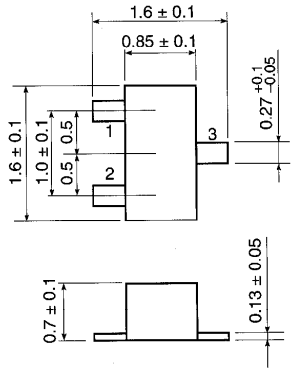
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

RN2107F, RN2108F, RN2109F

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT

AND DRIVER CIRCUIT APPLICATIONS.

Unit in mm

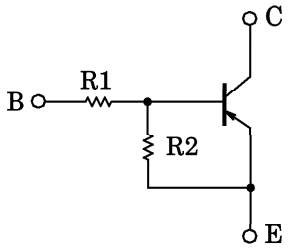


1. BASE
2. EMITTER
3. COLLECTOR

JEDEC	—
EIAJ	—
TOSHIBA	2-2HA1A

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN1107F~RN1109F

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



TYPE No.	R1 (kΩ)	R2 (kΩ)
RN2107F	10	47
RN2108F	22	47
RN2109F	47	22

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN2107F~2109F	V_{CBO}	−50	V
Collector-Emitter Voltage		V_{CEO}	−50	V
Emitter-Base Voltage	RN2107F	V_{EBO}	−6	V
	RN2108F		−7	
	RN2109F		−15	
Collector Current	RN2107F~2109F	I_C	−100	mA
Collector Power Dissipation		P_C	100	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

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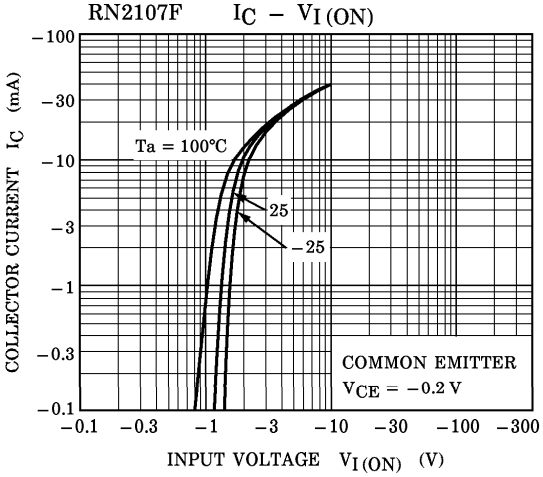
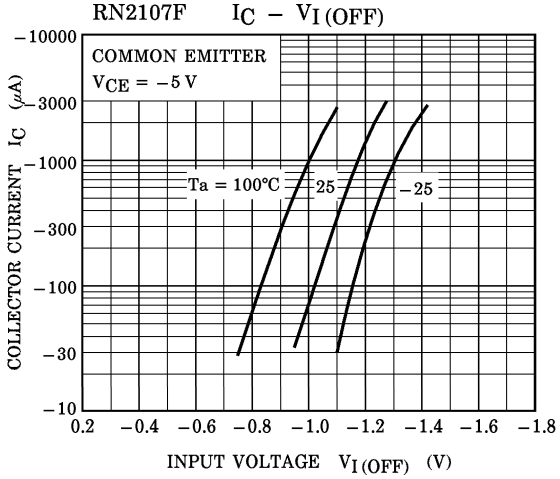
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN2107F~2109F	I_{CBO}	V_{CB} = −50 V, I_E = 0	—	—	−100	nA
		I_{CEO}	V_{CE} = −50 V, I_B = 0	—	—	−500	nA
Emitter Cut-off Current	RN2107F	I_{EBO}	V_{EB} = −6 V, I_C = 0	−0.081	—	−0.15	mA
	RN2108F		V_{EB} = −7 V, I_C = 0	−0.078	—	−0.145	
	RN2109F		V_{EB} = −15 V, I_C = 0	−0.167	—	−0.311	
DC Current Gain	RN2107F	h_{FE}	V_{CE} = −5 V, I_C = −10 mA	80	—	—	
	RN2108F			80	—	—	
	RN2109F			70	—	—	
Collector-Emitter Saturation Voltage	RN2107F~2109F	$V_{CE(sat)}$	I_C = −5 mA, I_B = −0.25 mA	—	−0.1	−0.3	V
Input Voltage (ON)	RN2107F	$V_{I(ON)}$	V_{CE} = −0.2 V, I_C = −5 mA	−0.7	—	−1.8	V
	RN2108F			−1.0	—	−2.6	
	RN2109F			−2.2	—	−5.8	
Input Voltage (OFF)	RN2107F	$V_{I(OFF)}$	V_{CE} = −5 V, I_C = −0.1 mA	−0.5	—	−1.0	V
	RN2108F			−0.6	—	−1.16	
	RN2109F			−1.5	—	−2.6	
Transition Frequency	RN2107F~2109F	f_T	V_{CE} = −10 V, I_C = −5 mA	—	200	—	MHz
Collector Output Capacitance	RN2107F~2109F	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	3	6	pF
Input Resistor	RN2107F	R1	—	7	10	13	kΩ
	RN2108F			15.4	22	28.6	
	RN2109F			32.9	47	61.1	
Resistor Ratio	RN2107F	R1 / R2	—	0.191	0.213	0.232	
	RN2108F			0.421	0.468	0.515	
	RN2109F			1.92	2.14	2.35	

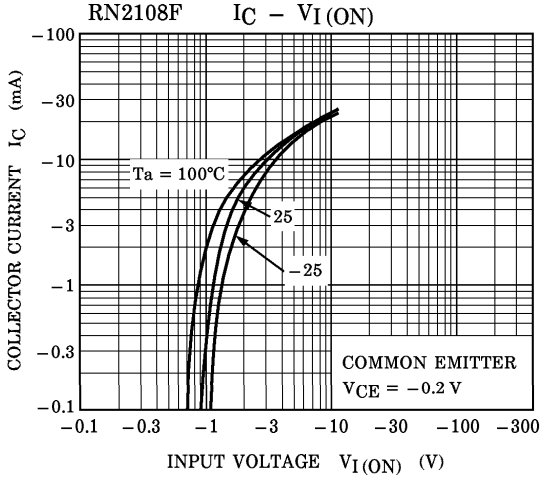
RN2107F $I_C - V_{I(ON)}$



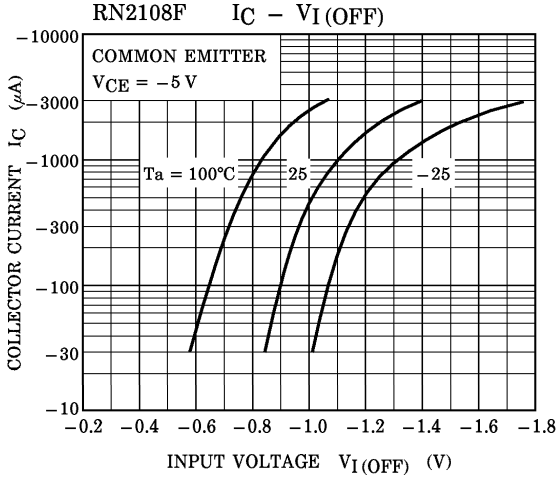
RN2107F $I_C - V_{I(OFF)}$



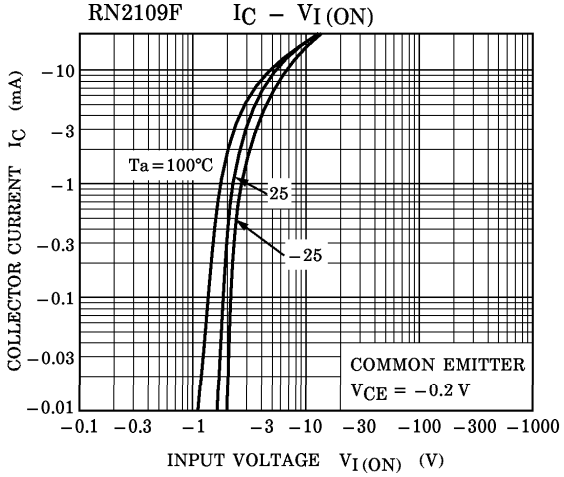
RN2108F $I_C - V_{I(ON)}$



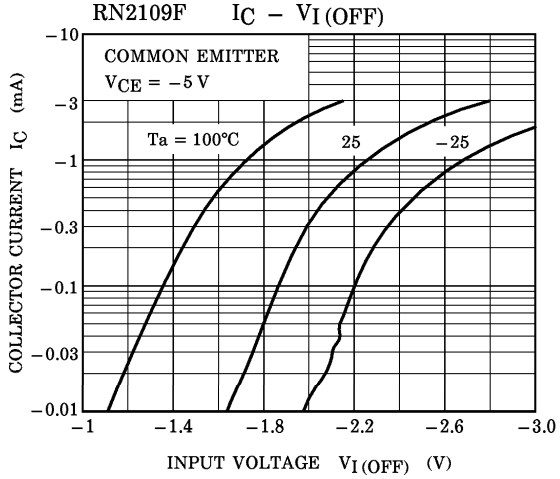
RN2108F $I_C - V_{I(OFF)}$



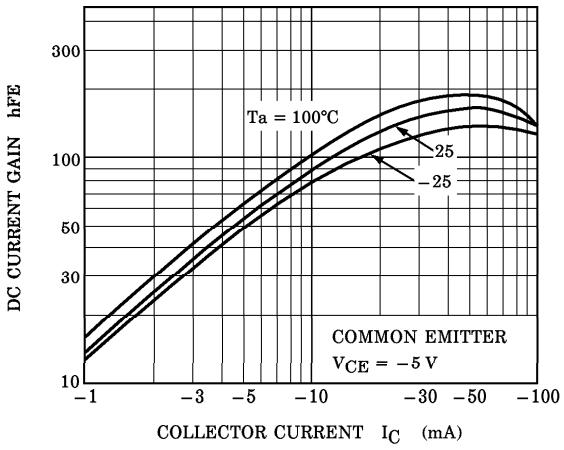
RN2109F $I_C - V_{I(ON)}$



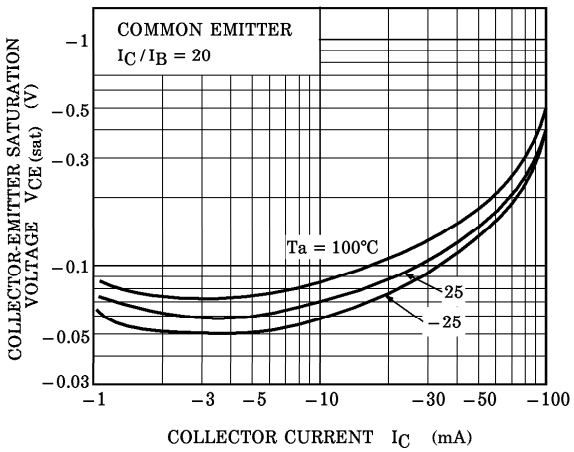
RN2109F $I_C - V_{I(OFF)}$



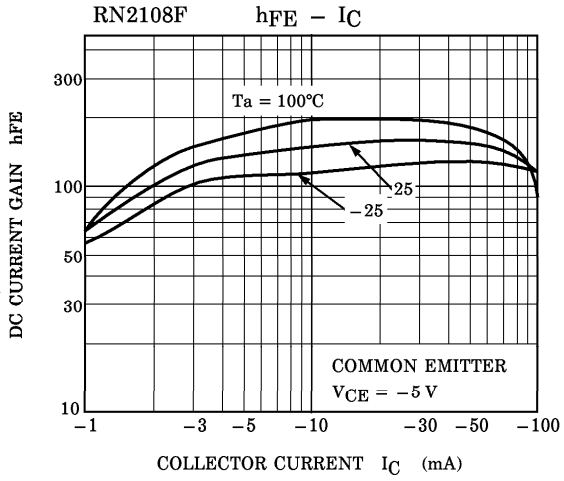
RN2107F h_{FE} – I_C



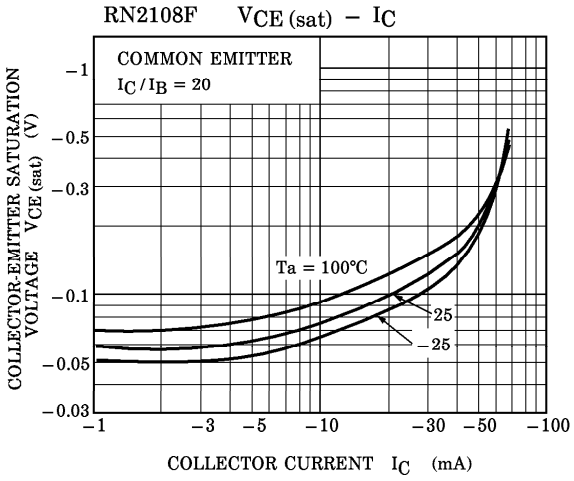
RN2107F $V_{CE\,(sat)}$ – I_C



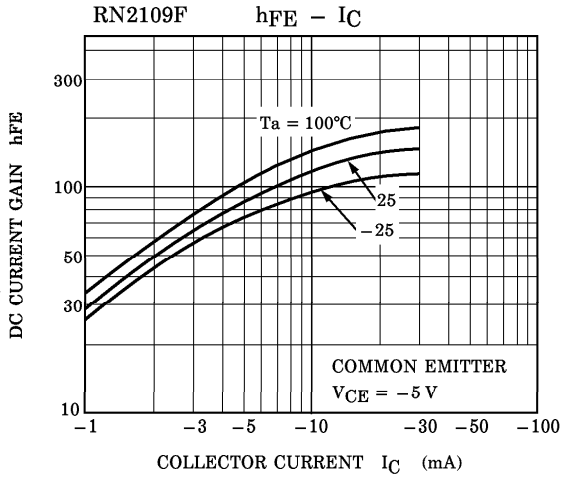
RN2108F h_{FE} – I_C



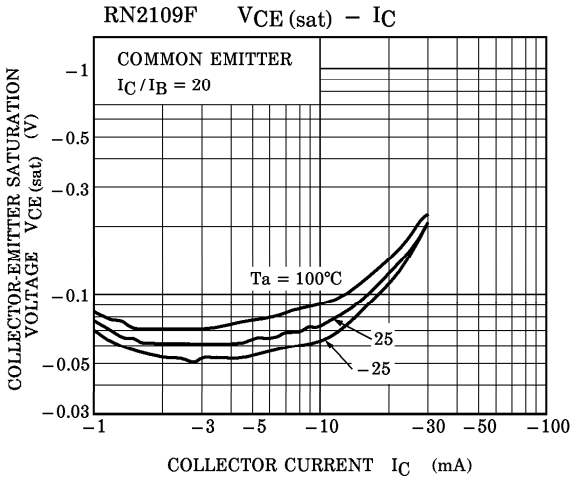
RN2108F $V_{CE\,(sat)}$ – I_C

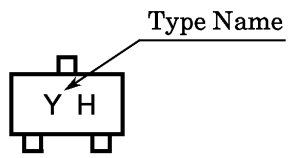
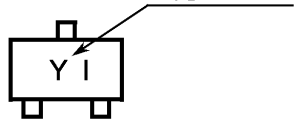


RN2109F h_{FE} – I_C



RN2109F $V_{CE\,(sat)}$ – I_C



TYPE NAME	MARKING
RN2107F	
RN2108F	
RN2109F