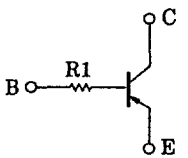
RN2112, 2113

(RN2112)

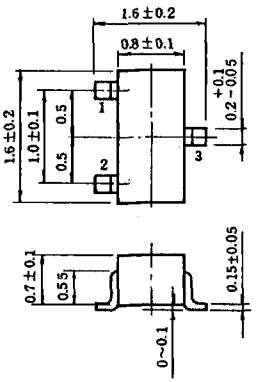
SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN1112, RN1113

EQUIVALENT CIRCUIT



Unit in mm



1. BASE
2. EMITTER
3. COLLECTOR

SSM	
JEDEC	—
EIAJ	—
TOSHIBA	2-2H1A

Weight : 2.4mg

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	−50	V
Collector-Emitter Voltage	V_{CEO}	−50	V
Emitter-Base Voltage	V_{EBO}	−5	V
Collector Current	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

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = −50V, I_E = 0	—	—	−100	nA
Emitter Cut-off Current		I_{EBO}	V_{EB} = −5V, I_C = 0	—	—	−100	nA
DC Current Gain		h_{FE}	V_{CE} = −5V, I_C = −1mA	120	—	400	
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = −5mA, I_B = −0.25mA	—	−0.1	−0.3	V
Transition Frequency		f_T	V_{CE} = −10V, I_C = −5mA	—	200	—	MHz
Collector Output Capacitance		C_{ob}	V_{CB} = −10V, I_E = 0, f = 1MHz	—	3	6	pF
Input Resistance	RN2112	R1	—	15.4	22	28.6	kΩ
	RN2113			32.9	47	61.1	

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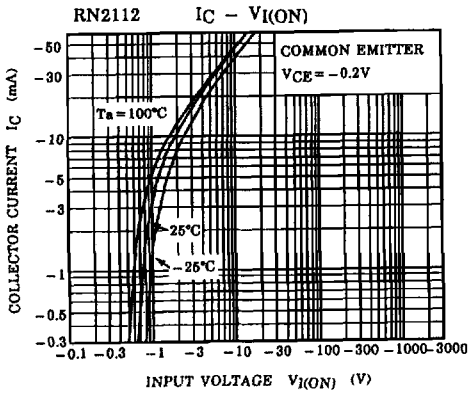
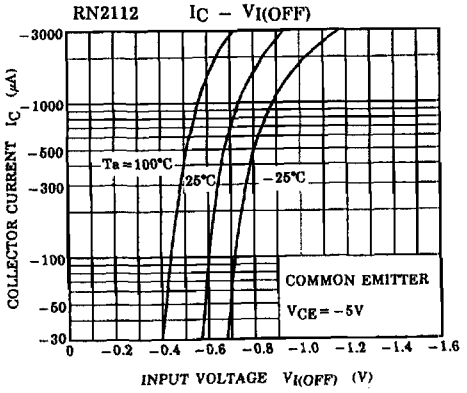
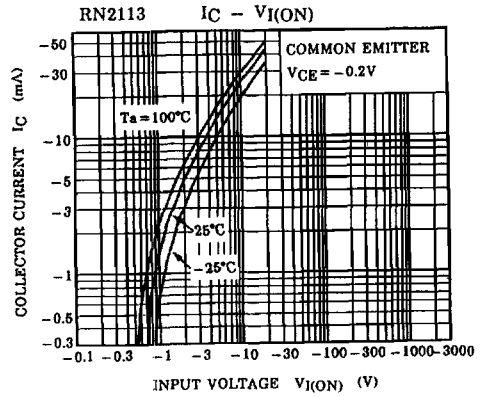
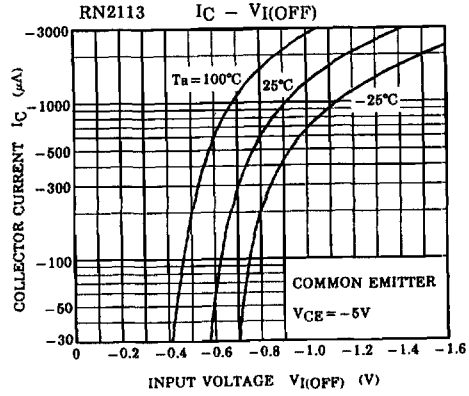

RN2112 I_C – $V_{I(ON)}$
COMMON EMITTER
V_{CE} = −0.2V
Ta = 100°C
25°C
−25°C
COLLECTOR CURRENT I_C (mA)
−50
−30
−10
−5
−3
−1
−0.5
−0.3
−0.1 −0.3 −1 −3 −10 −30 −100 −300 −1000 −3000
INPUT VOLTAGE $V_{I(ON)}$ (V)

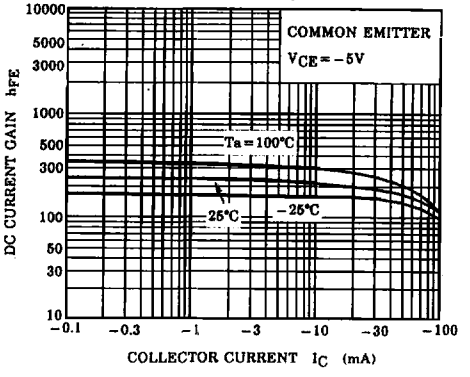

RN2112 I_C – $V_{I(OFF)}$
COLLECTOR CURRENT I_C (μA)
−3000
−1000
−500
−300
−100
−50
−30
Ta = 100°C
25°C
−25°C
COMMON EMITTER
V_{CE} = −5V
0 −0.2 −0.4 −0.6 −0.8 −1.0 −1.2 −1.4 −1.6
INPUT VOLTAGE $V_{I(OFF)}$ (V)


RN2113 I_C – $V_{I(ON)}$
COMMON EMITTER
V_{CE} = −0.2V
Ta = 100°C
25°C
−25°C
COLLECTOR CURRENT I_C (mA)
−50
−30
−10
−5
−3
−1
−0.5
−0.3
−0.1 −0.3 −1 −3 −10 −30 −100 −300 −1000 −3000
INPUT VOLTAGE $V_{I(ON)}$ (V)

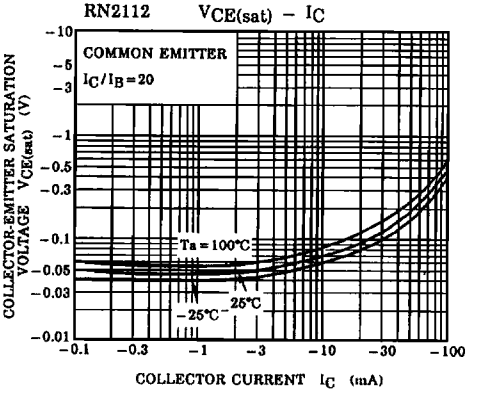

RN2113 I_C – $V_{I(OFF)}$
COLLECTOR CURRENT I_C (μA)
−3000
−1000
−500
−300
−100
−50
−30
Ta = 100°C
25°C
−25°C
COMMON EMITTER
V_{CE} = −5V
0 −0.2 −0.4 −0.6 −0.8 −1.0 −1.2 −1.4 −1.6
INPUT VOLTAGE $V_{I(OFF)}$ (V)

(RN2112)

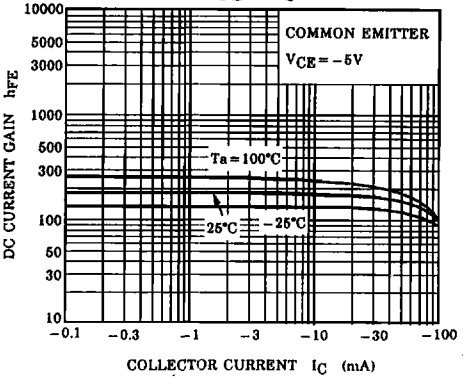
RN2112 h_{FE} – I_C



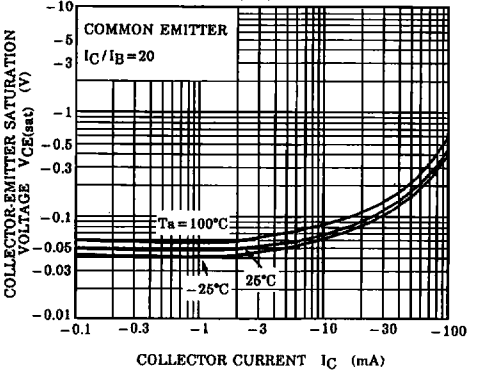
RN2112 $V_{CE(sat)}$ – I_C



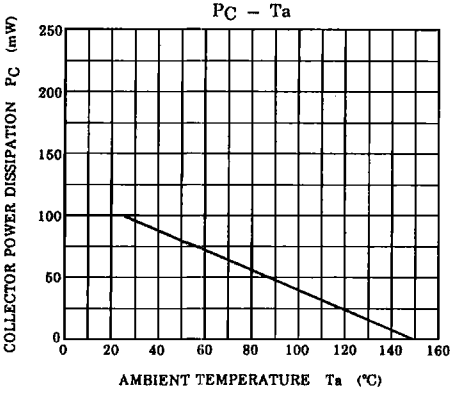
RN2113 h_{FE} – I_C



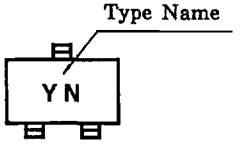
RN2113 $V_{CE(sat)}$ – I_C



P_C – Ta



(RN2112)

TYPE NAME	MARKING
RN2112	
RN2113