

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

RN2910,RN2911

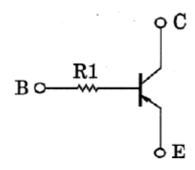
1. Applications

- · Switching
- · Inverter Circuits
- · Interfacing
- · Driver Circuits

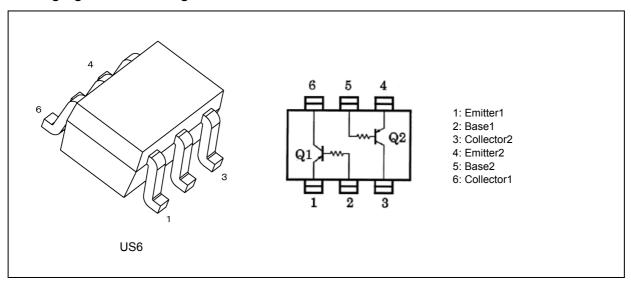
2. Features

- (1) AEC-Q101 qualified (Please see the orderable part number list)
- (2) Small package (Dual type)
- (3) The integrated bias resistor reduces the number of external parts required, making it possible to reduce system size and assembly time.
- (4) Toshiba offers transistors with a wide range of resistance to accommodate various circuit designs.
- (5) Complementary to RN1910 to RN1911

3. Equivalent Circuit



4. Packaging and Pin Assignment



Start of commercial production

1998-02



5. Orderable part number

Orderable part number		AEC-Q101		Note	
RN2910	RN2910,LF	_		General Use	
	RN2910,LXGF	YES	(Note 1)	Unintended Use	(Note 1)
	RN2910,LXHF	YES		Automotive Use	
RN2911	RN2911,LF	_		General Use	
	RN2911,LXGF	YES	(Note 1)	Unintended Use	(Note 1)
	RN2911,LXHF	YES		Automotive Use	·

Note 1: For more information, please contact our sales or use the inquiry form on our website.

6. Absolute Maximum Ratings (Note) (Unless otherwise specified, T_a = 25 °C) (Q1, Q2 Common)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	-50	V
Collector-emitter voltage	V _{CEO}	-50	
Emitter-base voltage	V _{EBO}	-5	
Collector current	I _C	-100	mA
Collector power dissipation (Note 1	P _C	200	mW
Junction temperature	T _j	150	ç
Storage temperature	T _{stg}	-55 to 150	

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



7. Electrical Characteristics (Unless otherwise specified, Ta = 25 °C) (Q1, Q2 Common)

Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current		I _{CBO}	$V_{CB} = -50 \text{ V}, I_{E} = 0 \text{ mA}$	_	_	-100	nA
Emitter cut-off current		I _{EBO}	$V_{EB} = -5 \text{ V}, I_{C} = 0 \text{ mA}$	_	_	-100	
DC current gain		h _{FE}	$V_{CE} = -5 \text{ V, } I_{C} = -1 \text{ mA}$	120	_	400	_
Collector-emitter saturation voltage		V _{CE(sat)}	I _C = -5 mA, I _B = -0.25 mA	_	-0.1	-0.3	V
Transition frequency		f _T	V_{CE} = -10 V, I_{C} = -5 mA	_	200	_	MHz
Collector output capacitance		C _{ob}	$V_{CB} = -10 \text{ V}, I_{E} = 0 \text{ mA}, f = 1 \text{ MHz}$	_	3	6	pF
Input resistance	RN2910	R ₁	-	3.29	4.7	6.11	kΩ
	RN2911			7	10	13	

8. Marking

Part No.(abbreviation code)

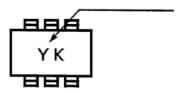


Fig. 8.1 Mraking RN2910

Part No.(abbreviation code)

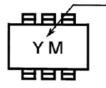
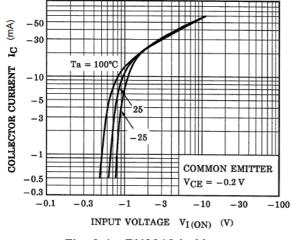


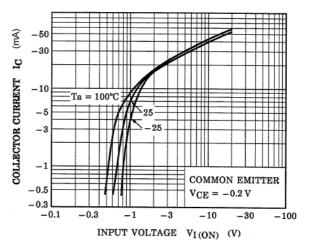
Fig. 8.2 Mraking RN2911

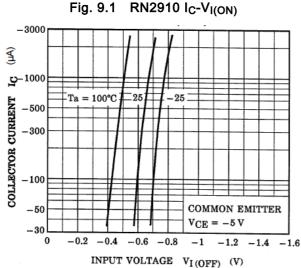
Rev.2.0

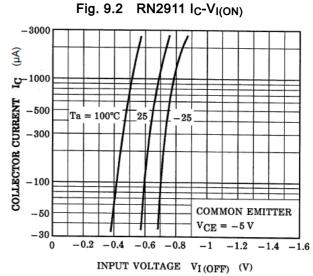


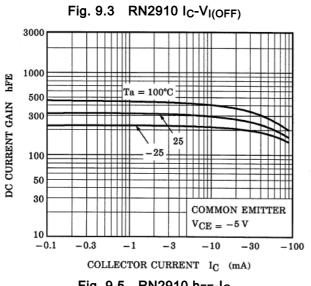
9. Characteristics Curves (Note)(Q1, Q2 Common)











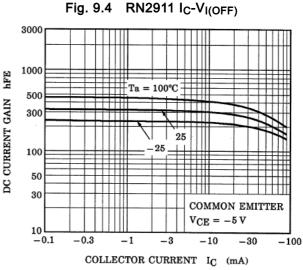


Fig. 9.5 RN2910 h_{FE}-I_C

Fig. 9.6 RN2911 hFE-IC

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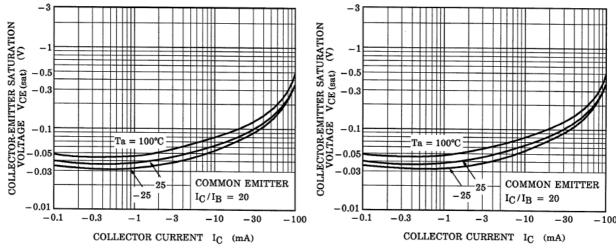


Fig. 9.7 RN2910 V_{CE(sat)}-I_C

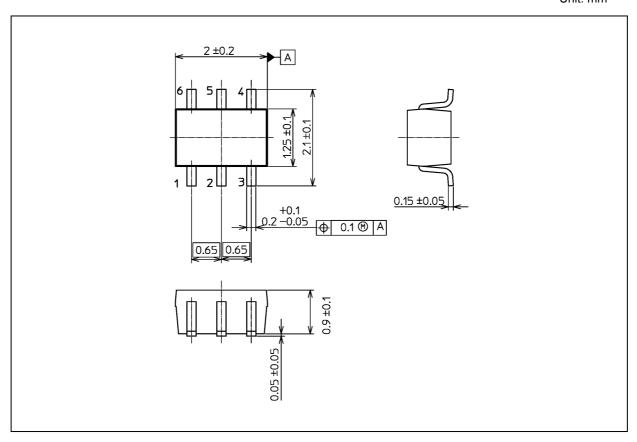
Fig. 9.8 RN2911 V_{CE(sat)}-I_C

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



Package Dimensions

Unit: mm



Weight: 6.8 mg (typ.)

	Package Name(s)
TOSHIBA: 1-2T1S	
Nickname: US6	



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