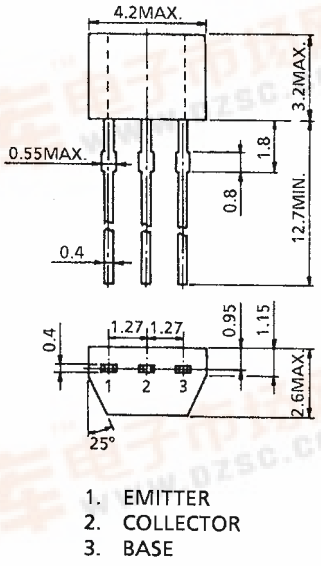
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1210,RN1211

Switching, Inverter Circuit, Interface Circuit
And Driver Circuit Applications

- With built-in bias resistors.
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN2210, RN2211

Unit: mm

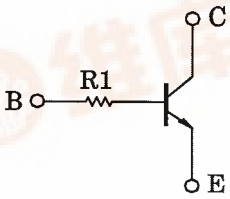


1. EMITTER
2. COLLECTOR
3. BASE

JEDEC	—
EIAJ	—
TOSHIBA	2-4E1A

Weight: 0.13g

Equivalent Circuit



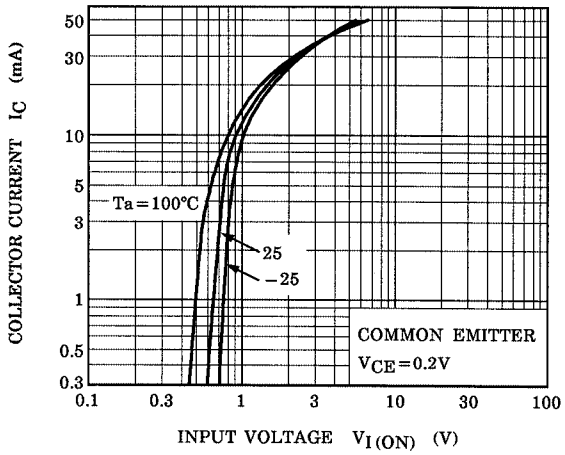
Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	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

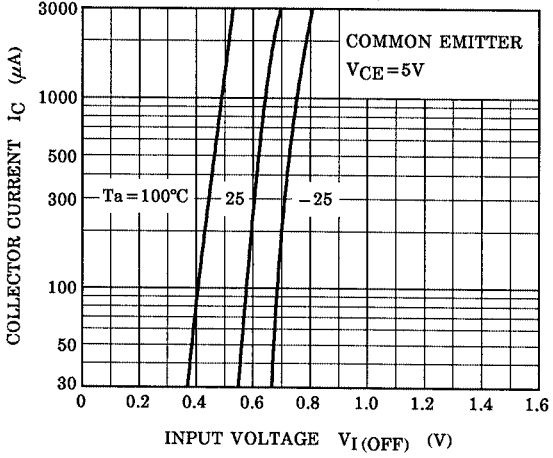
Electrical Characteristics (Ta = 25°C)

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} = 5V, I_C = 0	—	—	100	nA
DC current gain		h_{FE}	—	V_{CE} = 5V, I_C = 1mA	120	—	700	—
Collector-emitter saturation voltage		$V_{CE\ (sat)}$	—	I_C = 5mA, I_B = 0.25mA	—	0.1	0.3	V
Translation 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	RN1210	R1	—	—	3.29	4.7	6.11	kΩ
	RN1211		—		7	10	13	

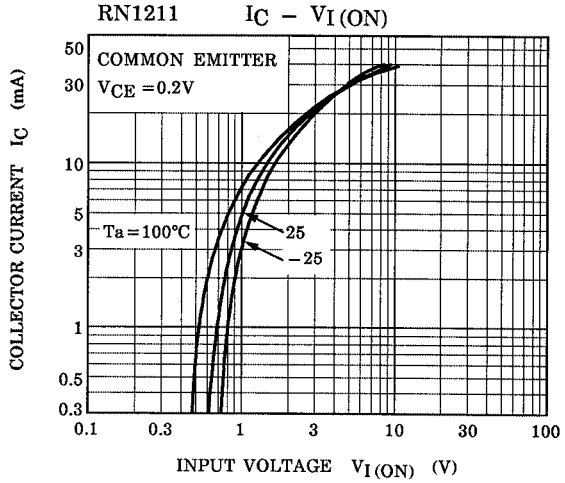
RN1210 $I_C - V_{I(ON)}$



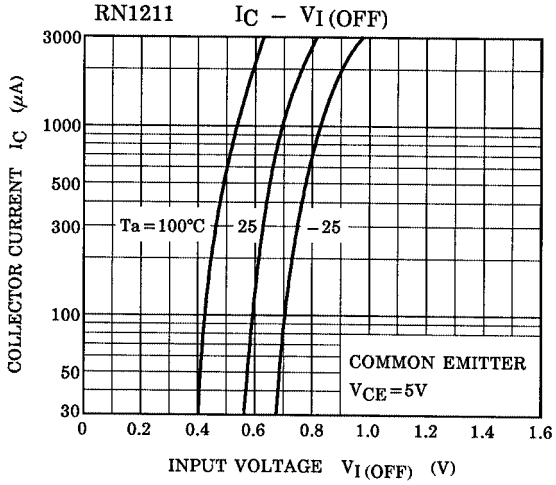
RN1210 $I_C - V_{I(OFF)}$



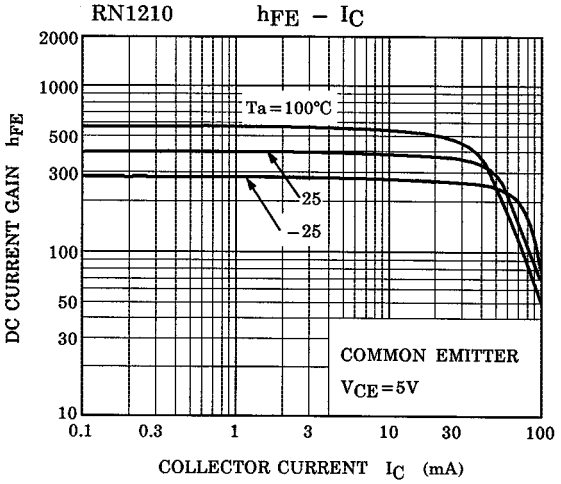
RN1211 $I_C - V_{I(ON)}$



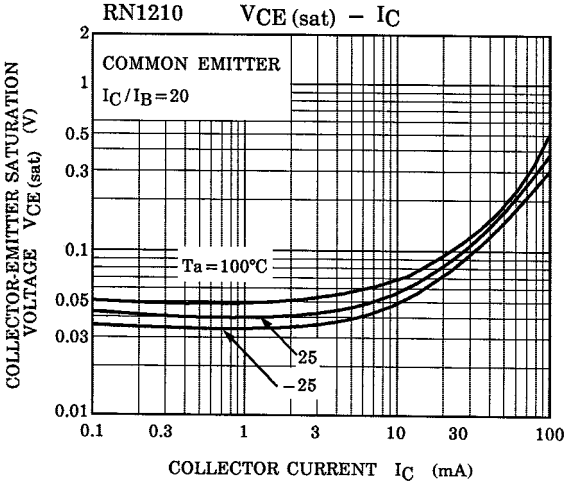
RN1211 $I_C - V_{I(OFF)}$



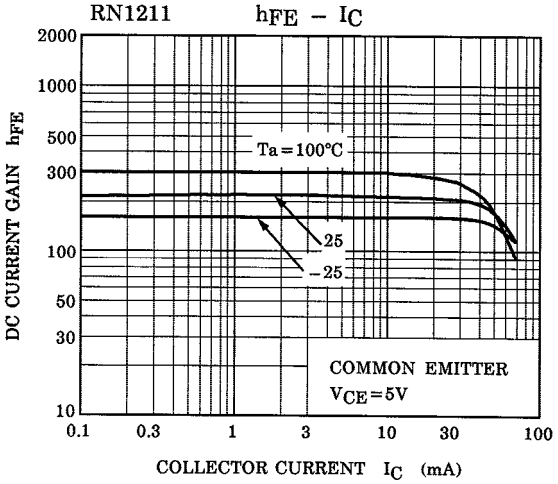
RN1210 h_{FE} – I_C



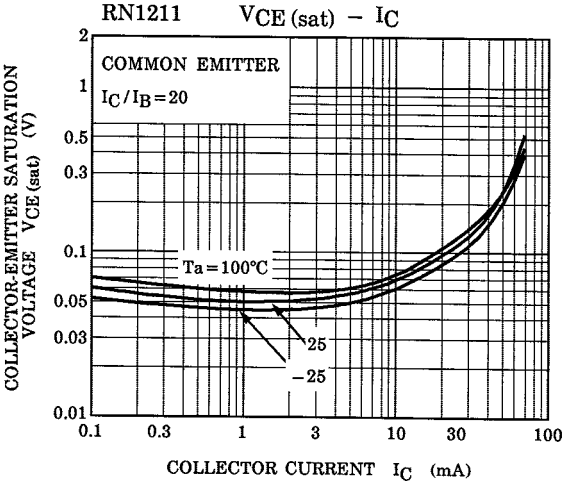
RN1210 $V_{CE\,(sat)}$ – I_C



RN1211 h_{FE} – I_C



RN1211 $V_{CE\,(sat)}$ – I_C



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