

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

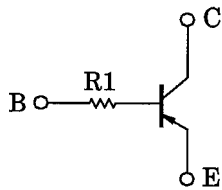
## RN2412,RN2413

Switching, Inverter Circuit, Interface Circuit  
And Driver Circuit Applications

Unit in mm

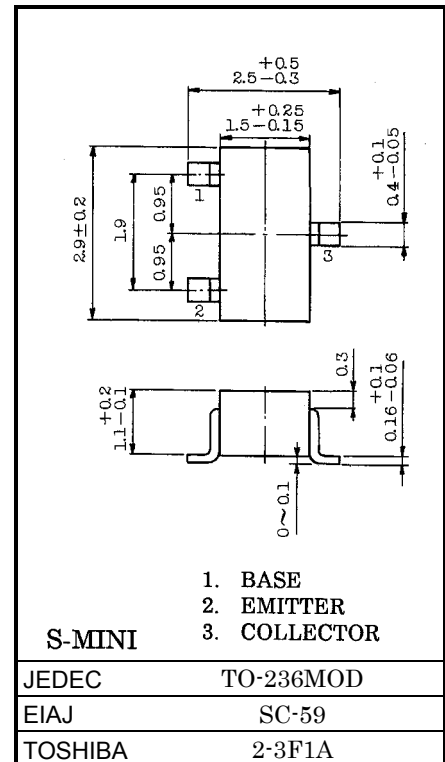
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN1412, RN1413

### Equivalent Circuit



### Maximum Ratings (Ta = 25°C)

Characterisitic	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	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C



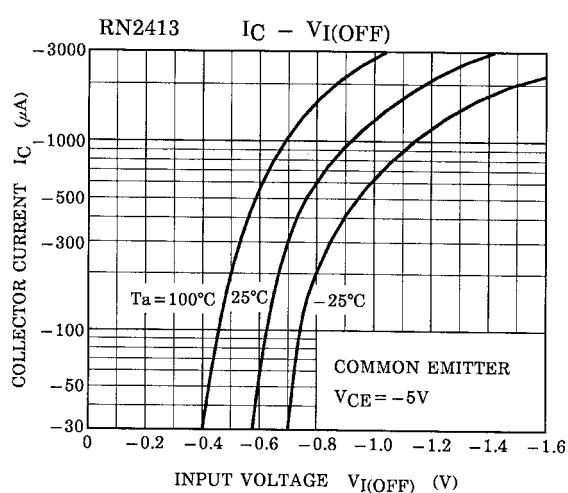
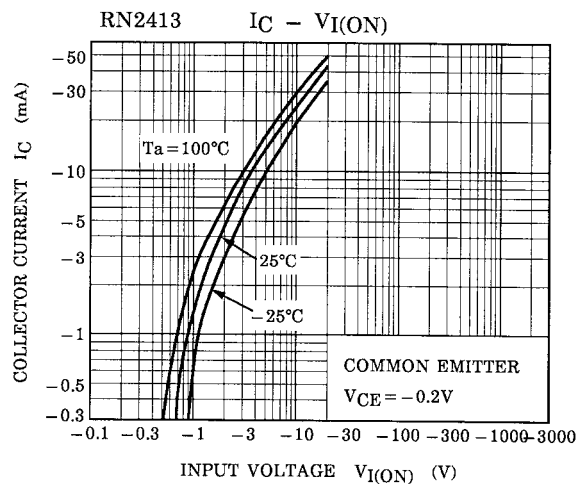
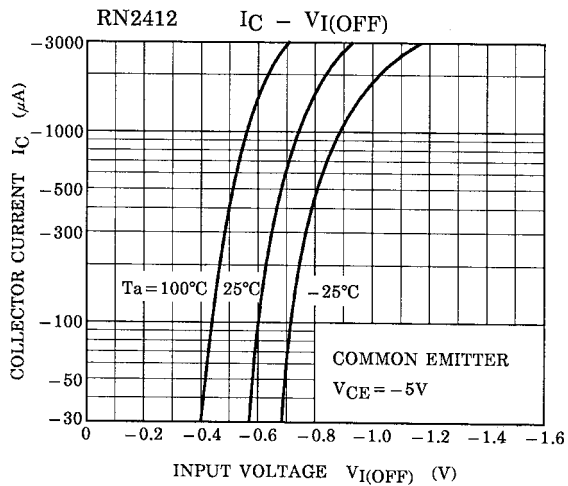
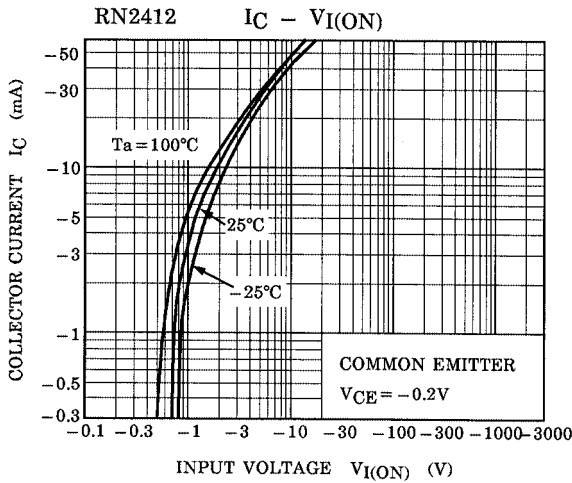
Weight: 0.012g

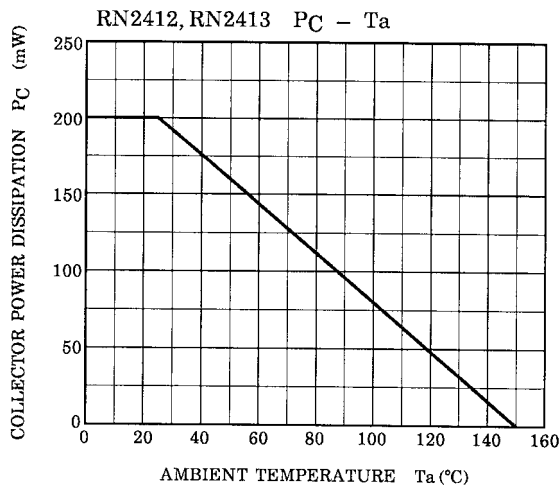
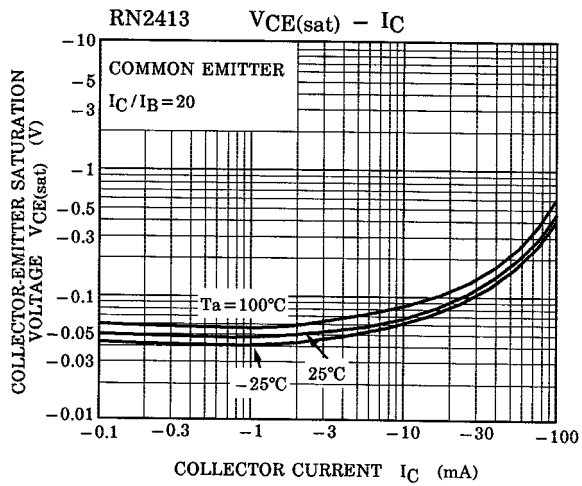
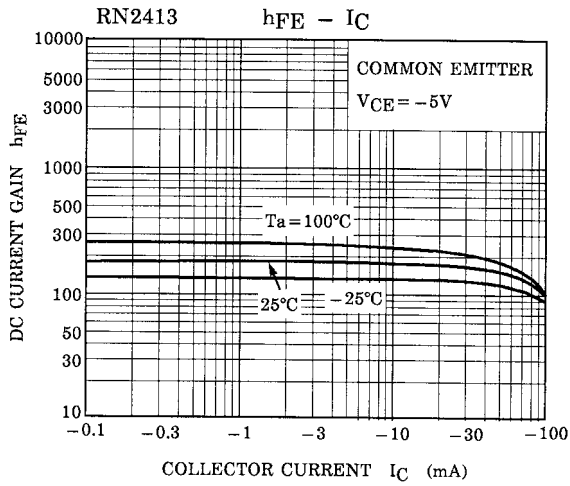
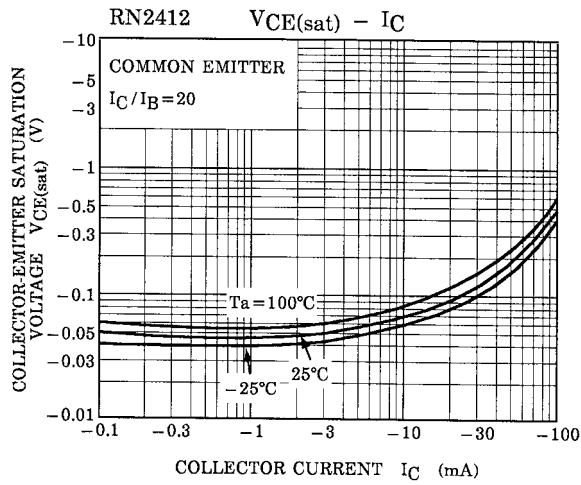
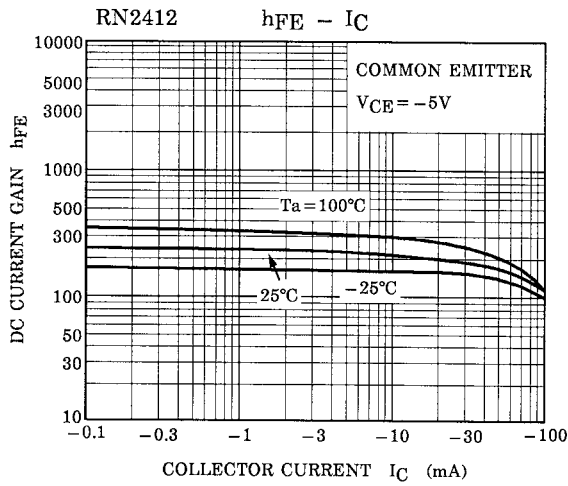
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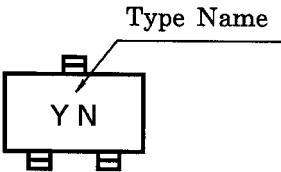
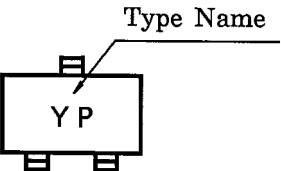
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Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	—	V <sub>CB</sub> = -50V, I <sub>E</sub> = 0	—	—	-100	nA
Emitter cut-off current		IEBO	—	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</sub> (sat)	—	I <sub>C</sub> = -5mA, I <sub>B</sub> = -0.25mA	—	-0.1	-0.3	V
Translation frequency		f <sub>T</sub>	—	V <sub>CE</sub> = -10V, I <sub>C</sub> = -5mA	—	250	—	MHz
Collector output capacitance		C <sub>ob</sub>	—	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz	—	3	6	pF
Input resistor	RN2412	R1	—	—	15.4	22	28.6	kΩ
	RN2413				32.9	47	61.1	





Type Name	Marking
RN2412	 <p>The diagram shows a rectangular component with three pins: one on the top edge and two on the bottom edge. The text 'Y N' is printed inside the rectangle. A leader line points from the text 'Type Name' to the top pin.</p>
RN2413	 <p>The diagram shows a rectangular component with three pins: one on the top edge and two on the bottom edge. The text 'Y P' is printed inside the rectangle. A leader line points from the text 'Type Name' to the top pin.</p>