

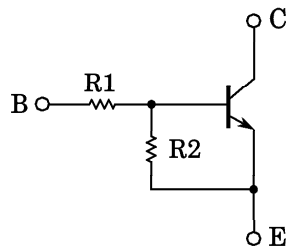
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN1101, RN1102, RN1103, RN1104, RN1105, RN1106

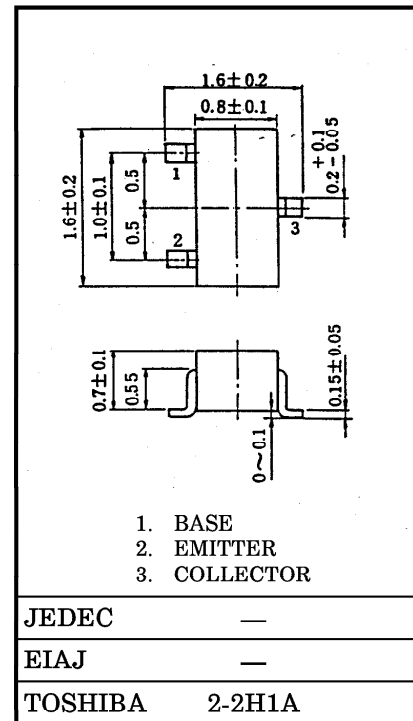
SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN2101~RN2106

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



TYPE NO.	R1 (kΩ)	R2 (kΩ)
RN1101	4.7	4.7
RN1102	10	10
RN1103	22	22
RN1104	47	47
RN1105	2.2	47
RN1106	4.7	47



Weight: 2.4mg

MAXIMUM RATINGS (Ta = 25°C)

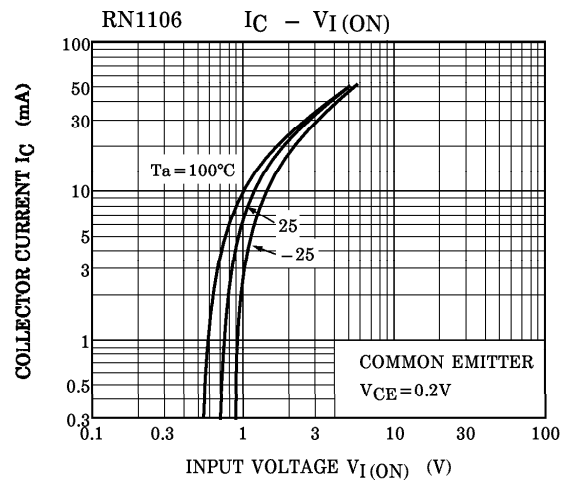
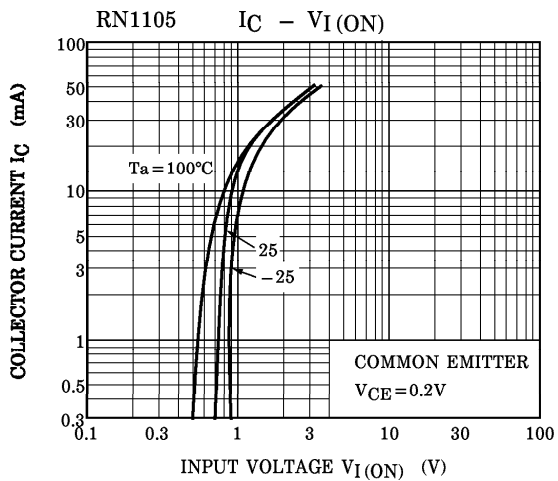
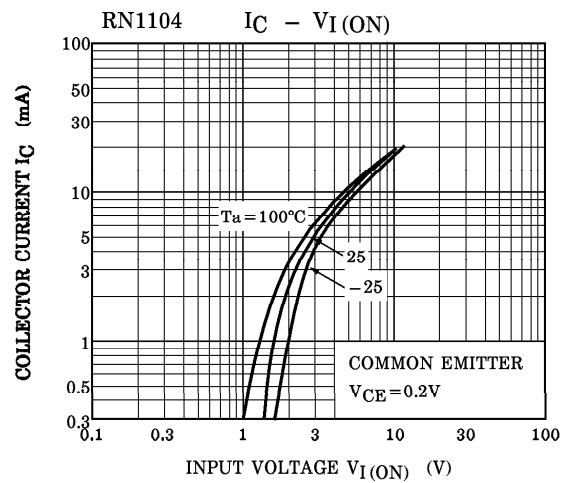
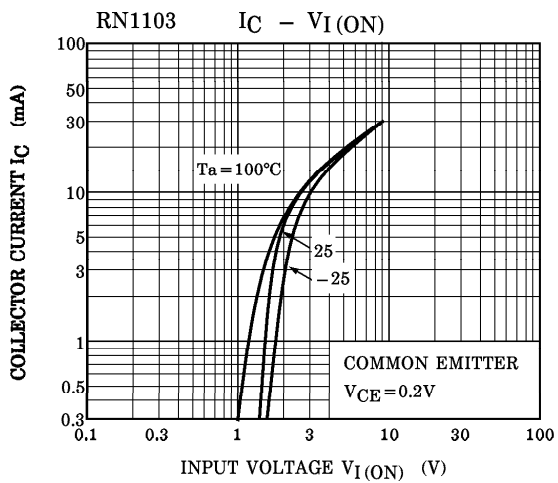
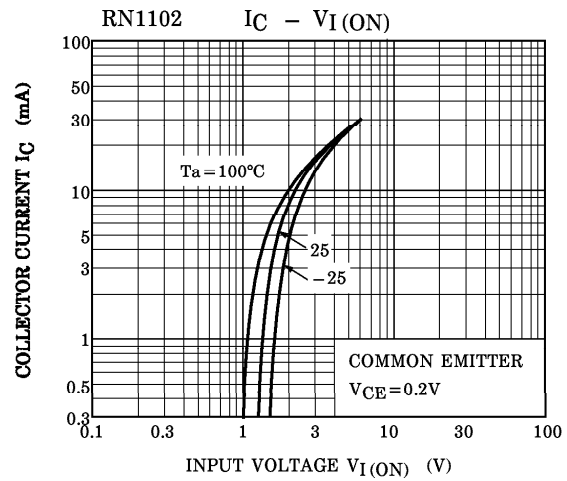
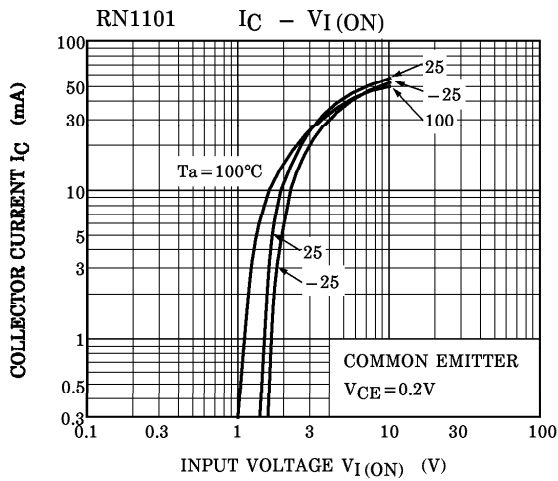
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN1101~1106	VCBO	50	V
Collector-Emitter Voltage		VCEO	50	V
Emitter-Base Voltage	RN1101~1104	VEBO	10	V
	RN1105, 1106		5	
Collector Current	RN1101~1106	IC	100	mA
Collector Power Dissipation		PC	100	mW
Junction Temperature		Tj	150	°C
Storage Temperature Range		Tstg	-55~150	°C

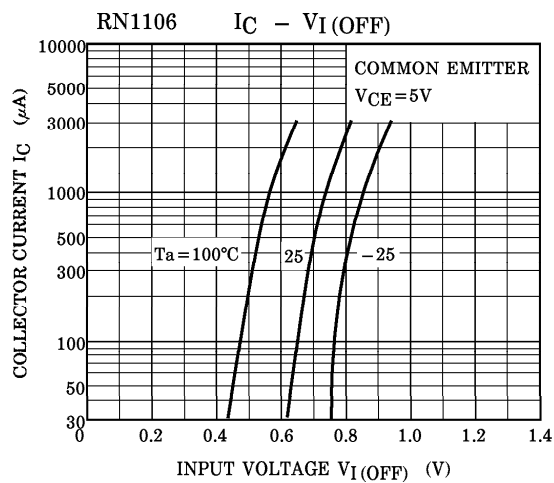
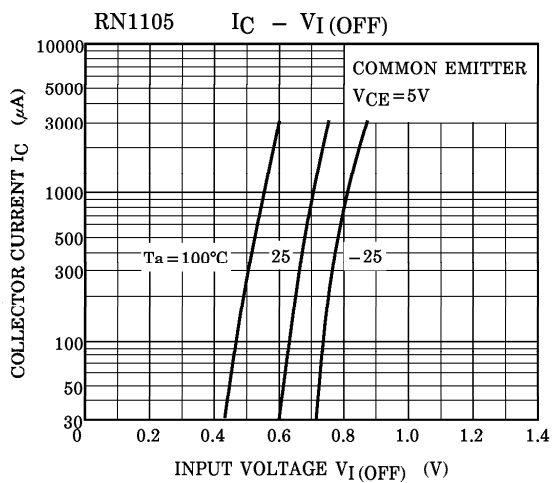
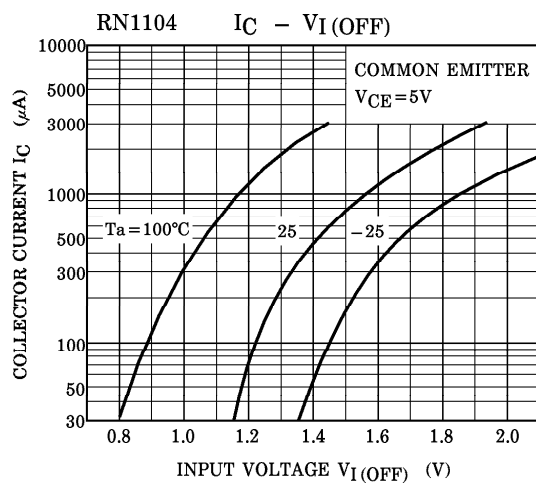
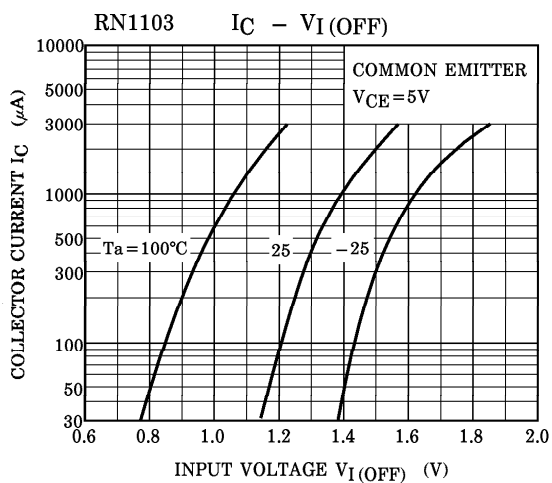
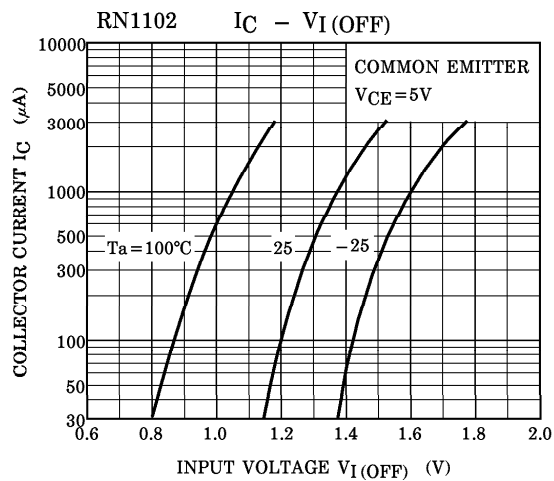
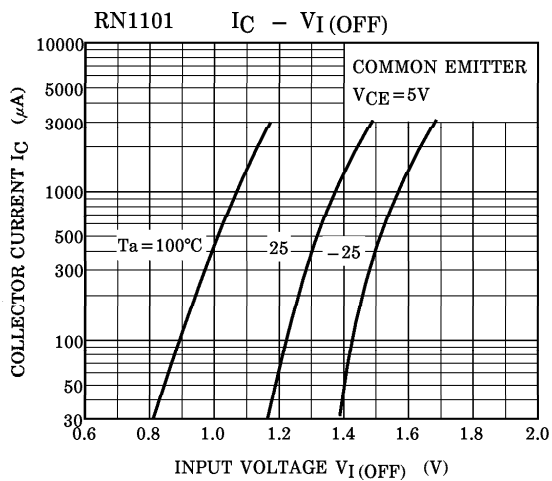
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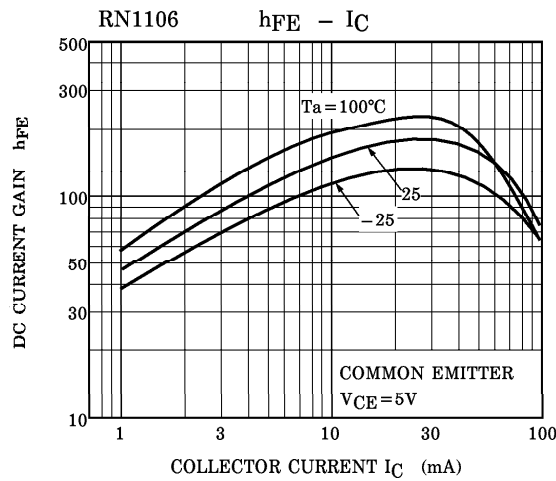
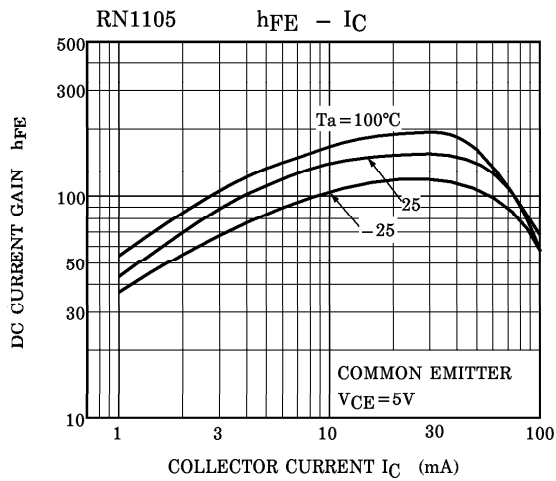
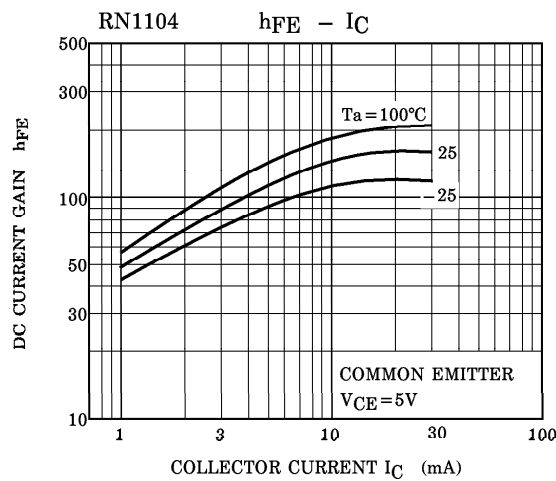
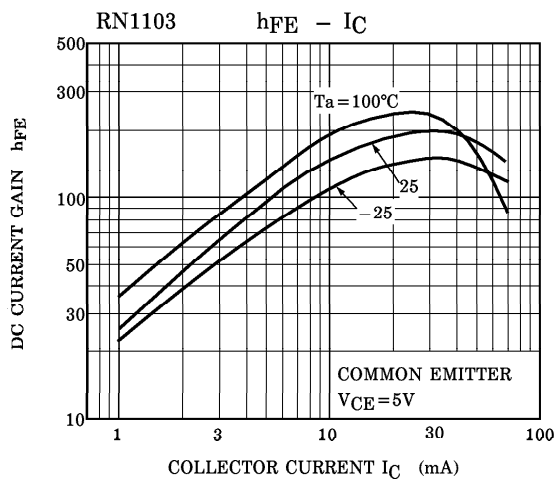
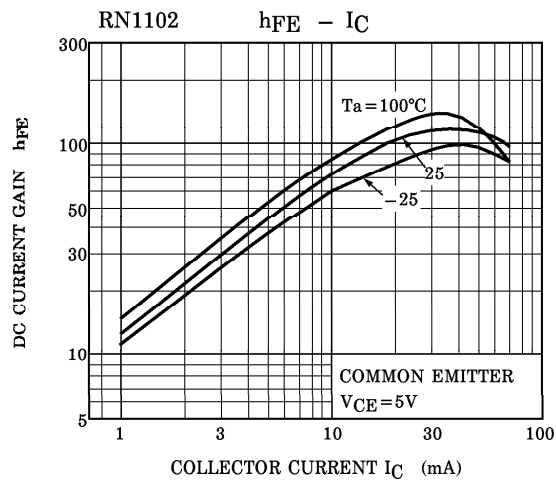
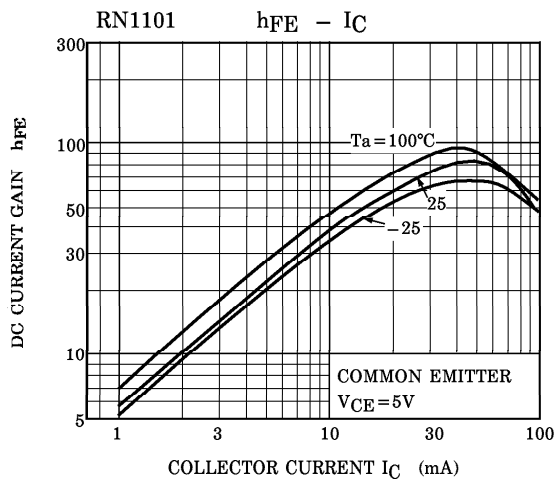
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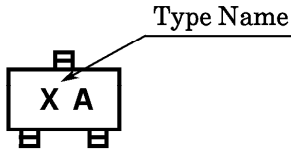
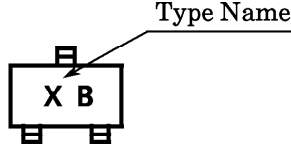
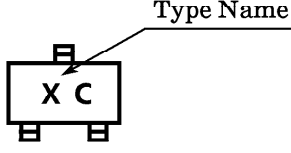
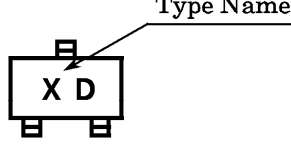
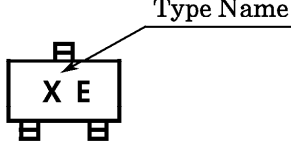
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN1101~1106	I_{CBO}	$V_{CB} = 50V, I_E = 0$	—	—	100	nA
		I_{CEO}	$V_{CE} = 50V, I_B = 0$	—	—	500	
Emitter Cut-off Current	RN1101	I_{EBO}	$V_{EB} = 10V, I_C = 0$	0.82	—	1.52	mA
	RN1102			0.38	—	0.71	
	RN1103			0.17	—	0.33	
	RN1104		0.082	—	0.15		
	RN1105		$V_{EB} = 5V, I_C = 0$	0.078	—	0.145	
	RN1106			0.074	—	0.138	
DC Current Gain	RN1101	h_{FE}	$V_{CE} = 5V, I_C = 10mA$	30	—	—	
	RN1102			50	—	—	
	RN1103			70	—	—	
	RN1104			80	—	—	
	RN1105			80	—	—	
	RN1106			80	—	—	
Collector-Emitter Saturation Voltage	RN1101~1106	$V_{CE(sat)}$	$I_C = 5mA, I_B = 0.25mA$	—	0.1	0.3	V
Input Voltage (ON)	RN1101	$V_{I(ON)}$	$V_{CE} = 0.2V, I_C = 5mA$	1.1	—	2.0	V
	RN1102			1.2	—	2.4	
	RN1103			1.3	—	3.0	
	RN1104			1.5	—	5.0	
	RN1105			0.6	—	1.1	
	RN1106			0.7	—	1.3	
Input Voltage (OFF)	RN1101~1104 RN1105, 1106	$V_{I(OFF)}$	$V_{CE} = 5V, I_C = 0.1mA$	1.0 0.5	—	1.5 0.8	V
Transition Frequency	RN1101~1106	f_T	$V_{CE} = 10V, I_C = 5mA$	—	250	—	MHz
Collector Output Capacitance	RN1101~1106	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	3	6	pF
Input Resistor	RN1101	R1		3.29	4.7	6.11	kΩ
	RN1102			7	10	13	
	RN1103			15.4	22	28.6	
	RN1104			32.9	47	61.1	
	RN1105			1.54	2.2	2.86	
	RN1106			3.29	4.7	6.11	
Resistor Ratio	RN1101~1104	R1 / R2		0.9	1.0	1.1	
	RN1105			0.0421	0.0468	0.0515	
	RN1106			0.09	0.1	0.11	







TYPE NAME	MARKING
RN1101	
RN1102	
RN1103	
RN1104	
RN1105	
RN1106	