

TOSHIBA Transistor Silicon Npn Epitaxial Type (PCT Process)

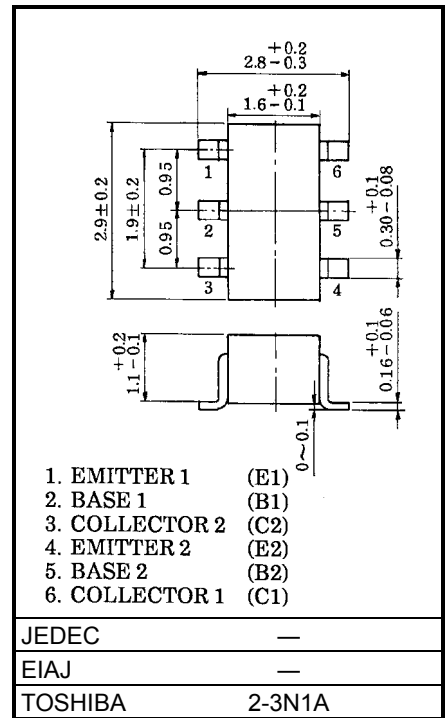
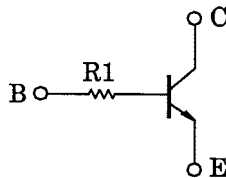
# RN1610,RN1611

Switching, Inverter Circuit, Interface Circuit  
And Driver Circuit Applications

Unit: mm

- 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
- Complementary to RN2610, RN2611

### Equivalent Circuit



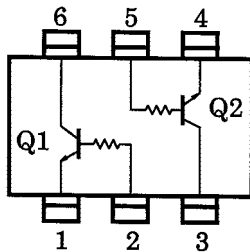
1. EMITTER 1 (E1)
2. BASE 1 (B1)
3. COLLECTOR 2 (C2)
4. EMITTER 2 (E2)
5. BASE 2 (B2)
6. COLLECTOR 1 (C1)

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

Characterisitic	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	50	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	100	mA
Collector power dissipation	$P_C^*$	300	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C

\* Total rating

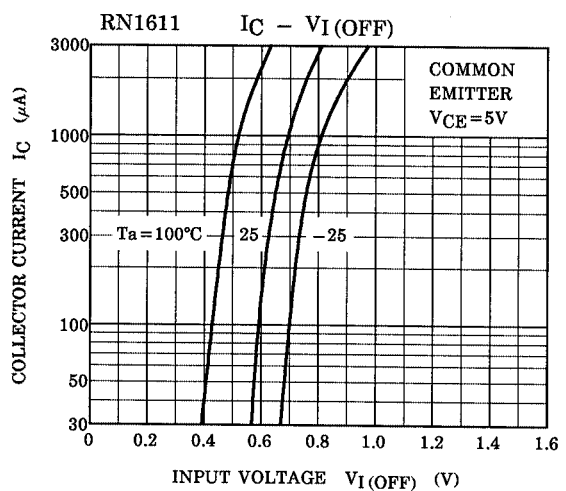
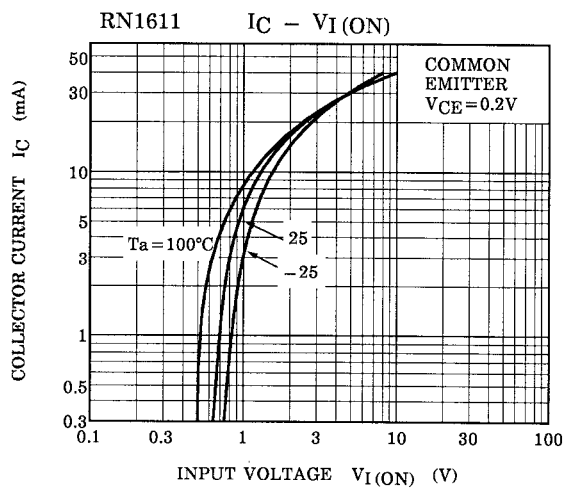
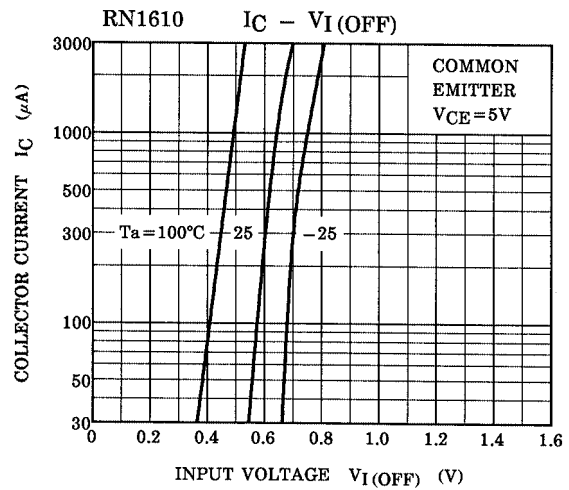
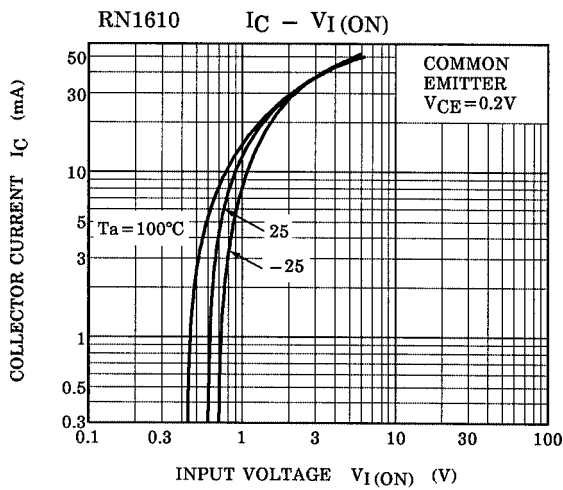
### Equivalent Circuit (Top View)



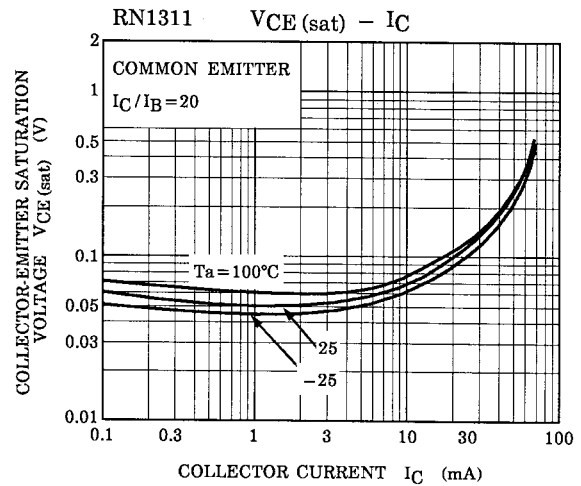
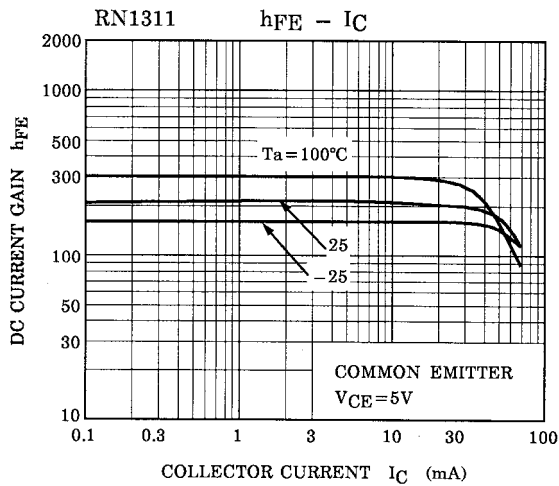
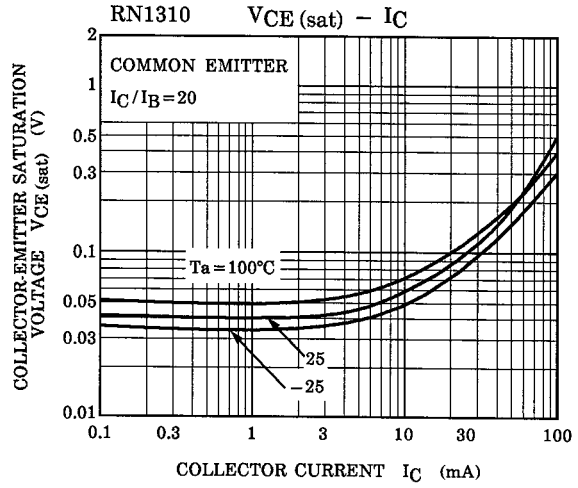
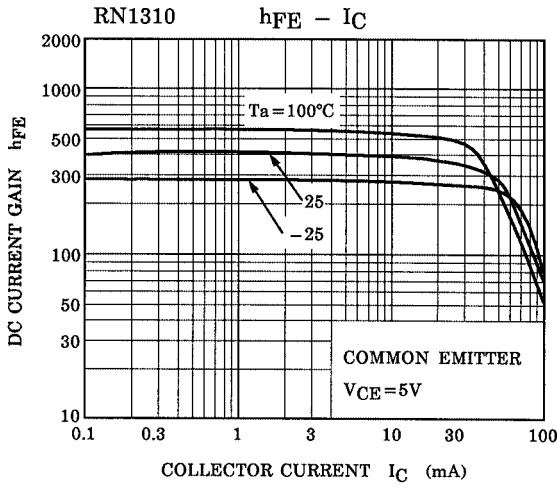
## Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

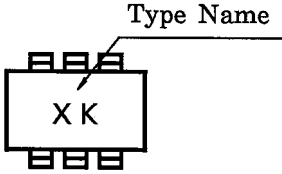
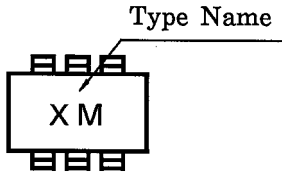
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	—	$V_{CB} = 50V, I_E = 0$	—	—	100	nA
Emitter cut-off current	$I_{EBO}$	—	$V_{EB} = 50V, I_C = 0$	—	—	100	nA
DC current gain	$h_{FE}$	—	$V_{CE} = 50V, I_C = 1mA$	120	—	700	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = 5mA, I_B = 0.25mA$	—	0.1	0.3	V
Transition frequency	$f_T$	—	$V_{CE} = 10V, I_C = 5mA$	—	250	—	MHz
Collector output capacitance	$C_{ob}$	—	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	3	6	pF
Input resistor	RN1610	R1	—	3.29	4.7	6.11	kΩ
	RN1611			7	10	13	

### (Q1, Q2 Common)



(Q1, Q2 Common)



Type Name	Marking
RN1610	
RN1611	

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000707EAA

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