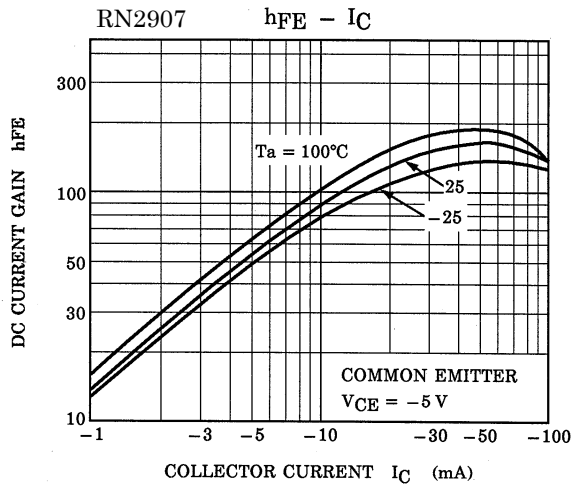
Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2907 to 2909	ICBO	V _{CB} = -50 V, I _E = 0 mA	—	—	-100	nA
		ICEO	V _{CE} = -50 V, I _B = 0 mA	—	—	-500	nA
Emitter cut-off current	RN2907	IEBO	V _{EB} = -6 V, I _C = 0 mA	-0.081	—	-0.15	mA
	RN2908		V _{EB} = -7 V, I _C = 0 mA	-0.078	—	-0.145	
	RN2909		V _{EB} = -15 V, I _C = 0 mA	-0.167	—	-0.311	
DC current gain	RN2907	h _{FE}	V _{CE} = -5 V, I _C = -10 mA	80	—	—	—
	RN2908			80	—	—	
	RN2909			70	—	—	
Collector-emitter saturation voltage	RN2907 to 2909	V _{CE (sat)}	I _C = -5 mA, I _B = -0.25 mA	—	-0.1	-0.3	V
Input voltage (ON)	RN2907	V _{I (ON)}	V _{CE} = -0.2 V, I _C = -5 mA	-0.7	—	-1.8	V
	RN2908			-1.0	—	-2.6	
	RN2909			-2.2	—	-5.8	
Input voltage (OFF)	RN2907	V _{I (OFF)}	V _{CE} = -5 V, I _C = -0.1 mA	-0.5	—	-1.0	V
	RN2908			-0.6	—	-1.16	
	RN2909			-1.5	—	-2.6	
Translation frequency	RN2907 to 2909	f _T	V _{CE} = -10 V, I _C = -5mA	—	200	—	MHz
Collector output capacitance	RN2907 to 2909	C _{ob}	V _{CB} = -10 V, I _E = 0 mA, f = 1 MHz	—	3	6	pF
Input resistor	RN2907	R1	—	7	10	13	kΩ
	RN2908			15.4	22	28.6	
	RN2909			32.9	47	61.1	
Resistor ratio	RN2907	R1/R2	—	0.191	0.213	0.232	—
	RN2908			0.421	0.468	0.515	
	RN2909			1.92	2.14	2.35	

Characteristics Curves (Q1, Q2 Common)



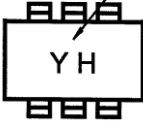
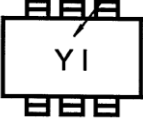
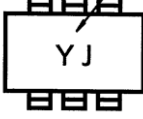
The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

Characteristics Curves (Q1, Q2 Common)



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Marking

Part No.	Marking
RN2907	<p data-bbox="603 344 863 371">Part No.(abbreviation code)</p> 
RN2908	<p data-bbox="603 591 863 618">Part No.(abbreviation code)</p> 
RN2909	<p data-bbox="603 833 863 860">Part No.(abbreviation code)</p> 

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