

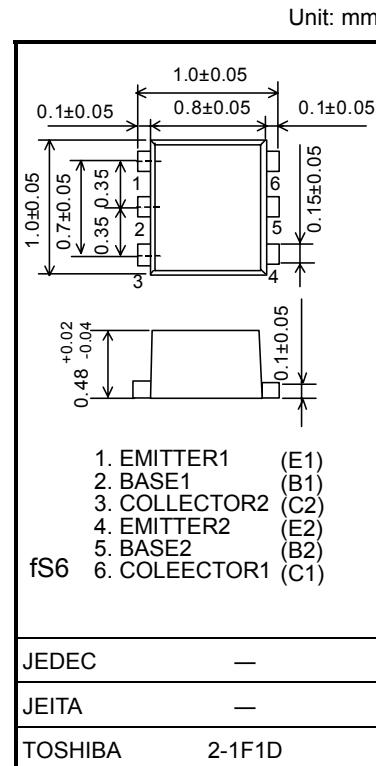
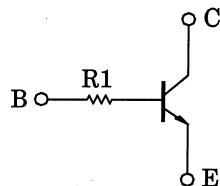
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process) (Bias Resistor Built-in Transistor)

# RN1910FS,RN1911FS

Switching, Inverter Circuit, Interface Circuit and  
Driver Circuit Applications

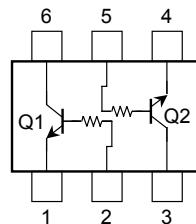
- Two devices are incorporated into a fine pitch small mold (6-pin) package.
- Incorporating a bias resistor into a transistor reduces parts count.
- Reducing the parts count enables the manufacture of ever more compact equipment and lowers assembly cost.
- Complementary to RN2910FS, RN2911FS

## Equivalent Circuit and Bias Resistor Values



Weight: 0.001g (typ.)

## Equivalent Circuit (top view)



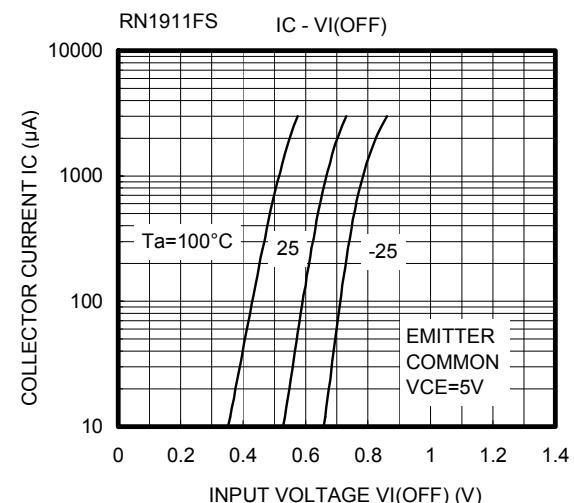
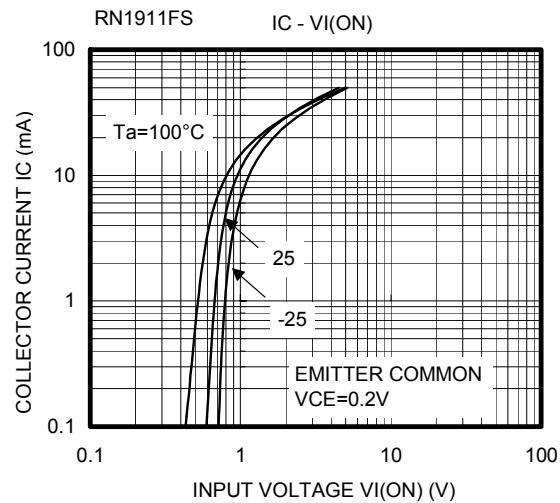
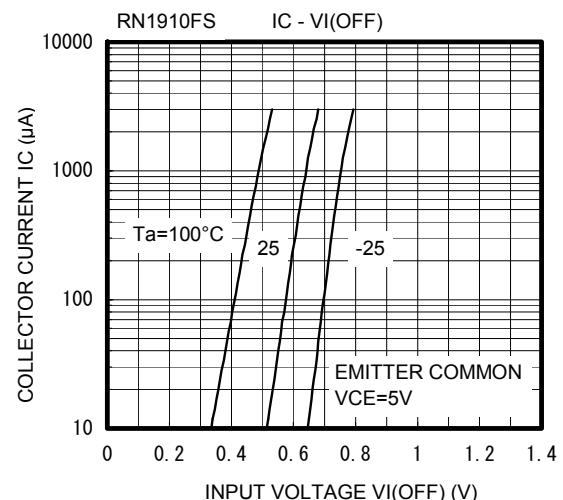
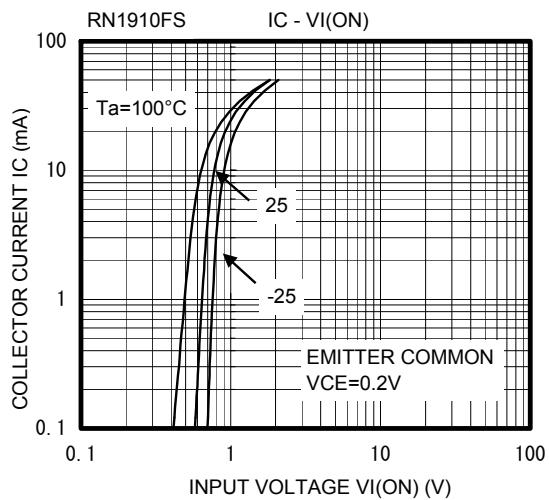
## Maximum Ratings (Ta = 25°C) (Q1, Q2 common)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	20	V
Collector-emitter voltage	V <sub>CEO</sub>	20	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	50	mA
Collector power dissipation	P <sub>C</sub> (Note)	50	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-55~150	°C

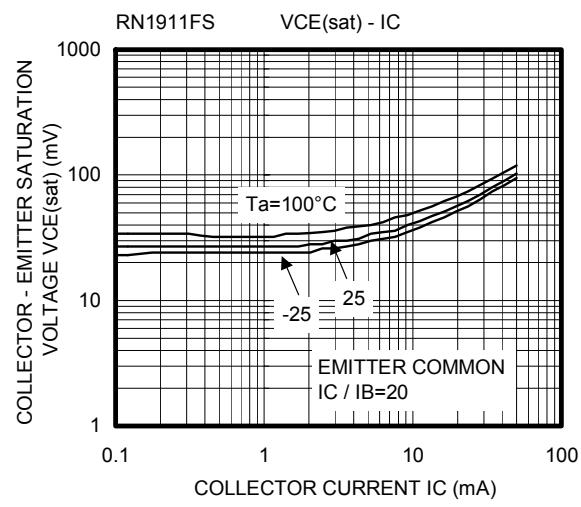
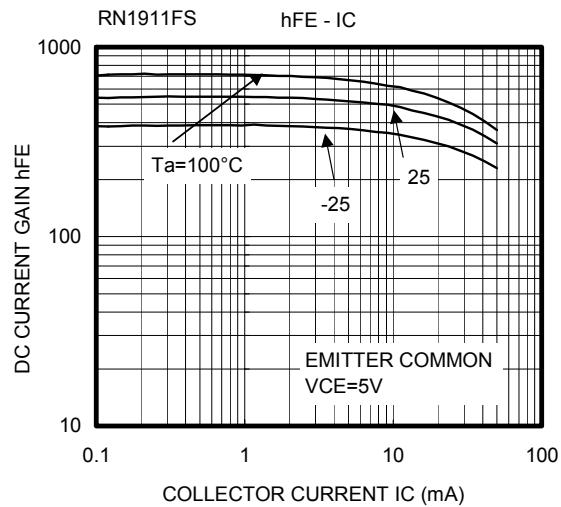
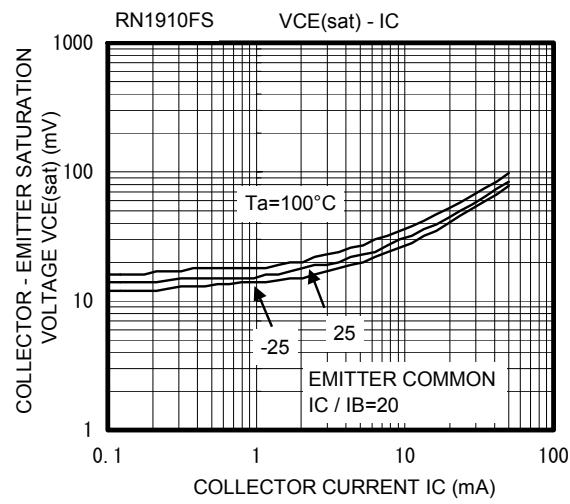
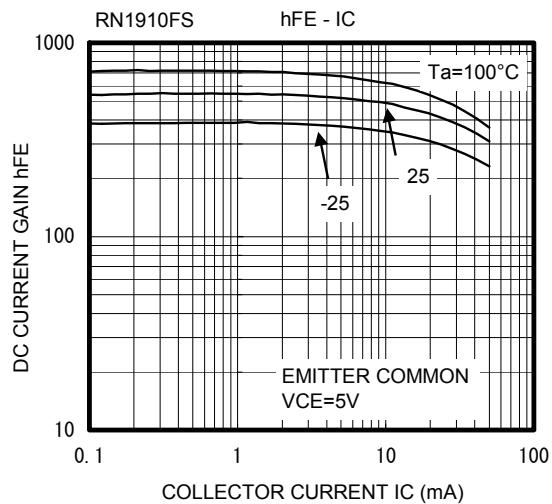
Note: Total rating

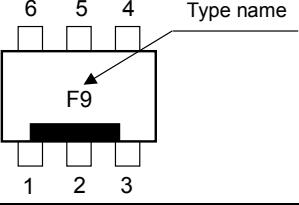
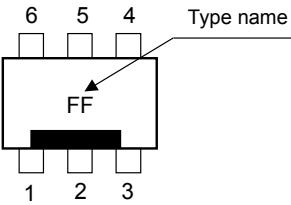
## Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit	
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 20 V, I <sub>E</sub> = 0	—	—	100	nA	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0	—	—	100	nA	
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 1 mA	300	—	—		
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 5 mA, I <sub>B</sub> = 0.25 mA	—	—	0.15	V	
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	—	1.2	—	pF	
Input resistor	RN1910FS	R1	—	3.76	4.7	5.64	kΩ
	RN1911FS			8	10	12	

**(Q1, Q2 common)**

(Q1,Q2 common)



Type Name	Marking
RN1910FS	
RN1911FS	

## **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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