

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

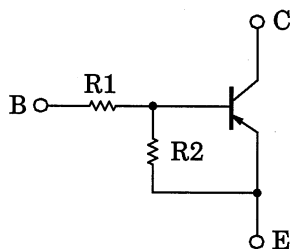
RN2407, RN2408, RN2409

Switching, Inverter Circuit, Interface Circuit
And Driver Circuit Applications

Unit in mm

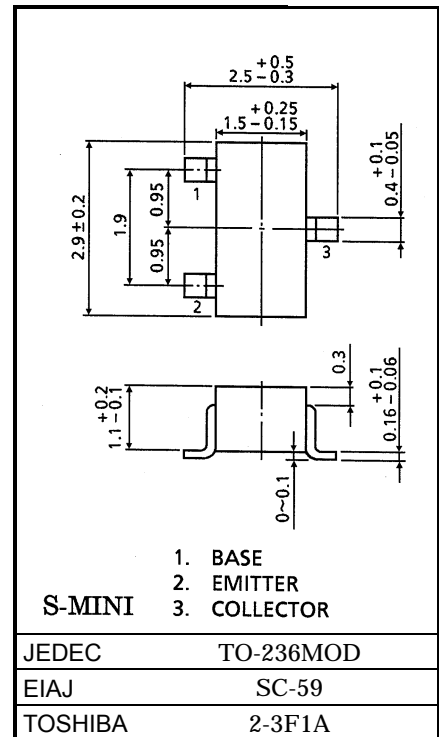
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN1407~1409

Equivalent Circuit



Type No.	R1 (kΩ)	R2 (kΩ)
RN2407	10	47
RN2408	22	47
RN2409	47	22

Bias Resistor Values



Weight: 0.012g

Maximum Ratings (Ta

= 25°C)

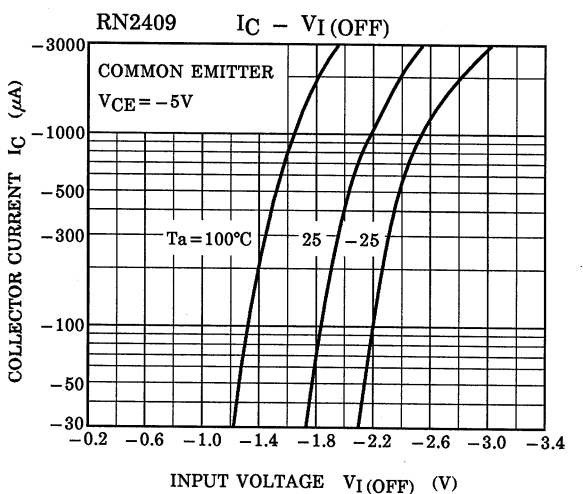
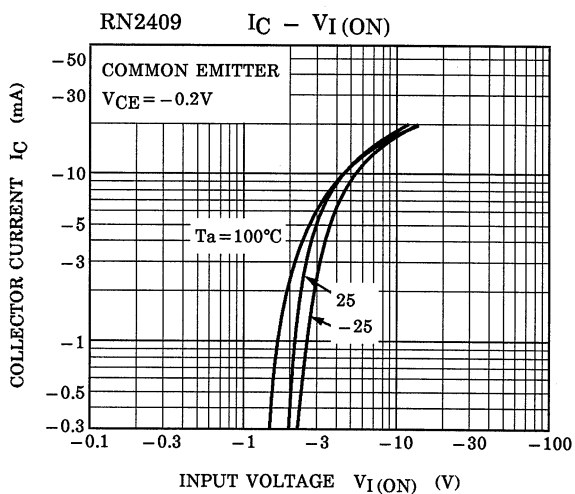
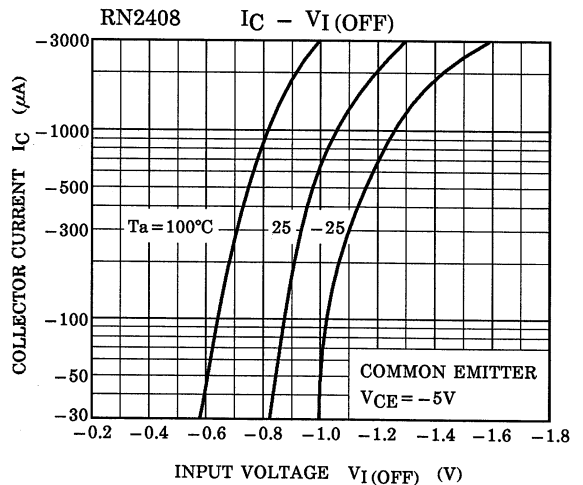
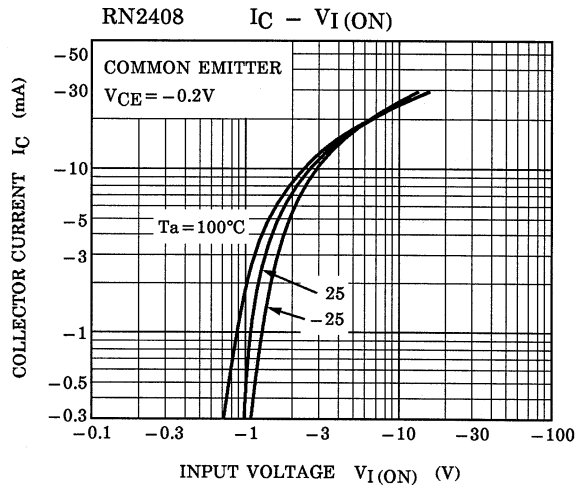
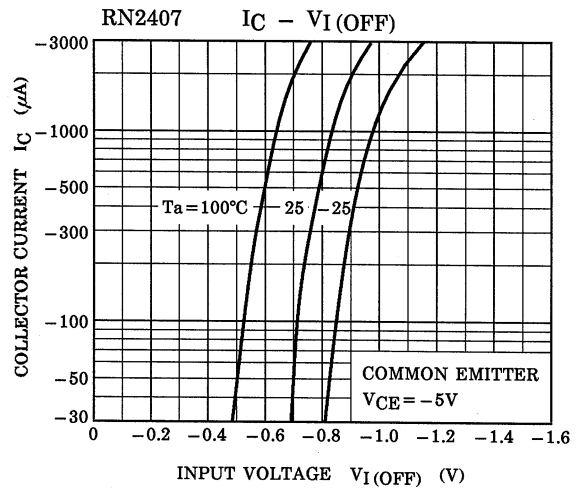
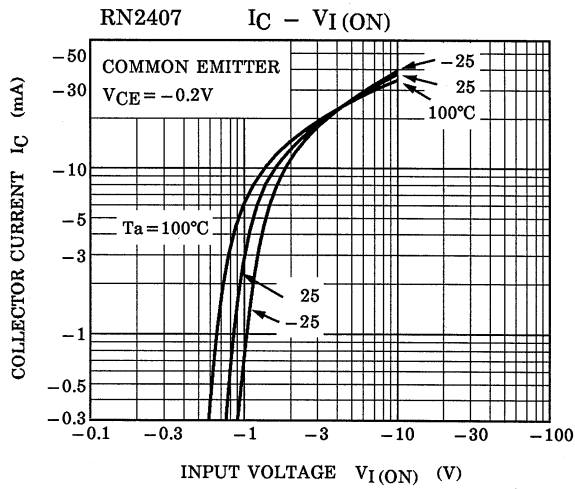
Characteristic	Symbol	Rating	Unit	
Collector-base voltage	RN2407~RN2409	V_{CB0}	-50	V
Collector-emitter voltage		V_{CEO}	-50	V
Emitter-base voltage	RN2407	V_{EBO}	-6	V
	RN2408		-7	
	RN2409		-15	
Collector current	RN2407~RN2409	I_C	-100	mA
Collector power dissipation		P_C	200	mW
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-5~150	°C

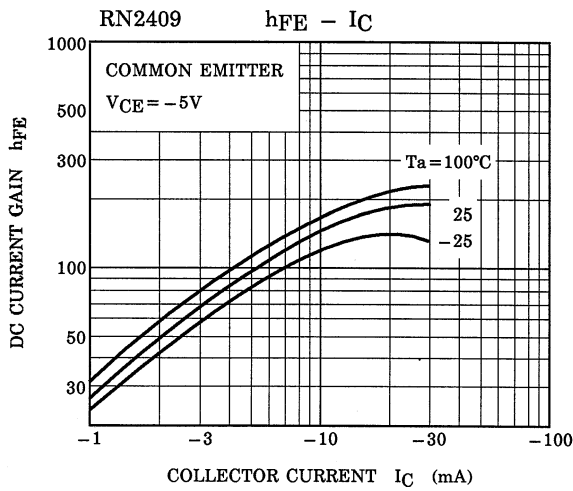
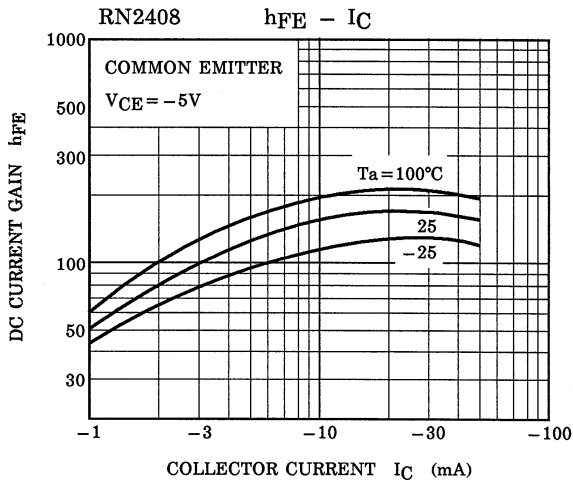
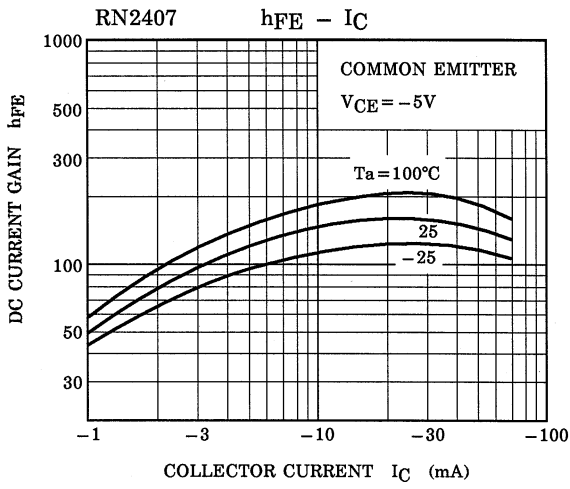
961001EAA2

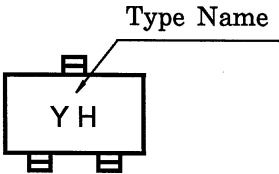
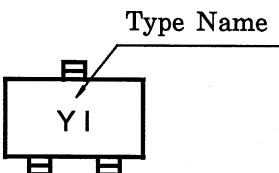
- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2407~RN2409	ICBO	—	V _{CB} = -50V, I _E = 0	—	—	-0.1	nA
		ICEO	—	V _{CE} = -50V, I _B = 0	—	—	-0.5	
Emitter cut-off current	RN2407	IEBO	—	V _{EB} = -6V, I _C = 0	-0.081	—	-0.15	mA
	RN2408		—	V _{EB} = -7V, I _C = 0	-0.078	—	-0.145	
	RN2409		—	V _{EB} = -15V, I _C = 0	-0.167	—	-0.311	
DC current gain	RN2407	h _{FE}	—	V _{CE} = -5V, I _C = -10mA	80	—	—	—
	RN2408		—		80	—	—	
	RN2409		—		70	—	—	
Collector-emitter saturation voltage	RN2407~RN2409	V _{CE (sat)}	—	I _C = -5mA, I _B = -0.25mA	—	-0.1	-0.3	V
Input voltage (ON)	RN2407	V _{I (ON)}	—	V _{CE} = -0.2V, I _C = -5mA	-0.7	—	-1.8	V
	RN2408		—		-1.0	—	-2.6	
	RN2409		—		-2.2	—	-5.8	
Input voltage (OFF)	RN2407	V _{I (OFF)}	—	V _{CE} = -5V, I _C = -0.1mA	-0.5	—	-1.0	V
	RN2408		—		-0.6	—	-1.16	
	RN2409		—		-1.5	—	-2.6	
Translation frequency	RN2407~RN2409	f _T	—	V _{CE} = -10V, I _C = -5mA	—	200	—	MHz
Collector output capacitance	RN2407~RN2409	C _{ob}	—	V _{CB} = -10V, I _E = 0, f = 1MHz	—	3	6	pF
Input resistor	RN2407	R1	—	—	7	10	13	kΩ
	RN2408		—		15.4	22	28.6	
	RN2409		—		32.9	47	61.1	
Resistor ratio	RN2407	R1/R2	—	—	0.191	0.213	0.232	—
	RN2408		—		0.421	0.468	0.515	
	RN2409		—		1.92	2.14	2.35	





Type Name	Marking
RN2407	
RN2408	
RN2409	