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

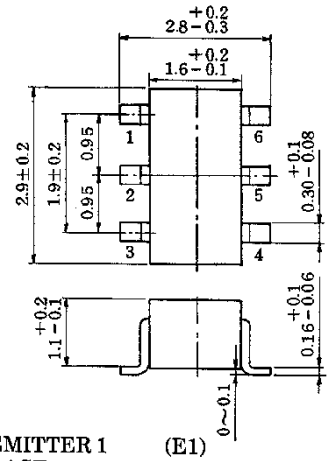
RN2607, RN2608

Switching, Inverter Circuit,

Interface Circuit and Driver Circuit

- Including two devices in SM6 (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 RN1607,RN1608

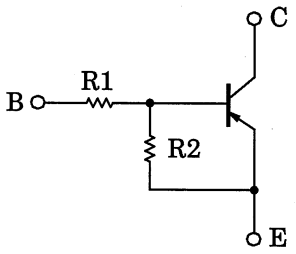
Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-3N1A

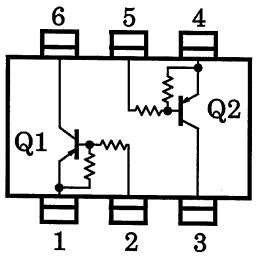
Weight: 0.015 g (typ.)

Equivalent Circuit and Bias Resistor Values



Part No	R1 (kΩ)	R2 (kΩ)
RN2607	10	47
RN2608	22	47

Internal Circuit (top view)



Start of commercial production
1988-11

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

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	−50	V
Collector-emitter voltage		V_{CEO}	−50	V
Emitter-base voltage	RN2607	V_{EBO}	−6	V
	RN2608		−7	
Collector current		I_C	−100	mA
Collector power dissipation		P_C*	300	mW
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

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

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 V, I_E = 0 mA	—	—	−100	nA
		I_{CEO}	V_{CE} = −50 V, I_B = 0 mA	—	—	−500	nA
Emitter cut-off current	RN2607	I_{EBO}	V_{EB} = −6 V, I_C = 0 mA	−0.081	—	−0.15	mA
	RN2608		V_{EB} = −7 V, I_C = 0 mA	−0.078	—	−0.145	
DC current gain	RN2607	h_{FE}	V_{CE} = −5 V, I_C = −10 mA	80	—	—	—
	RN2608			80	—	—	
Collector-emitter saturation voltage		$V_{CE\ (sat)}$	I_C = −5 mA, I_B = −0.25 mA	—	−0.1	−0.3	V
Input voltage (ON)	RN2607	$V_{I\ (ON)}$	V_{CE} = −0.2 V, I_C = −5 mA	−0.7	—	−1.8	V
	RN2608			−1.0	—	−2.6	
Input voltage (OFF)	RN2607	$V_{I\ (OFF)}$	V_{CE} = −5 V, I_C = −0.1 mA	−0.5	—	−1.0	V
	RN2608			−0.6	—	−1.16	
Translation frequency		f_T	V_{CE} = −10 V, I_C = −5 mA	—	200	—	MHz
Collector output capacitance		C_{ob}	V_{CB} = −10 V, I_E = 0 mA , f = 1 MHz	—	3	6	pF
Input resistance	RN2607	R1	—	7	10	13	kΩ
	RN2608			15.4	22	28.6	
Resistance ratio	RN2607	R1/R2	—	0.191	0.213	0.232	—
	RN2608			0.421	0.468	0.515	

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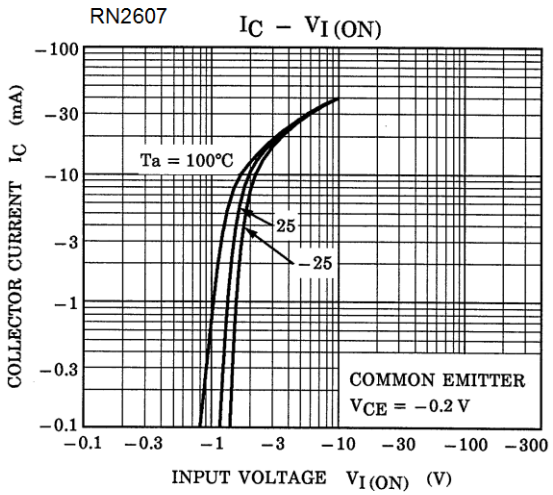
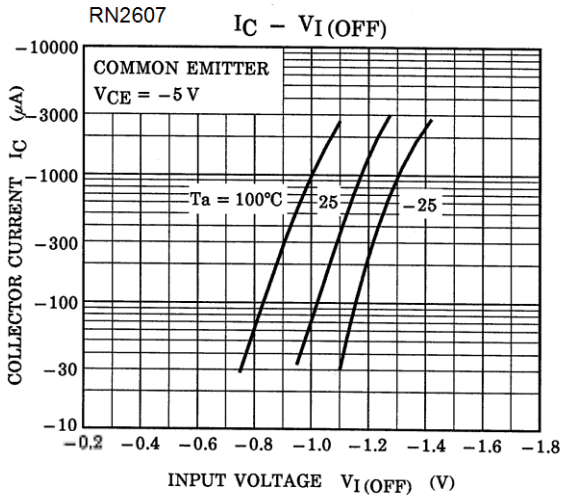
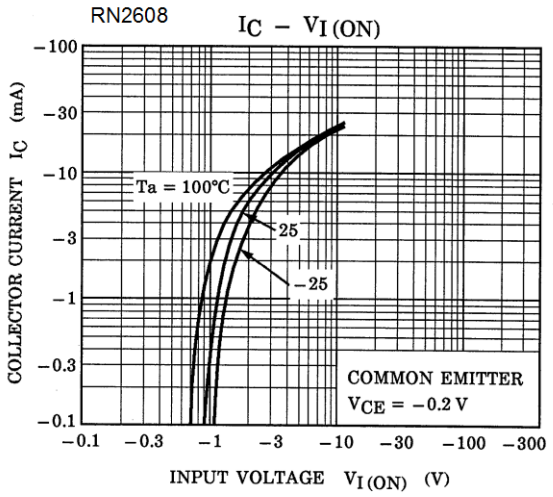
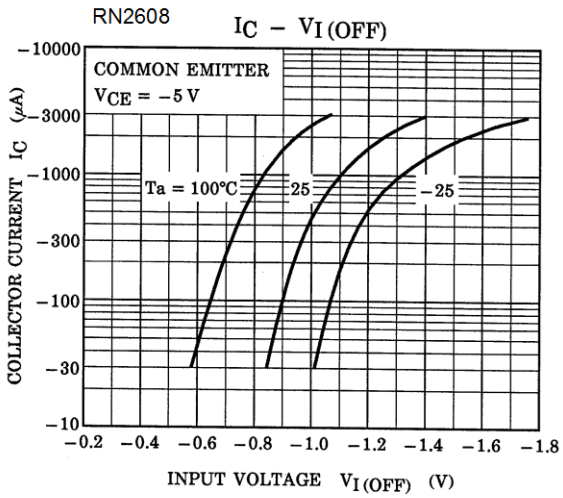
Characteristics curves (Q1, Q2 Common)









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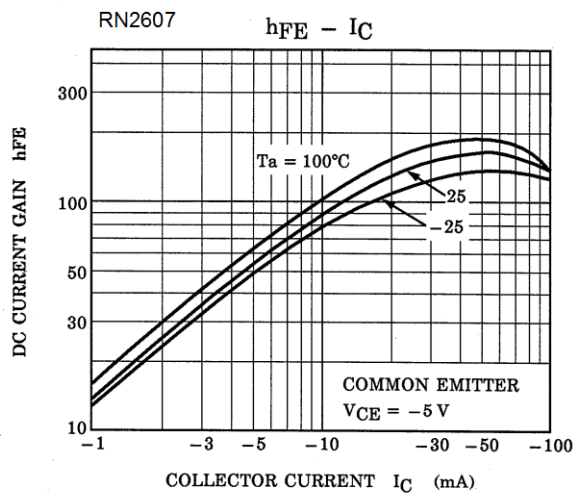
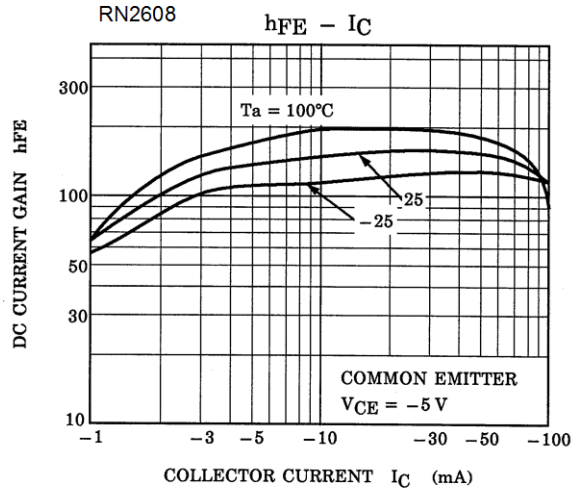
Characteristics curves (Q1, Q2 Common)





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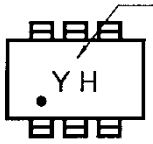
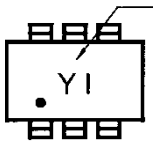
Marking

Part No	Marking
RN2607	Part No.(abbreviation code) 
RN2608	Part No.(abbreviation code) 

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