

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

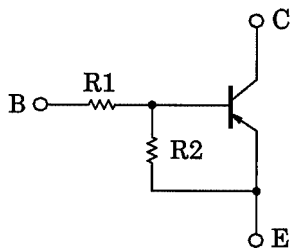
RN2967, RN2968, RN2969

Switching, Inverter Circuit, Interface Circuit
And Driver Circuit Applications

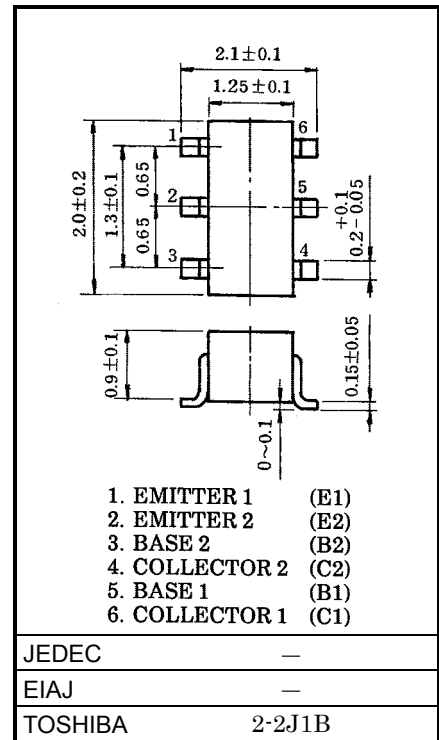
Unit in mm

- 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
- Complementary to RN1967~RN1969

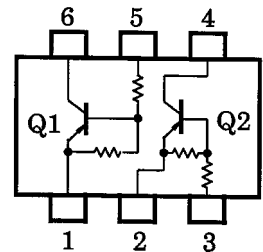
Equivalent Circuit and Bias Resistor Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN2967	10	47
RN2968	22	47
RN2969	47	22



Equivalent Circuit (Top View)



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

Characteristic		Symbol	Rating	Unit
Collector-base voltage	RN2967~2969	V_{CBO}	-50	V
Collector-emitter voltage		V_{CEO}	-50	V
Emitter-base voltage	RN2967	V_{EBO}	-6	V
	RN2968		-7	
	RN2969		-15	
Collector current	RN2967~2969	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

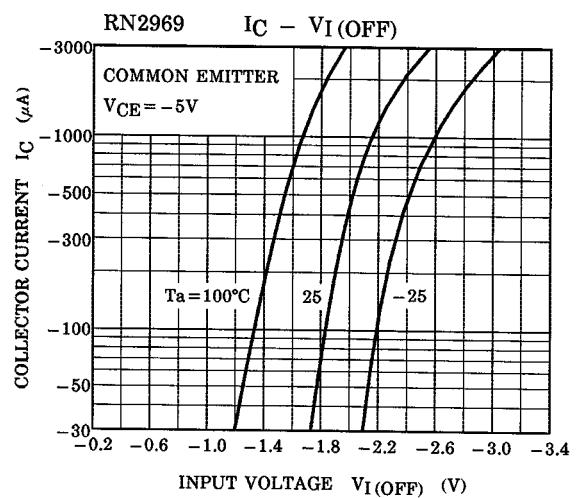
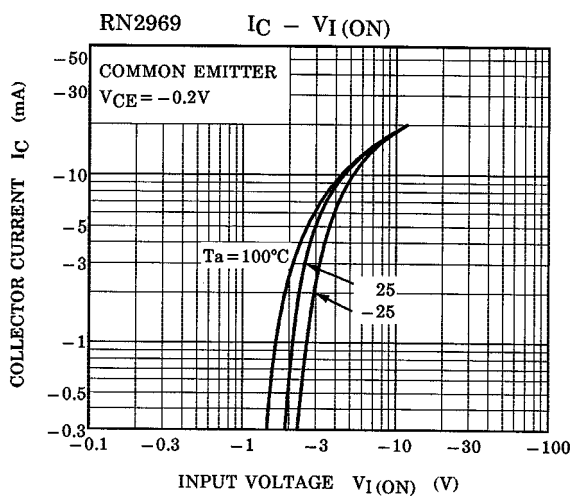
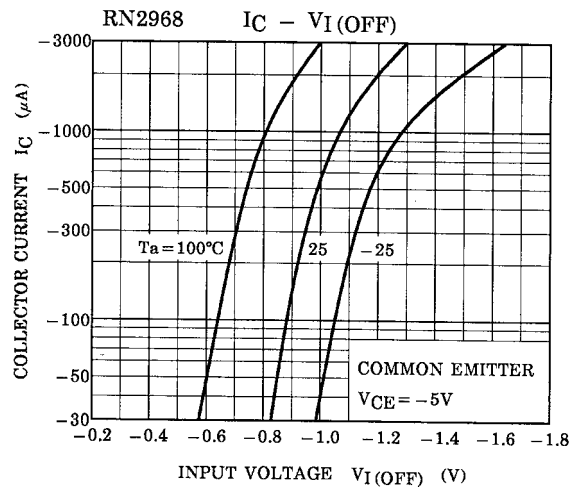
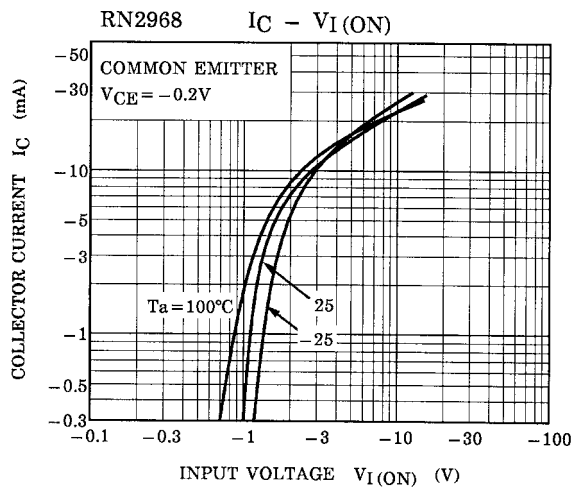
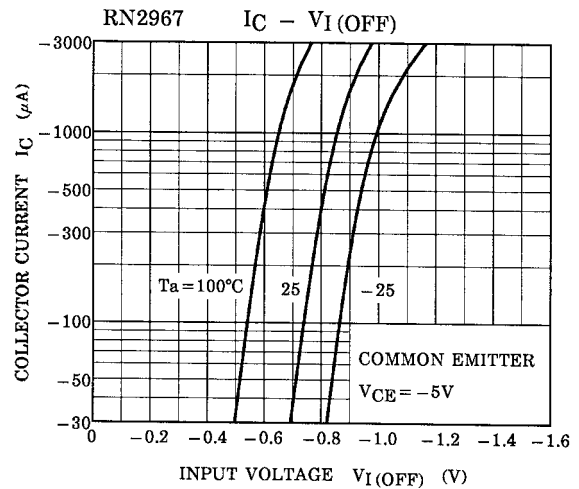
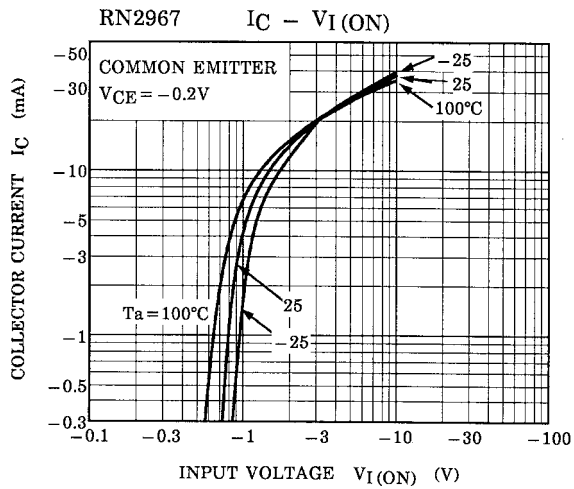
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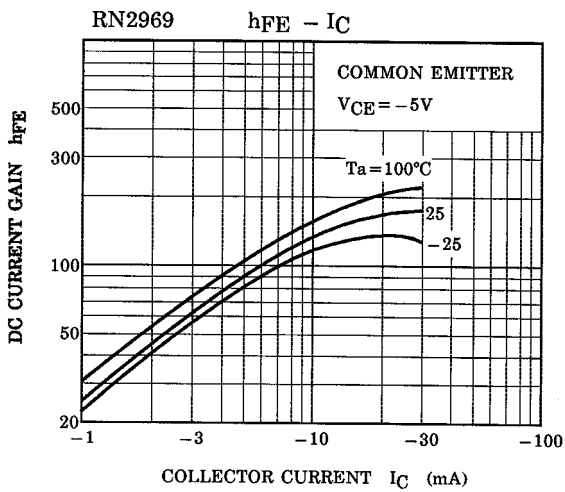
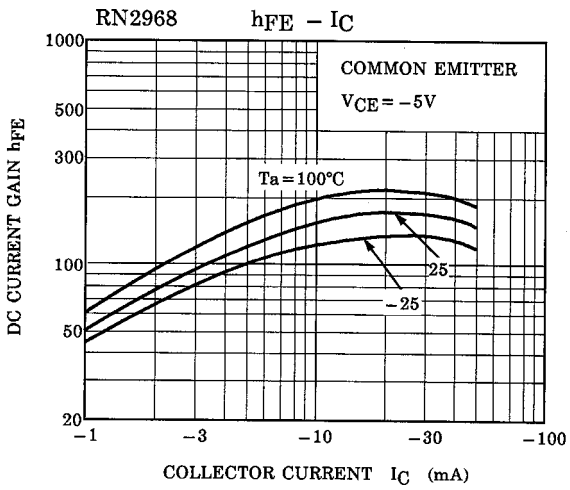
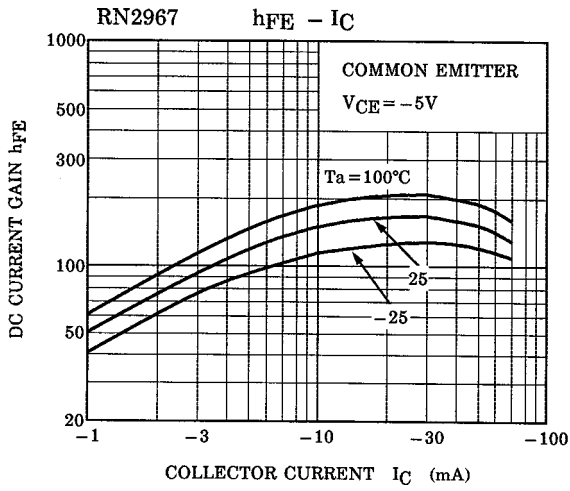
Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

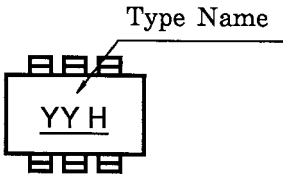
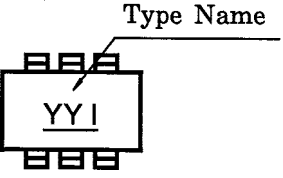
Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2967~2969	ICBO	—	V _{CB} = -50V, I _E = 0	—	—	-100	nA
		ICEO	—	V _{CE} = -50V, I _B = 0	—	—	-500	
Emitter cut-off current	RN2967	IEBO	—	V _{EB} = -6V, I _C = 0	-0.081	—	-0.15	mA
	RN2968		—	V _{EB} = -7V, I _C = 0	-0.078	—	-0.145	
	RN2969		—	V _{EB} = -15V, I _C = 0	-0.167	—	-0.311	
DC current gain	RN2967	h _{FE}	—	V _{CE} = -5V, I _C = -10mA	80	—	—	—
	RN2968		—		80	—	—	
	RN2969		—		70	—	—	
Collector-emitter saturation voltage	RN2967~2969	V _{CE (sat)}	—	I _C = -5mA I _B = -0.25mA	—	-0.1	-0.3	V
Input voltage (ON)	RN2967	V _{I (ON)}	—	V _{CE} = -0.2V I _C = -5mA	-0.7	—	-1.8	V
	RN2968		—		-1.0	—	-2.6	
	RN2969		—		-2.2	—	-5.8	
Input voltage (OFF)	RN2967	V _{I (OFF)}	—	V _{CE} = -5V I _C = -0.1mA	-0.5	—	-1.0	V
	RN2968		—		-0.6	—	-1.16	
	RN2969		—		-1.5	—	-2.6	
Translation frequency	RN2967~2969	f _T	—	V _{CE} = -10V I _C = -5mA	—	200	—	MHz
Collector output capacitance	RN2967~2969	C _{ob}	—	V _{CB} = -10V, I _E = 0, f = 1MHz	—	3	6	pF
Input resistor	RN2967	R1	—	—	7	10	13	kΩ
	RN2968		—		15.4	22	28.6	
	RN2969		—		32.9	47	61.1	
Resistor ratio	RN2967	R1/R2	—	—	0.191	0.213	0.232	—
	RN2968		—		0.421	0.468	0.515	
	RN2969		—		0.09	2.14	2.35	

(Q1, Q2 Common)



(Q1, Q2 Common)



Type Name	Marking
RN2967	
RN2968	
RN2969	