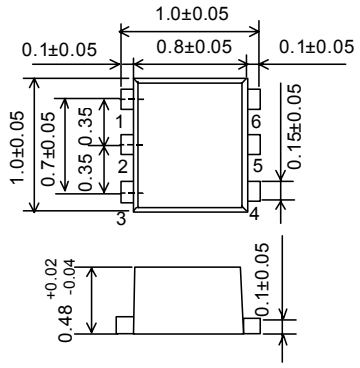
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN2907FS,RN2908FS,RN2909FS

Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications.

- Two devices are incorporated into a fine pitch small mold (6-pin) package.
- Incorporating a bias resistor into a transistor reduces parts count. Reducing the parts count enables the manufacture of ever more compact equipment and lowers assembly cost.
- Complementary to RN1907FS~RN1909FS

Unit: mm



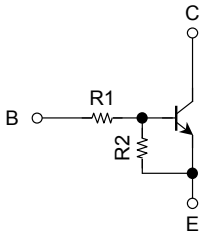
1.EMITTER1 (E1)
2.BASE1 (B1)
3.COLLECTOR2 (C2)
4.EMITTER2 (E2)
5.BASE2 (B2)
6.COLLECTOR1 (C1)

fS6

JEDEC	—
JEITA	—
TOSHIBA	2-1F1D

Weight: 0.001g (typ.)

Equivalent Circuit and Bias Resistor Values

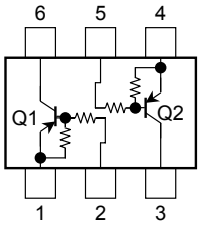


Type No.	R1 (kΩ)	R2 (kΩ)
RN2907FS	10	47
RN2908FS	22	47
RN2909FS	47	22

Maximum Ratings (Ta = 25°C) (Q1, Q2 common)

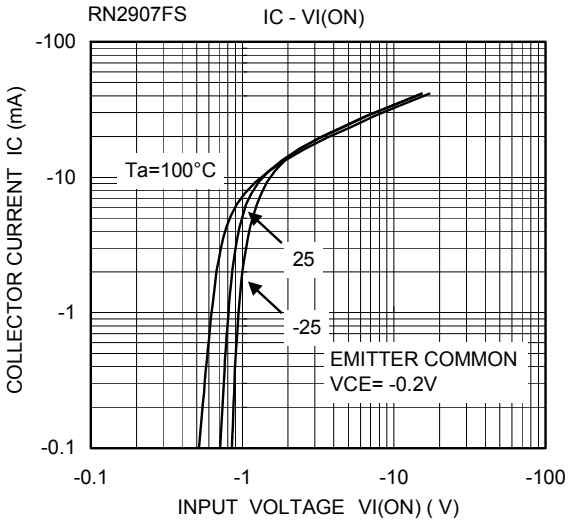
Characteristics		Symbol	Rating	Unit
Collector-base voltage	RN2907FS~ RN2909FS	V_{CBO}	−20	V
Collector-emitter voltage		V_{CEO}	−20	V
Emitter-base voltage	RN2907FS	V_{EBO}	−6	V
	RN2908FS		−7	
	RN2909FS		−15	
Collector current	RN2907FS~ RN2909FS	I_C	−50	mA
Collector power dissipation		P_C	50	mW
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55~150	°C

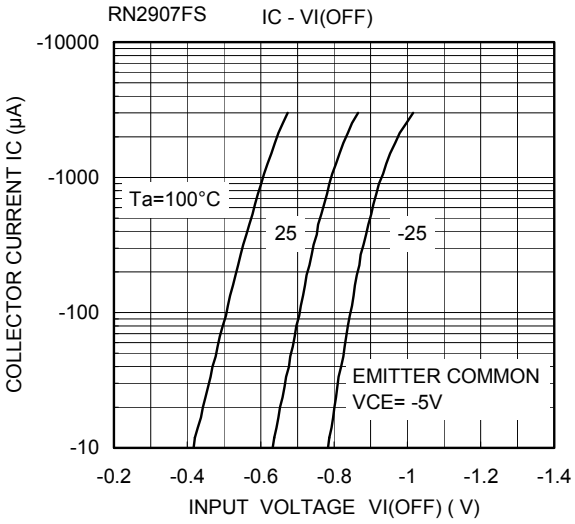
Equivalent Circuit (top view)

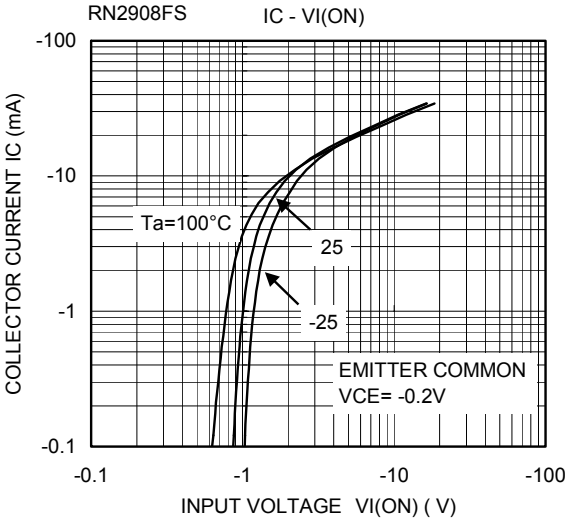


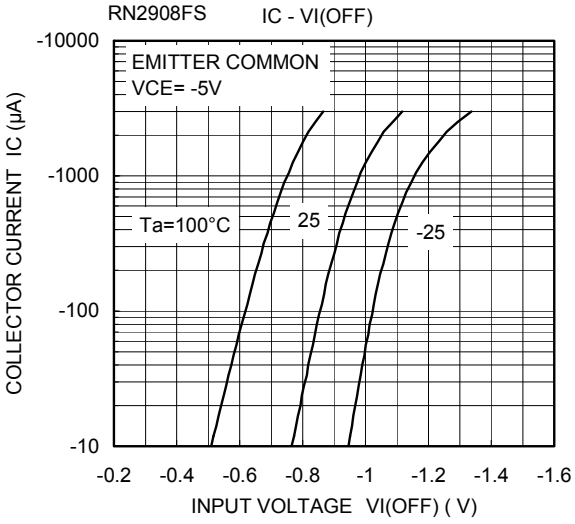
Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

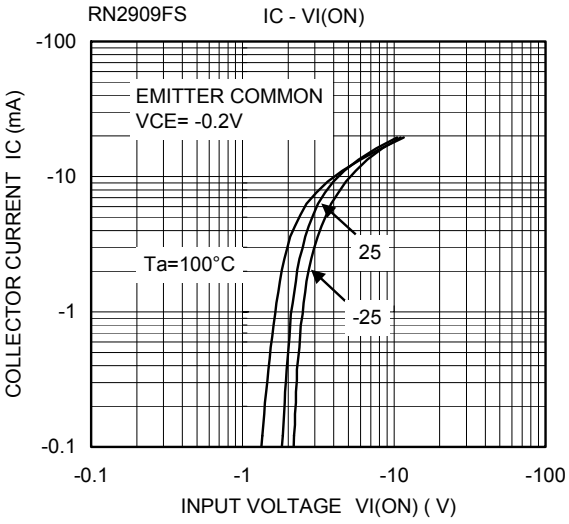
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2907FS~2909FS	I_{CBO}	V_{CB} = −20 V, I_E = 0	—	—	−100	nA
		I_{CEO}	V_{CE} = −20 V, I_B = 0	—	—	−500	
Emitter cut-off current	RN2907FS	I_{EBO}	V_{EB} = −6 V, I_C = 0	−0.088	—	−0.131	mA
	RN2908FS		V_{EB} = −7 V, I_C = 0	−0.085	—	−0.126	
	RN2909FS		V_{EB} = −15 V, I_C = 0	0.182	—	−0.271	
DC current gain	RN2907FS	h_{FE}	V_{CE} = −5 V, I_C = −10 mA	120	—	—	
	RN2908FS			120	—	—	
	RN2909FS			100	—	—	
Collector-emitter saturation voltage	RN2907FS~2909FS	$V_{CE\ (sat)}$	I_C = −5 mA, I_B = −0.25 mA	—	—	−0.15	V
Input voltage (ON)	RN2907FS	$V_{I\ (ON)}$	V_{CE} = −0.2 V, I_C = −5 mA	−0.7	—	−1.5	V
	RN2908FS			−0.8	—	−2.2	
	RN2909FS			−1.6	—	−5.0	
Input voltage (OFF)	RN2907FS	$V_{I\ (OFF)}$	V_{CE} = −5 V, I_C = −0.1 mA,	−0.5	—	−1.0	V
	RN2908FS			−0.6	—	−1.1	
	RN2909FS			−1.3	—	−2.6	
Collector output capacitance	RN2907FS~2909FS	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	1.2	—	pF
Input resistor	RN2907FS	R1	—	8	10	12	kΩ
	RN2908FS			17.6	22	26.4	
	RN2909FS			37.6	47	56.4	
Resistor ratio	RN2907FS	R1/R2	—	0.17	0.213	0.255	
	RN2908FS			0.374	0.468	0.562	
	RN2909FS			1.71	2.14	2.56	

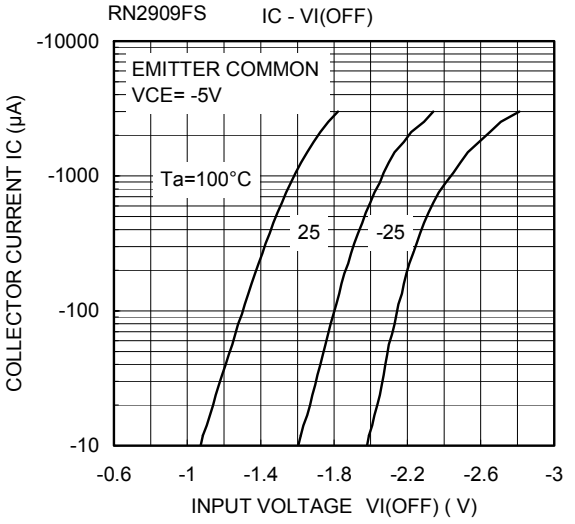


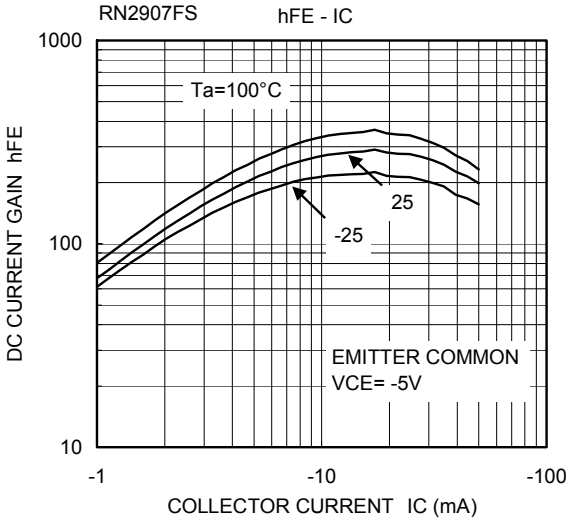


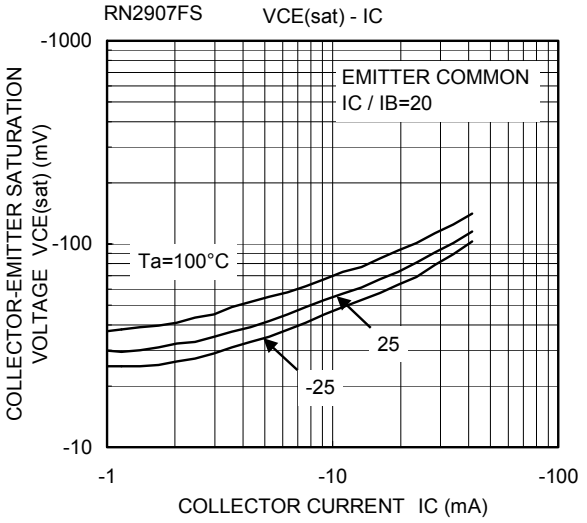


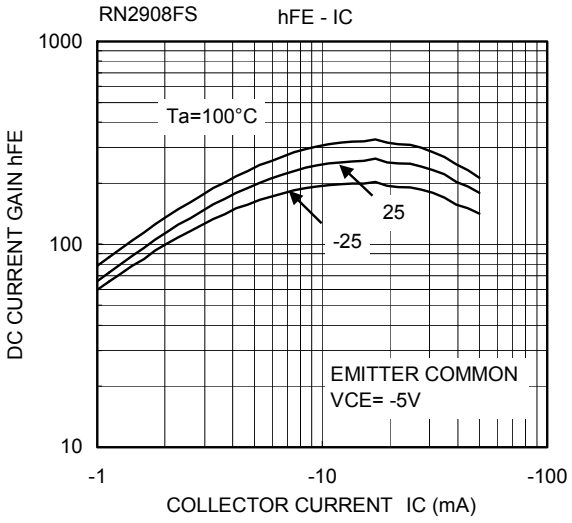


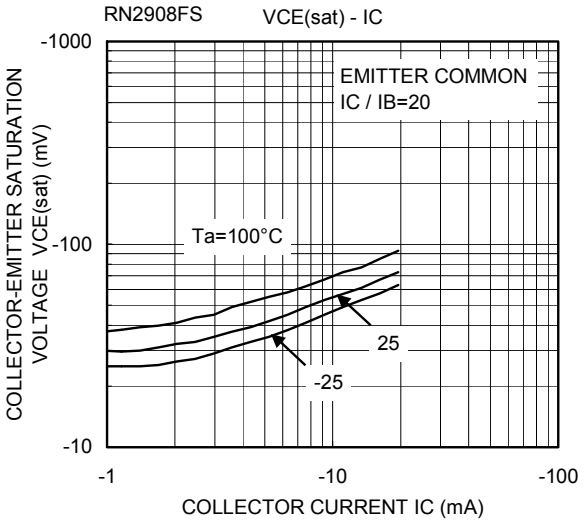


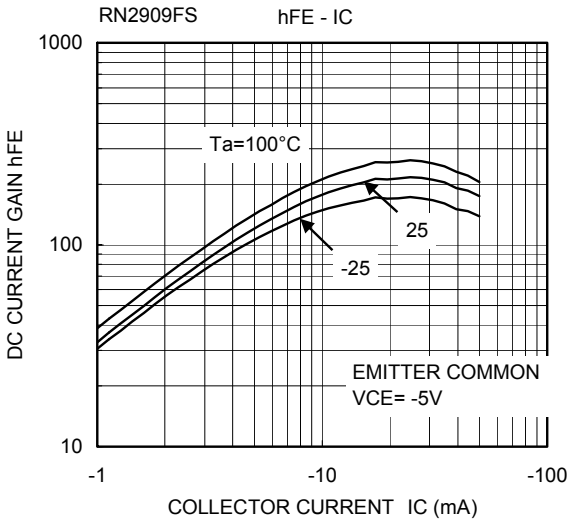


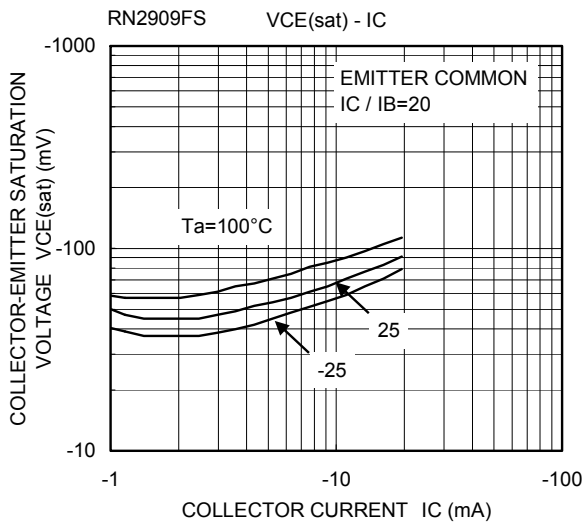


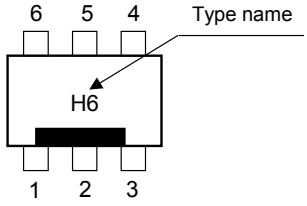
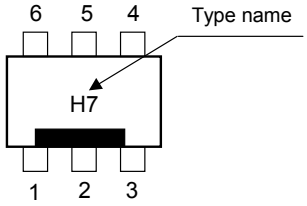
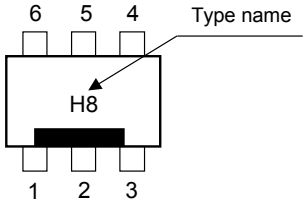










Type Name	Marking
RN2907FS	
RN2908FS	
RN2909FS	

HANDLING PRECAUTION

When handling individual devices (which are not yet mounted on a circuit board), be sure that the environment is protected against electrostatic discharge. Operators should wear anti-static clothing, and containers and other objects that come into direct contact with devices should be made of anti-static materials.

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