

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# RN2101, RN2102, RN2103, RN2104, RN2105, RN2106

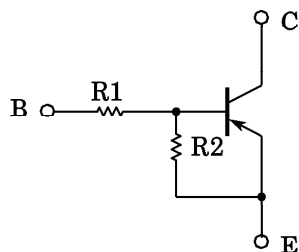
Unit in mm

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT

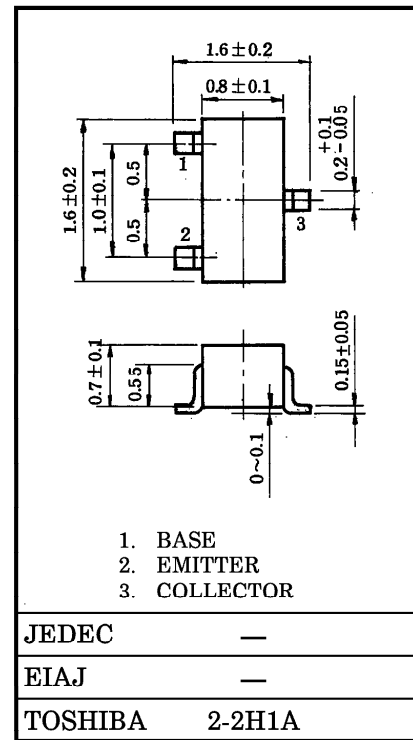
AND DRIVER CIRCUIT APPLICATIONS.

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN1101~RN1106

## EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



TYPE No.	R1(kΩ)	R2(kΩ)
RN2101	4.7	4.7
RN2102	10	10
RN2103	22	22
RN2104	47	47
RN2105	2.2	47
RN2106	4.7	47



1. BASE
2. EMITTER
3. COLLECTOR

JEDEC	—
EIAJ	—
TOSHIBA	2-2H1A

Weight : 2.4mg

## MAXIMUM RATINGS (Ta = 25°C)

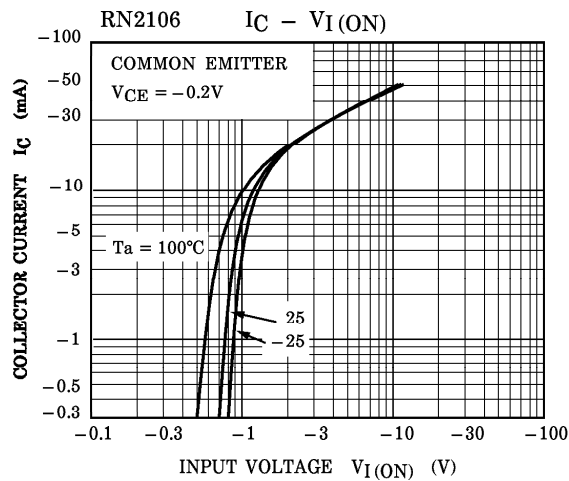
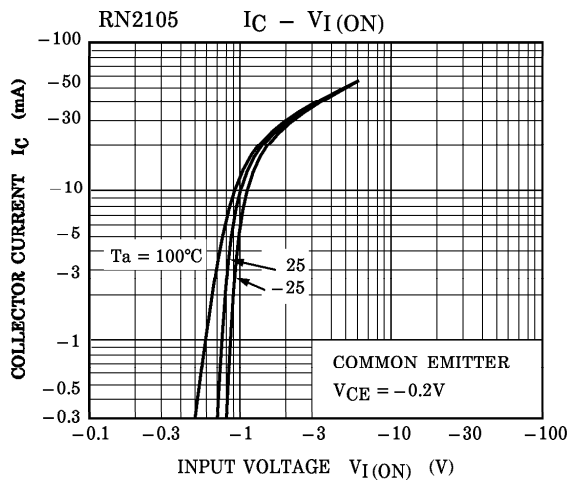
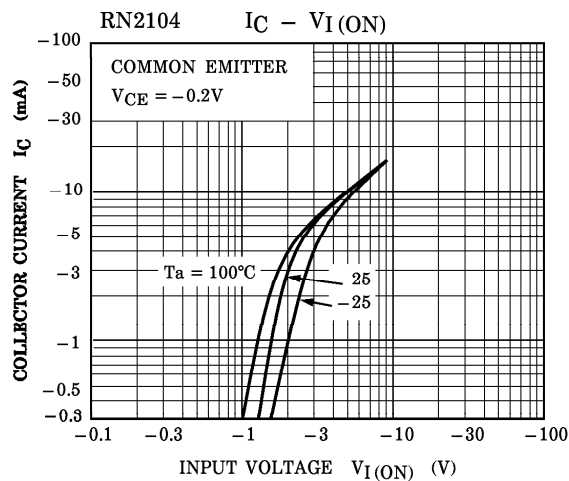
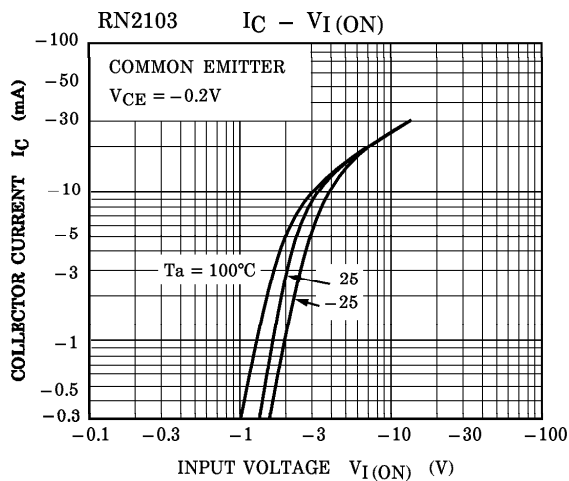
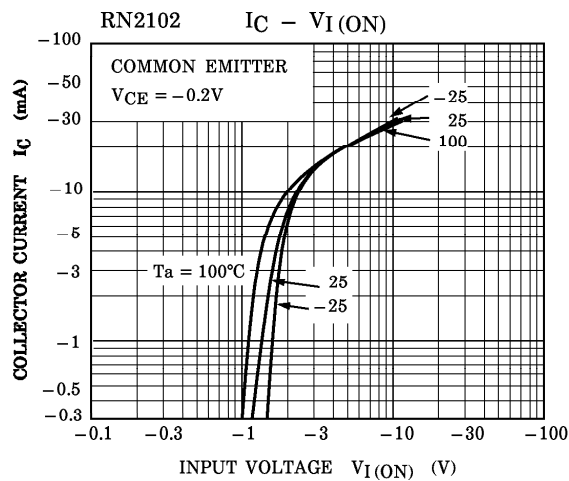
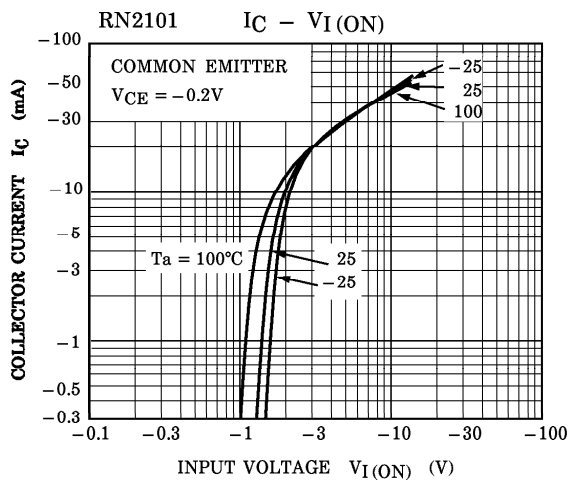
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN2101~2106	V <sub>CB0</sub>	-50	V
Collector-Emitter Voltage		V <sub>CEO</sub>	-50	V
Emitter-Base Voltage	RN2101~2104	V <sub>EB0</sub>	-10	V
	RN2105, 2106		-5	
Collector Current	RN2101~2106	I <sub>C</sub>	-100	mA
Collector Power Dissipation		P <sub>C</sub>	100	mW
Junction Temperature		T <sub>j</sub>	150	°C
Storage Temperature Range		T <sub>stg</sub>	-55~150	°C

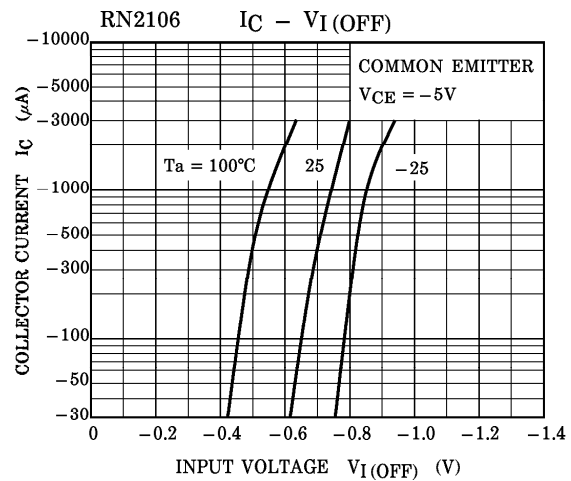
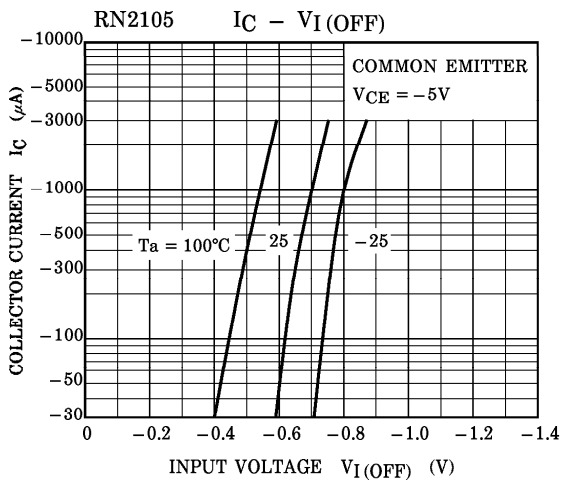
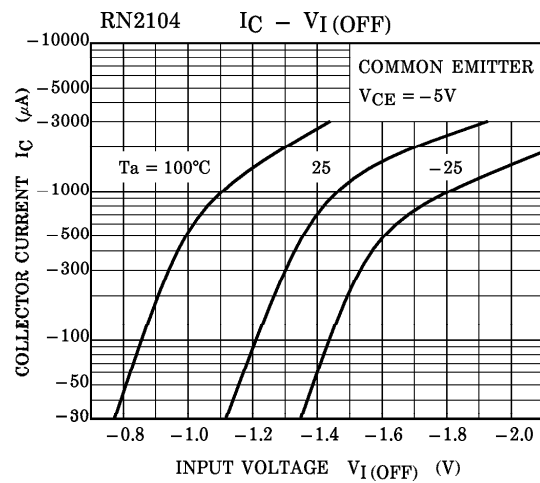
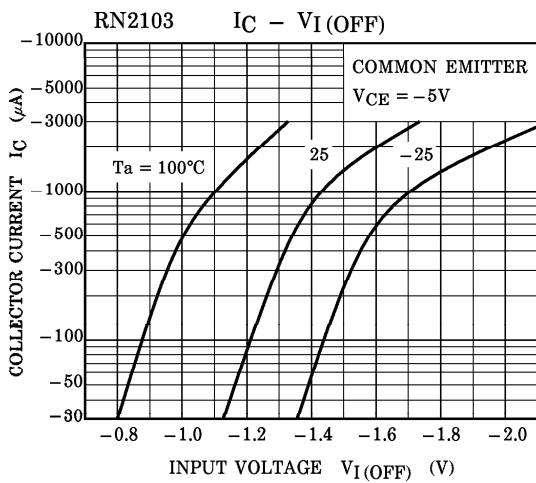
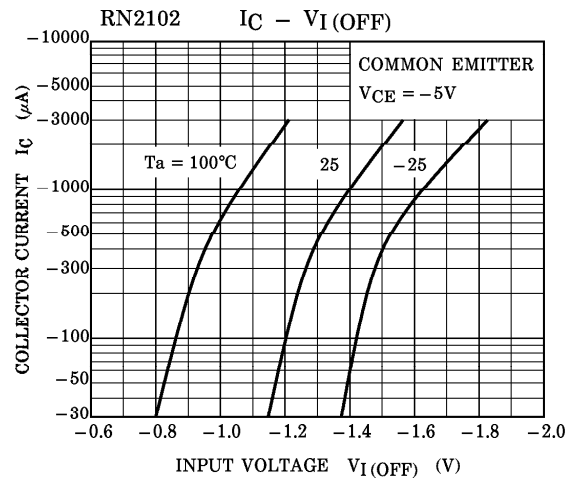
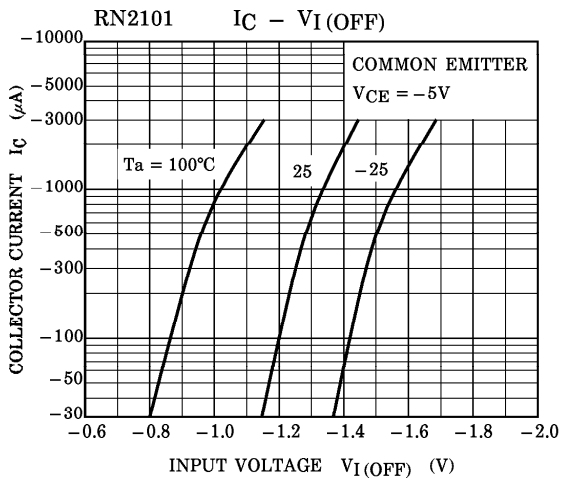
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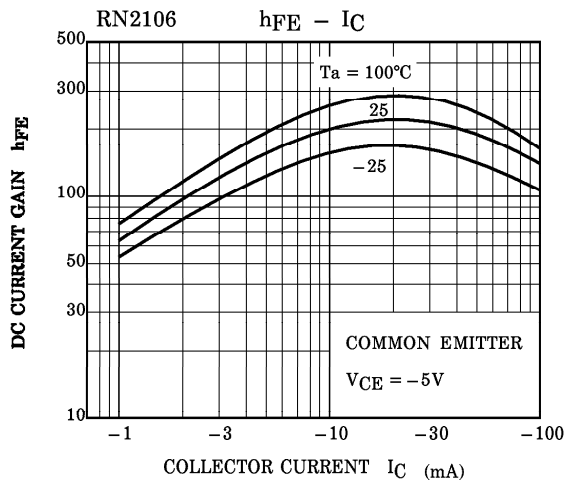
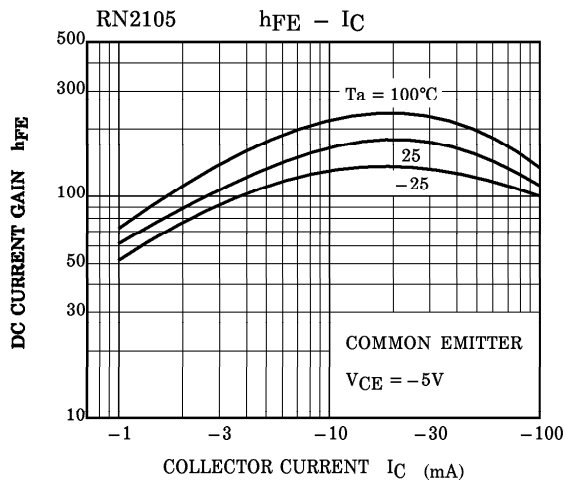
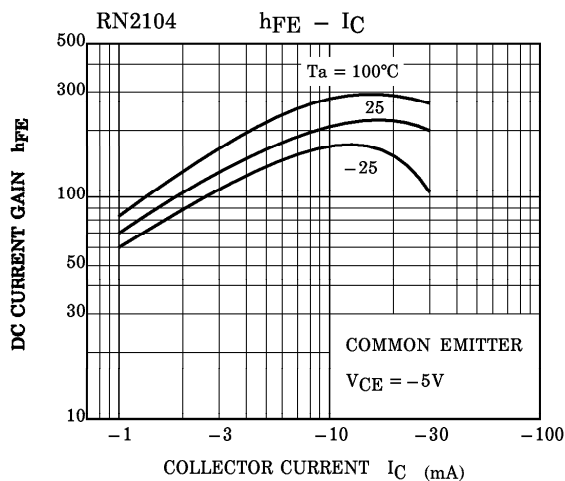
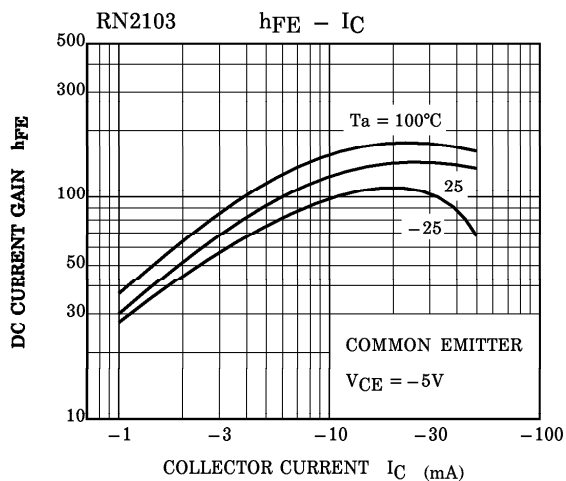
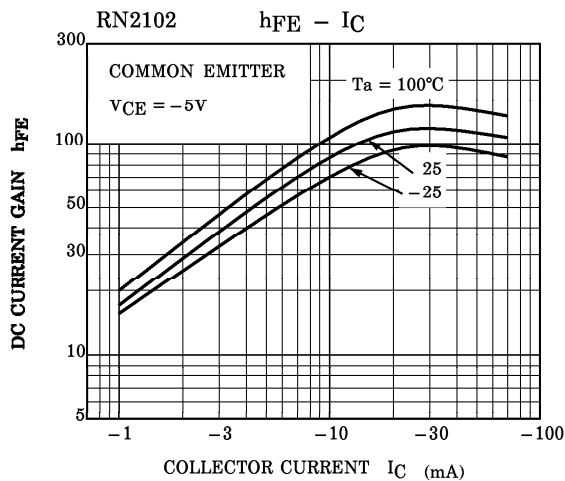
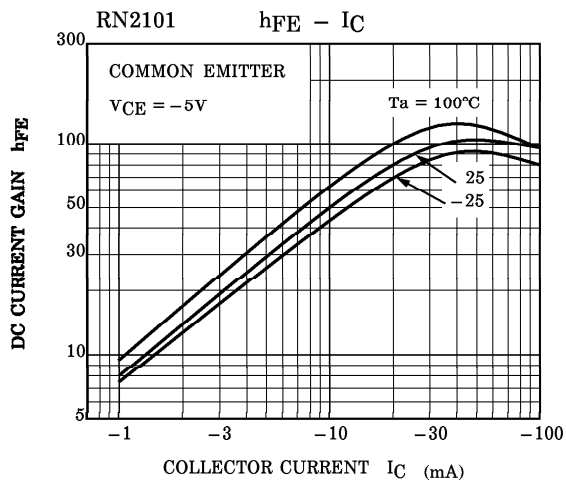
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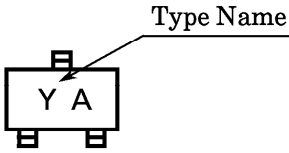
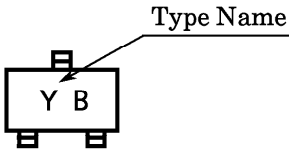
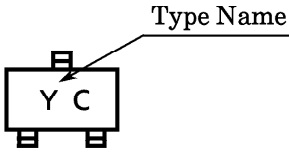
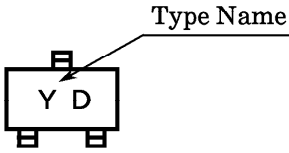
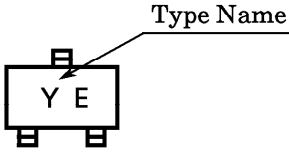
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN2101~2106	ICBO	V <sub>CB</sub> = -50V, I <sub>E</sub> = 0	—	—	-100	nA
		ICEO	V <sub>CE</sub> = -50V, I <sub>B</sub> = 0	—	—	-500	
Emitter Cut-off Current	RN2101	I <sub>EBO</sub>	V <sub>EB</sub> = -10V, I <sub>C</sub> = 0	-0.82	—	-1.52	mA
	RN2102			-0.38	—	-0.71	
	RN2103			-0.17	—	-0.33	
	RN2104		-0.082	—	-0.15		
	RN2105		V <sub>EB</sub> = -5V, I <sub>C</sub> = 0	-0.078	—	-0.145	
	RN2106			-0.074	—	-0.138	
DC Current Gain	RN2101	h <sub>FE</sub>	V <sub>CE</sub> = -5V I <sub>C</sub> = -10mA	30	—	—	
	RN2102			50	—	—	
	RN2103			70	—	—	
	RN2104			80	—	—	
	RN2105			80	—	—	
	RN2106			80	—	—	
Collector-Emitter Saturation Voltage	RN2101~2106	V <sub>CE(sat)</sub>	I <sub>C</sub> = -5mA I <sub>B</sub> = -0.25mA	—	-0.1	-0.3	V
Input Voltage(ON)	RN2101	V <sub>I(ON)</sub>	V <sub>CE</sub> = -0.2V I <sub>C</sub> = -5mA	-1.1	—	-2.0	V
	RN2102			-1.2	—	-2.4	
	RN2103			-1.3	—	-3.0	
	RN2104			-1.5	—	-5.0	
	RN2105			-0.6	—	-1.1	
	RN2106			-0.7	—	-1.3	
Input Voltage(OFF)	RN2101~2104	V <sub>I(OFF)</sub>	V <sub>CE</sub> = -5V I <sub>C</sub> = -0.1mA	-1.0	—	-1.5	V
	RN2105, 2106			-0.5	—	-0.8	
Transition Frequency	RN2101~2106	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -5mA	—	200	—	MHz
Collector Output Capacitance	RN2101~2106	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0 f = 1MHz	—	3	6	pF
Input Resistor	RN2101	R1		3.29	4.7	6.11	kΩ
	RN2102			7	10	13	
	RN2103			15.4	22	28.6	
	RN2104			32.9	47	61.1	
	RN2105			1.54	2.2	2.86	
	RN2106			3.29	4.7	6.11	
Resistor Ratio	RN2101~2104	R1/R2		0.9	1.0	1.1	
	RN2105			0.0421	0.0468	0.0515	
	RN2106			0.09	0.1	0.11	







TYPE NAME	MARKING
RN2101	
RN2102	
RN2103	
RN2104	
RN2105	
RN2106	