

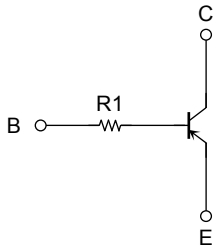
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Transistor with Built-in Bias Resistor)

# RN2912AFS, RN2913AFS

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 the parts count. Reducing the parts count enables the manufacture of ever more compact equipment and lowers assembly costs.
- Complementary to the RN1912AFS/RN1913AFS

## Equivalent Circuit and Bias Resistor Values



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

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-50	V
Collector-emitter voltage	$V_{CEO}$	-50	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-80	mA
Collector power dissipation	$P_C$ (Note 1)	50	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C

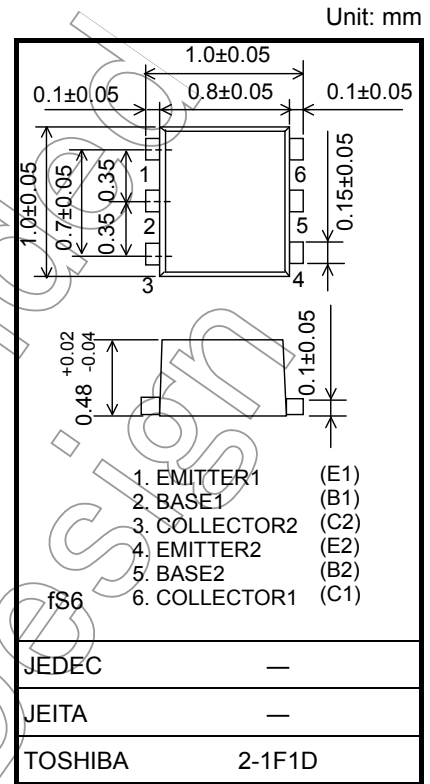
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1: Total rating

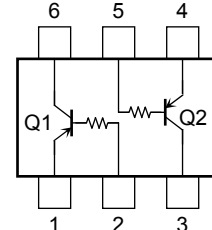
## Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

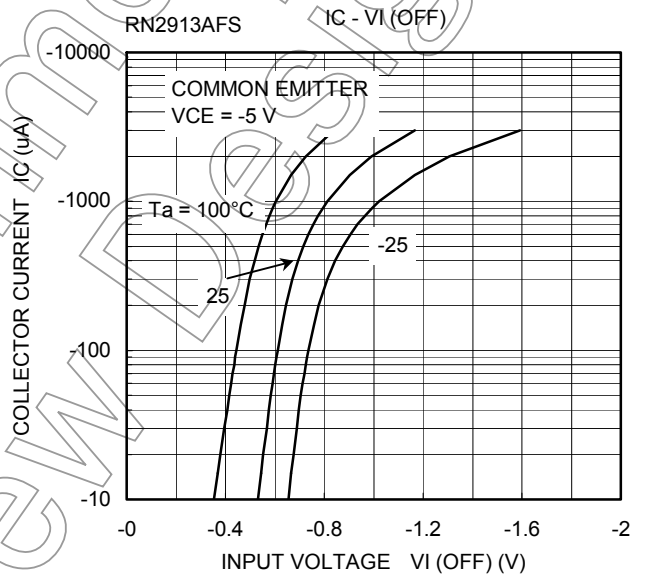
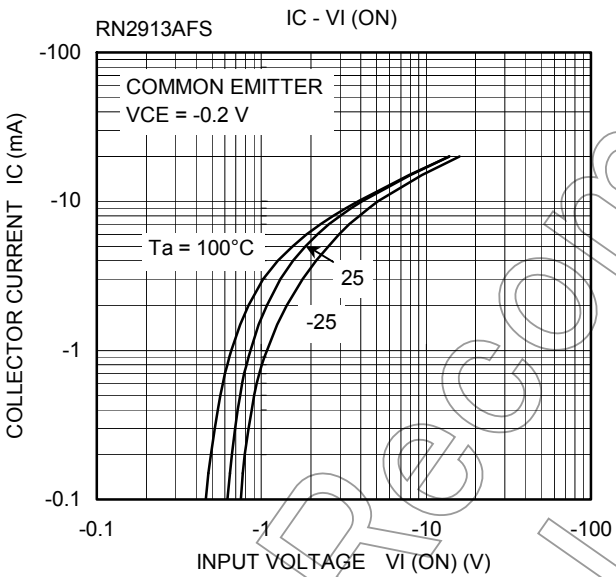
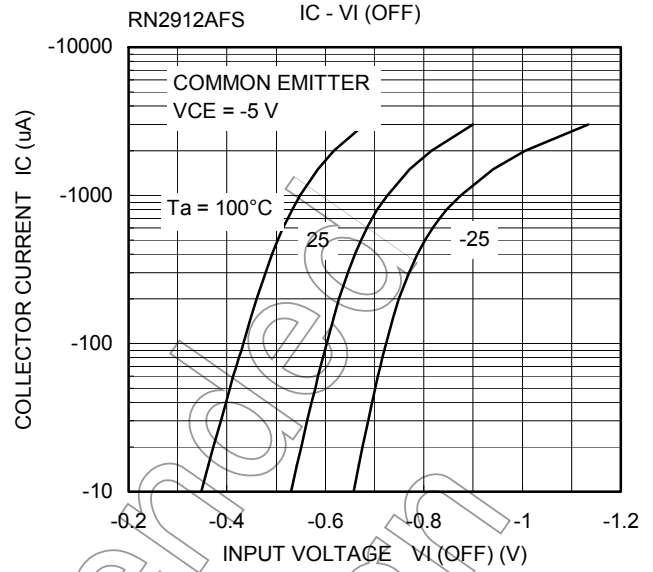
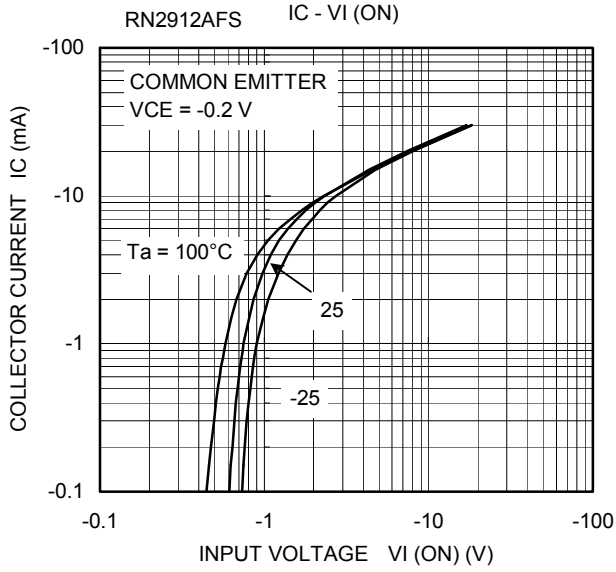
Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cutoff current		$I_{CB0}$	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-100	nA
Emitter cutoff current		$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-100	nA
DC current gain		$h_{FE}$	$V_{CE} = -5\text{ V}, I_C = -1\text{ mA}$	120	—	400	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -5\text{ mA}, I_B = -0.25\text{ mA}$	—	—	-0.15	V
Collector output capacitance		$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$	—	0.9	—	pF
Input resistor	RN2912AFS	R1	—	17.6	22	26.4	kΩ
	RN2913AFS			37.6	47	56.4	



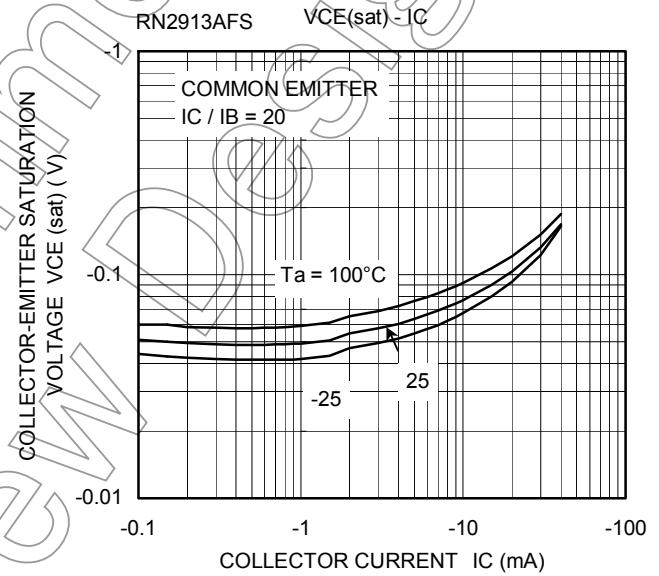
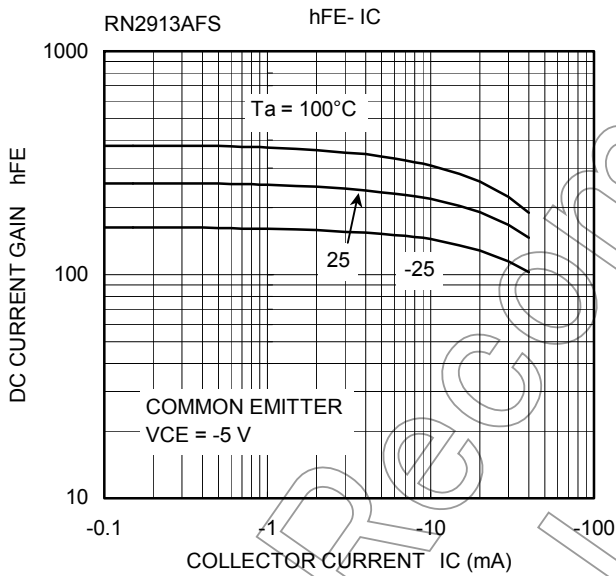
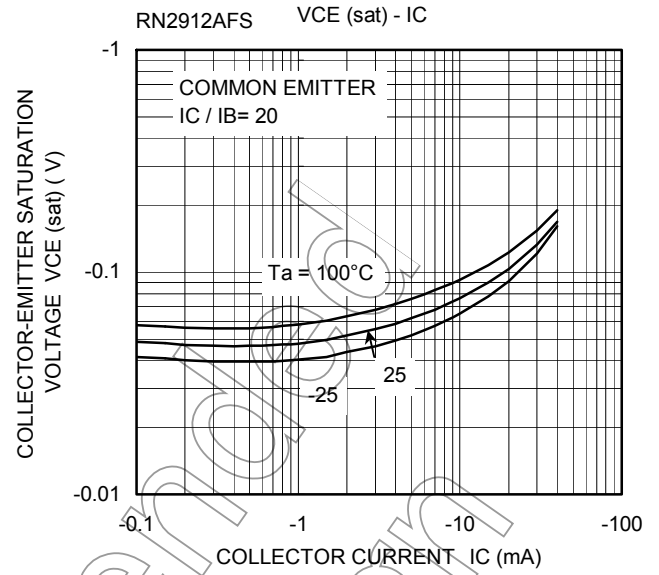
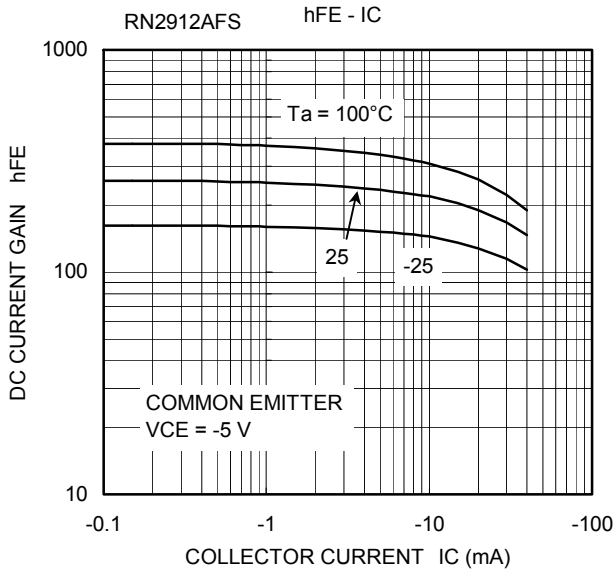
Weight: 0.001 g (typ.)

## Equivalent Circuit (top view)





Not for New



Not for New

Type Name	Marking
RN2912AFS	<p>The diagram shows a rectangular component with six pins. The top three pins are labeled 6, 5, and 4 from left to right. The bottom three pins are labeled 1, 2, and 3 from left to right. The text 'DH' is printed on the component, with an arrow pointing to it. A line labeled 'Type Name' points to the top-right corner of the component. A black rectangular bar is located below the 'DH' marking.</p>
RN2913AFS	<p>The diagram shows a rectangular component with six pins. The top three pins are labeled 6, 5, and 4 from left to right. The bottom three pins are labeled 1, 2, and 3 from left to right. The text 'DJ' is printed on the component, with an arrow pointing to it. A line labeled 'Type Name' points to the top-right corner of the component. A black rectangular bar is located below the 'DJ' marking.</p>

Not Recommended for New Design

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