

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

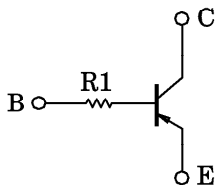
# RN2312, RN2313

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT  
AND DRIVER CIRCUIT APPLICATIONS.

Unit in mm

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN1312, RN1313

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	-50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-50	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	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

1. BASE  
2. EMITTER  
3. COLLECTOR

JEDEC	—
EIAJ	SC-70
TOSHIBA	2-2E1A

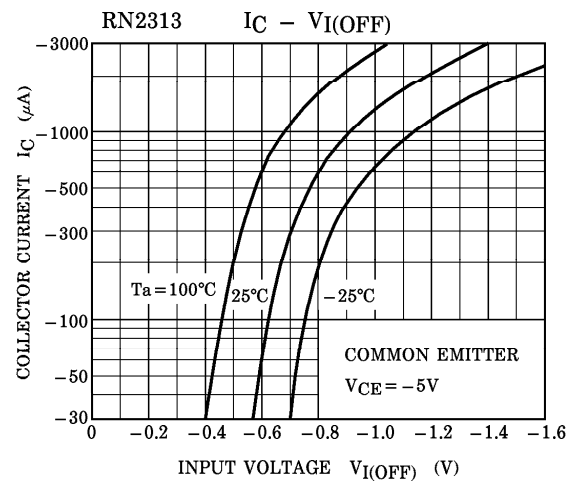
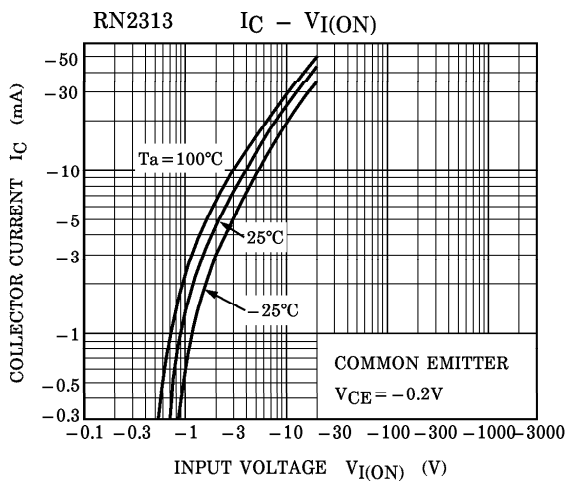
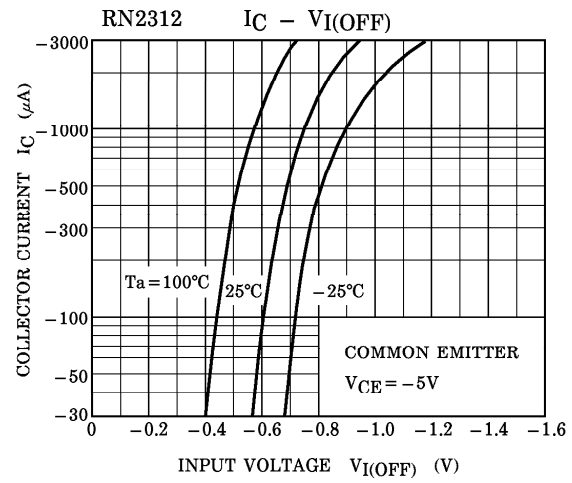
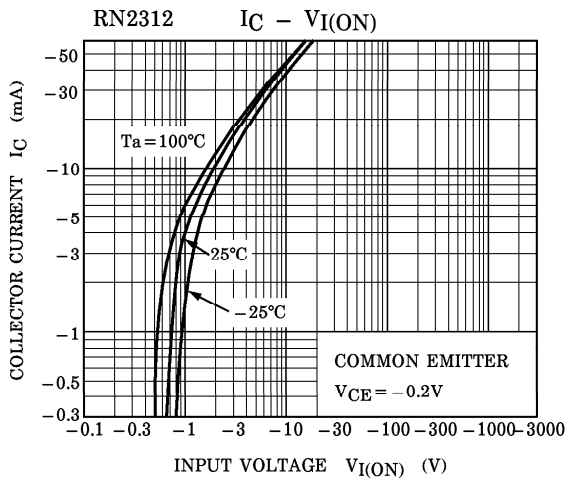
Weight : 0.006g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = -50V, I <sub>E</sub> = 0	—	—	-100	nA	
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> = 0	—	—	-100	nA	
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -1mA	120	—	400		
Collector-Emitter Saturation Voltage	V <sub>CE (sat)</sub>	I <sub>C</sub> = -5mA, I <sub>B</sub> = -0.25mA	—	-0.1	-0.3	V	
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -5mA	—	200	—	MHz	
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz	—	3	6	pF	
Input Resistance	RN2312	R1	—	15.4	22	28.6	kΩ
	RN2313			32.9	47	61.1	

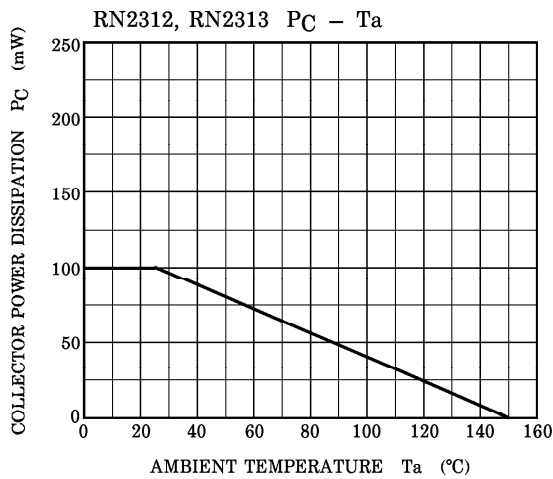
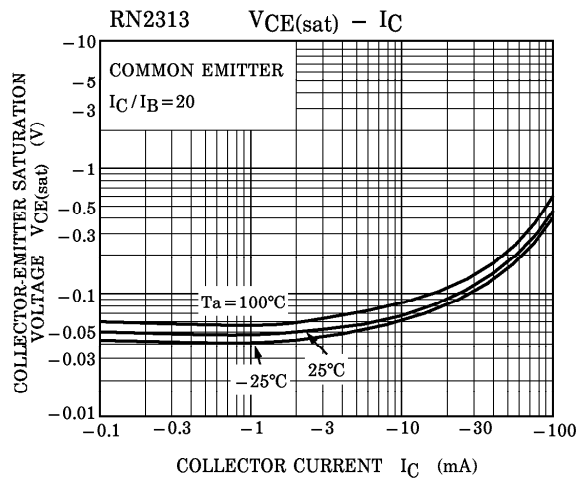
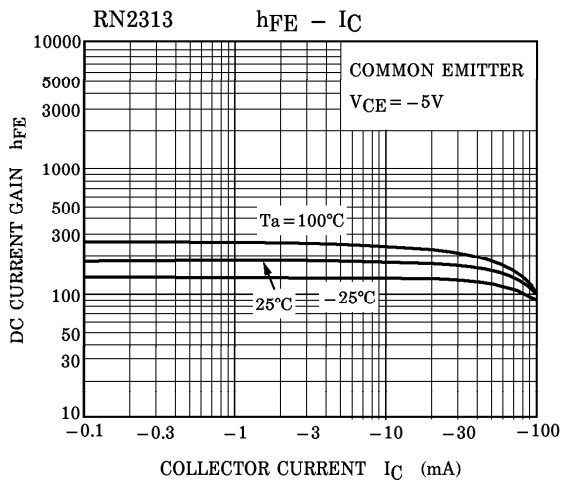
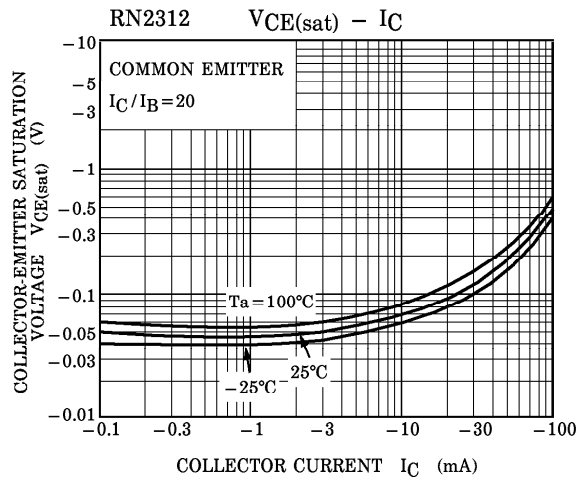
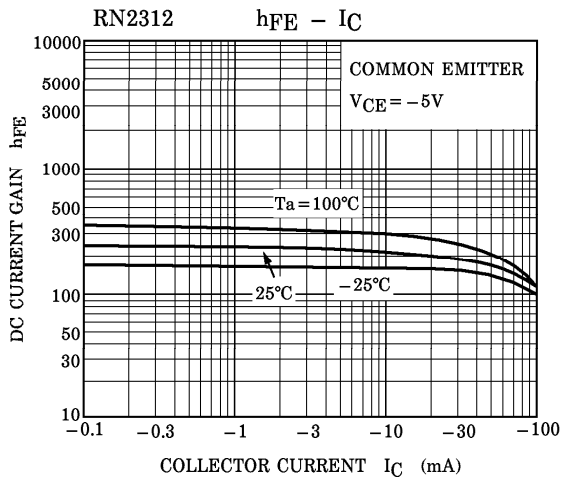
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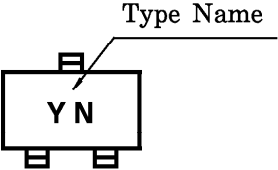
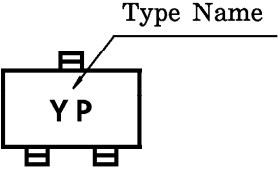
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TYPE NAME	MARKING
RN2312	 A schematic diagram of a component marking. It shows a rectangular box with the letters 'Y N' inside. Above the box is a small square with a diagonal line. Below the box are two small squares. A line points from the text 'Type Name' to the top square.
RN2313	 A schematic diagram of a component marking. It shows a rectangular box with the letters 'Y P' inside. Above the box is a small square with a diagonal line. Below the box are two small squares. A line points from the text 'Type Name' to the top square.