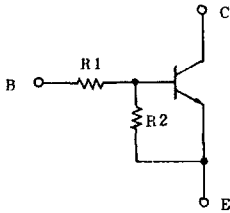


# RN1301, 1302, 1303 RN1304, 1305, 1306

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 RN2301~RN2306

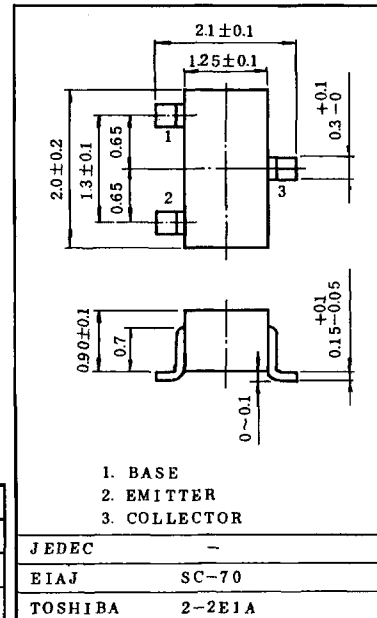
## EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1 (k $\Omega$ )	R2 (k $\Omega$ )
RN1301	4.7	4.7
RN1302	10	10
RN1303	22	22
RN1304	47	47
RN1305	2.2	47
RN1306	4.7	47

Unit in mm



Weight: 0.006g

## MAXIMUM RATINGS (Ta=25°C)

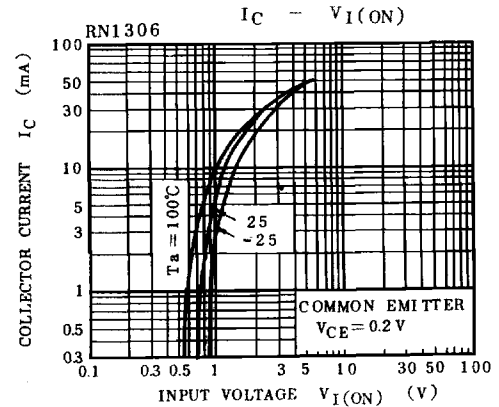
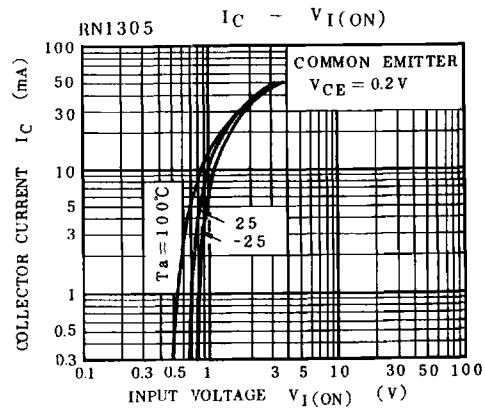
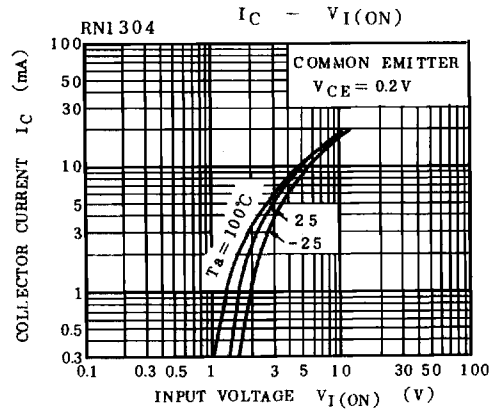
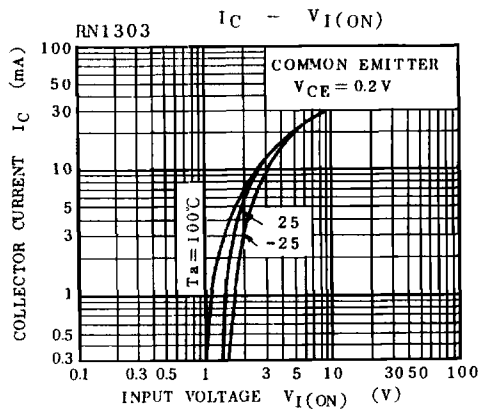
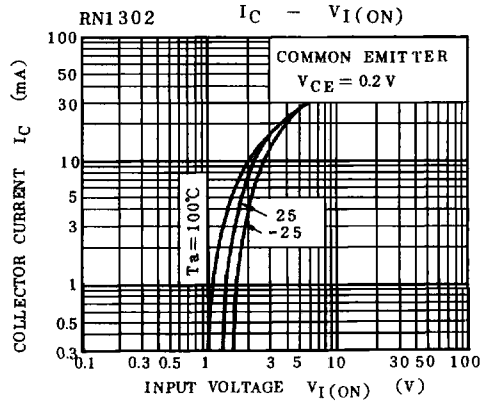
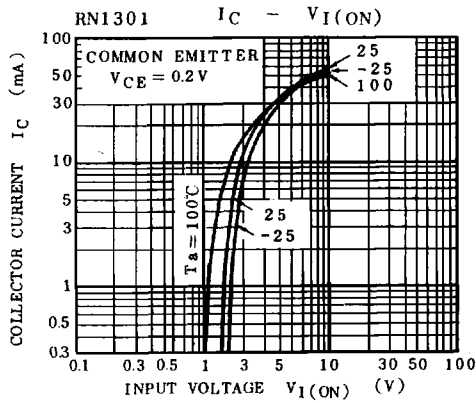
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EB0</sub>	10	V
		5	
Collector Current	I <sub>C</sub>	100	mA
Collector Power Dissipation	P <sub>C</sub>	100	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

**RN1301, 1302, 1303**  
**RN1304, 1305, 1306**

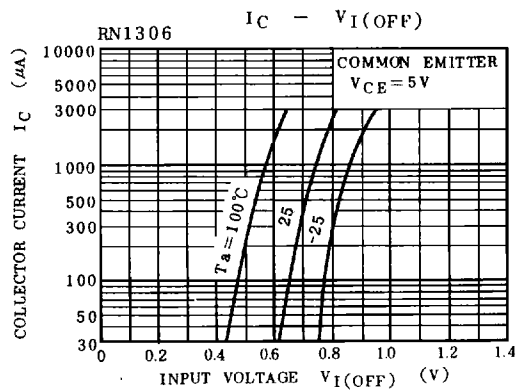
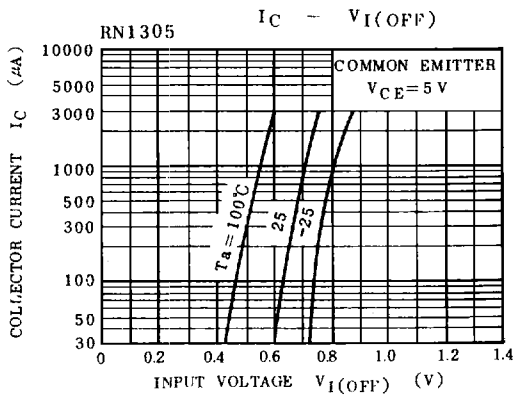
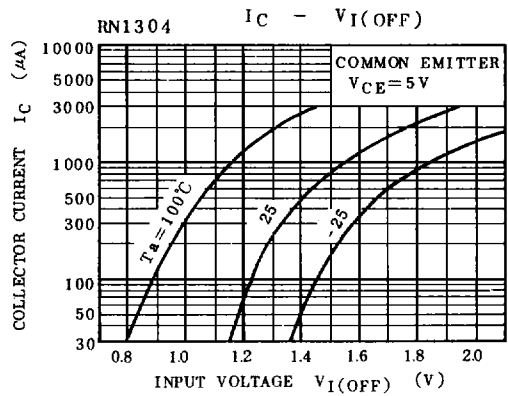
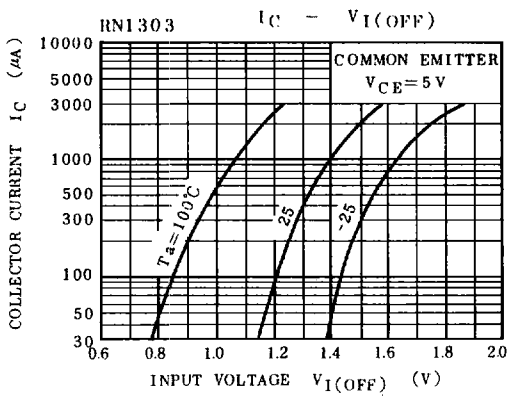
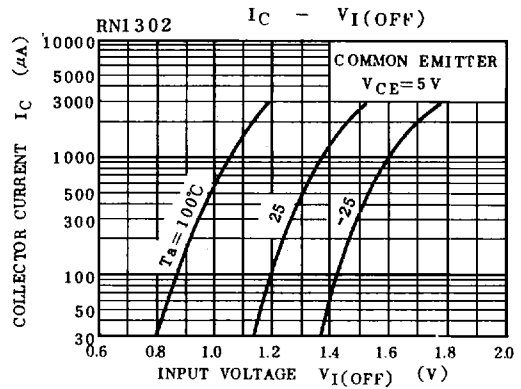
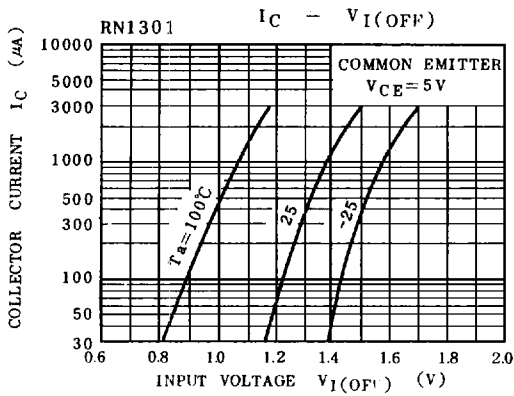
**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN1301~1306	I <sub>CB0</sub>	V <sub>CB</sub> =50V, I <sub>E</sub> =0	-	-	100	nA
		I <sub>CEO</sub>	V <sub>CE</sub> =50V, I <sub>B</sub> =0	-	-	500	
Emitter Cut-off Current	RN1301	I <sub>EBO</sub>	V <sub>EB</sub> =10V, I <sub>C</sub> =0	0.82	-	1.52	mA
	RN1302			0.38	-	0.71	
	RN1303			0.17	-	0.33	
	RN1304		0.082	-	0.15		
	RN1305		V <sub>EB</sub> =5V, I <sub>C</sub> =0	0.078	-	0.145	
	RN1306			0.074	-	0.138	
DC Current Gain	RN1301	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA	30	-	-	-
	RN1302			50	-	-	
	RN1303			70	-	-	
	RN1304			80	-	-	
	RN1305			80	-	-	
	RN1306			80	-	-	
Collector-Emitter Saturation Voltage	RN1301~1306	V <sub>CE(sat)</sub>	I <sub>C</sub> =5mA, I <sub>B</sub> =0.25mA	-	0.1	0.3	V
Input Voltage (ON)	RN1301	V <sub>I(ON)</sub>	V <sub>CE</sub> =0.2V, I <sub>C</sub> =5mA	1.1	-	2.0	V
	RN1302			1.2	-	2.4	
	RN1303			1.3	-	3.0	
	RN1304			1.5	-	5.0	
	RN1305			0.6	-	1.1	
	RN1306			0.7	-	1.3	
Input Voltage (OFF)	RN1301~1304 RN1305~1306	V <sub>I(OFF)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1mA	1.0 0.5	-	1.5 0.8	V
Transition Frequency	RN1301~1306	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =5mA	-	250	-	MHz
Collector Output Capacitance	RN1301~1306	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0 f=1MHz	-	3	6	pF
Input Resistor	RN1301	R <sub>I</sub>		3.29	4.7	6.11	kΩ
	RN1302			7	10	13	
	RN1303			15.4	22	28.6	
	RN1304			32.9	47	61.1	
	RN1305			1.54	2.2	2.86	
	RN1306			3.29	4.7	6.11	
Resistor Ratio	RN1301~1304	R <sub>1</sub> /R <sub>2</sub>		0.9	1.0	1.1	-
	RN1305			0.0421	0.0468	0.0515	
	RN1306			0.09	0.1	0.11	

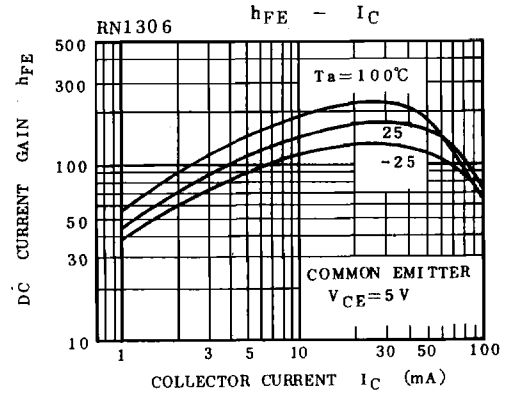
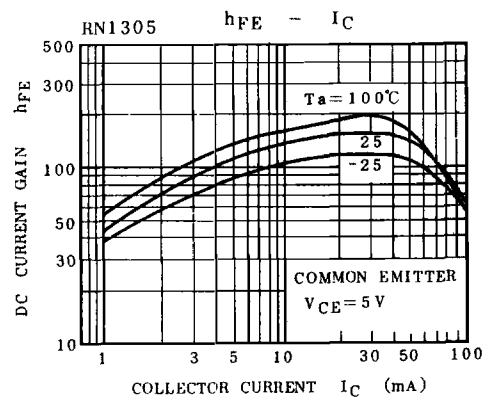
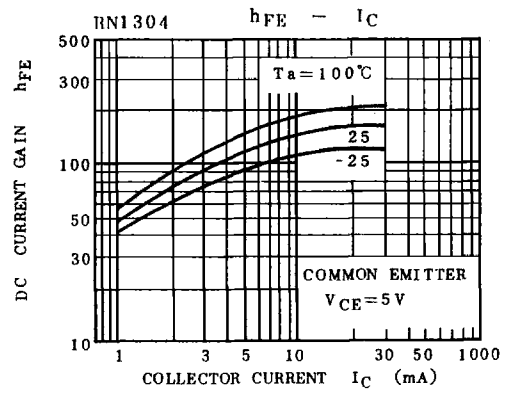
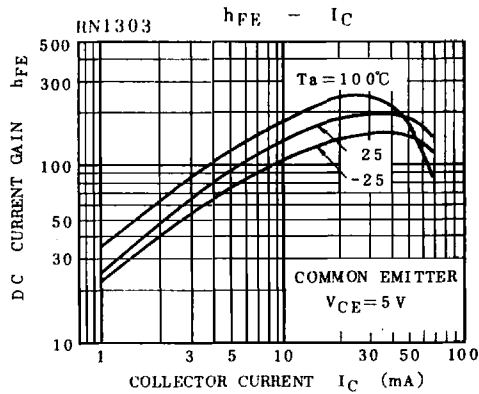
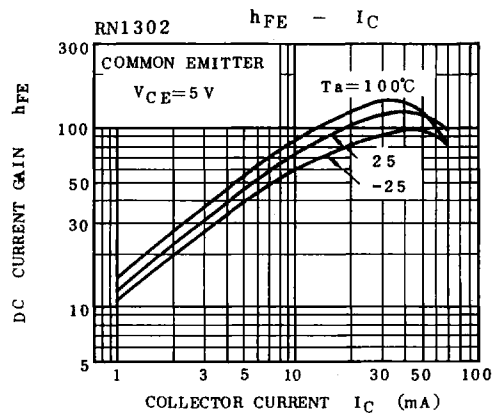
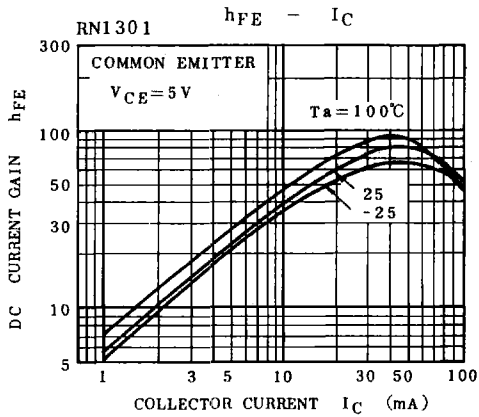
**RN1301, 1302, 1303**  
**RN1304, 1305, 1306**

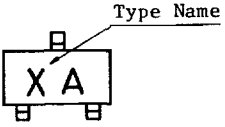
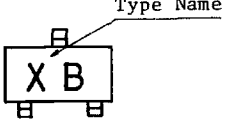
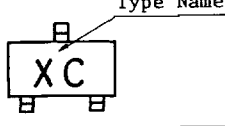
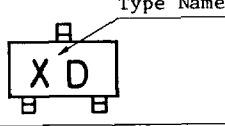
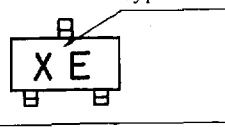


**RN1301, 1302, 1303**  
**RN1304, 1305, 1306**



**RN1301, 1302, 1303  
RN1304, 1305, 1306**



TYPE NAME	MARKING
RN1301	
RN1302	
RN1303	
RN1304	
RN1305	
RN1306	