

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

RN2607, RN2608

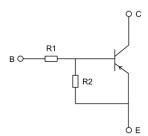
1. Applications

- Switching
- Inverter Circuit,
- Interface Circuit
- Driver Circuit

2. Features

- 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

3. Equivalent Circuit and Bias Resistor Values

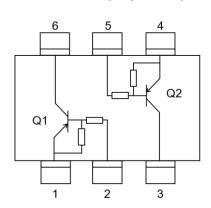


Part No	R1 (kΩ)	R2 (kΩ)
RN2607	10	47
RN2608	22	47

Unit: mm $^{+0.2}_{2.8-0.3}$ +0.2 1.6-0.1 1.9 ± 0.2 2.9 ± 0.2 1. EMITTER 1 (E1) 2. BASE 1 (B1) 3. COLLECTOR 2 (C2)4. EMITTER 2 (E2)5. BASE 2 (B2)SM₆ 6. COLLECTOR 1 (C1)**JEDEC JEITA TOSHIBA**

Weight: 0.015 g (typ.)

4. Internal Circuit (Top View)



Start of commercial production 1988-11



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

Characteris	Symbol	Rating	Unit		
Collector-base voltage		V _{CBO}	-50	V	
Collector-emitter voltage		VCEO	-50	V	
Emitter-base voltage	RN2607	\/===	-6	V	
	RN2608	V _{EBO}	-7		
Collector current		Ic	-100	mA	
Collector power dissipation		P _C (Note 1)	300	mW	
Junction temperature		Tj	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).

Note 1: Total rating

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

Characte	eristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current		ICBO	VcB = −50 V, IE = 0 mA	_	_	-100	nA
		ICEO	V _{CE} = −50 V, I _B = 0 mA	_	_	-500	nA
Emitter cut-off current	RN2607	I _{EBO}	VEB = -6 V, IC = 0 mA	-0.081	_	-0.15	mA
	RN2608		VEB = -7 V, IC = 0 mA	-0.078	_	-0.145	
DC current gain	RN2607	hFE	V _{CE} = −5 V, I _C = −10 mA	80	_	_	_
	RN2608			80	_	_	
Collector-emitter saturation voltage		VCE(sat)	IC = −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	VI(OFF)	VCE = -5 V, IC = -0.1 mA	-0.5	_	-1.0	V
	RN2608			-0.6	_	-1.16	
Translation	frequency	f⊤	VCE = −10 V, IC = −5 mA	_	200	_	MHz
Collector outpu	t capacitance	Cob	VcB = −10 V, IE = 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	



7. Characteristics curves (Note) (Q1, Q2 Common)

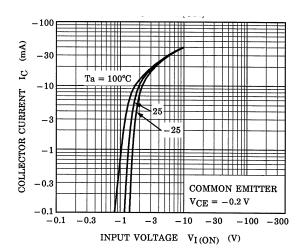


Fig 7.1 RN2607 $I_C - V_{I(ON)}$

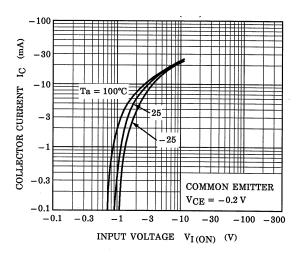


Fig 7.3 RN2608 $I_C - V_{I(ON)}$

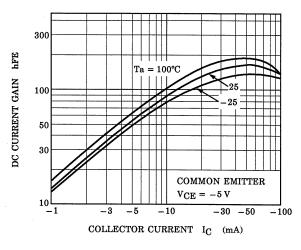


Fig 7.5 RN2067 h_{FE} - I_C

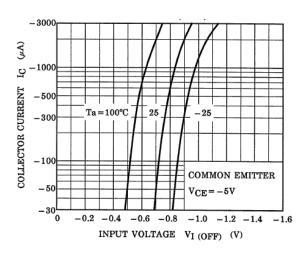


Fig 7.2 RN2607 $I_C - V_{I(OFF)}$

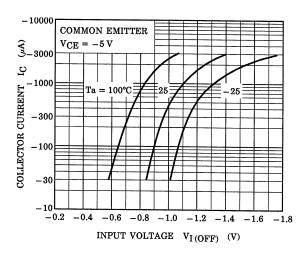


Fig 7.4 RN2608 $I_C - V_{I(OFF)}$

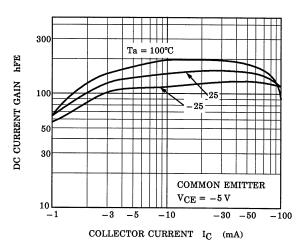


Fig 7.6 RN2068 h_{FE} - I_C

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



8. Marking

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



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