

TOSHIBA TRANSISTOR SILOCON PNP EPITAXIAL TYPE (PCT PROCESS)

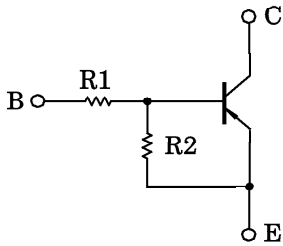
## RN2401, RN2402, RN2403 RN2404, RN2405, RN2406

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT AND DRIVER  
CIRCUIT APPLICATIONS

Unit in mm

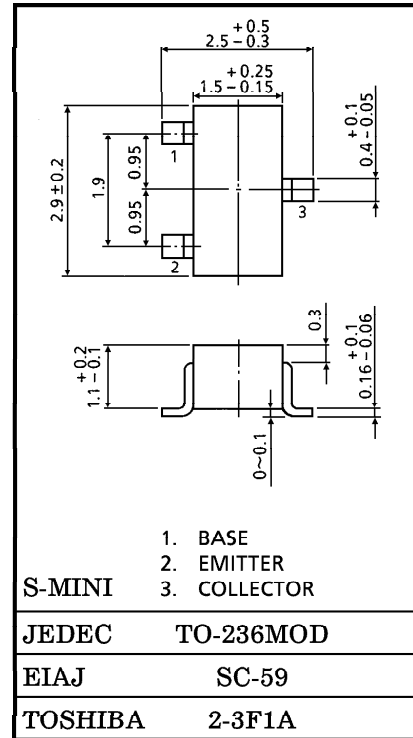
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN1401~1406

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE No.	R1 (kΩ)	R2 (kΩ)
RN2401	4.7	4.7
RN2402	10	10
RN2403	22	22
RN2404	47	47
RN2405	2.2	47
RN2406	4.7	47



Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

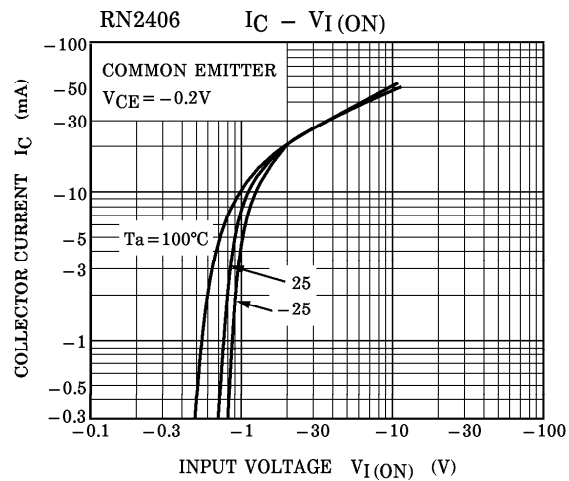
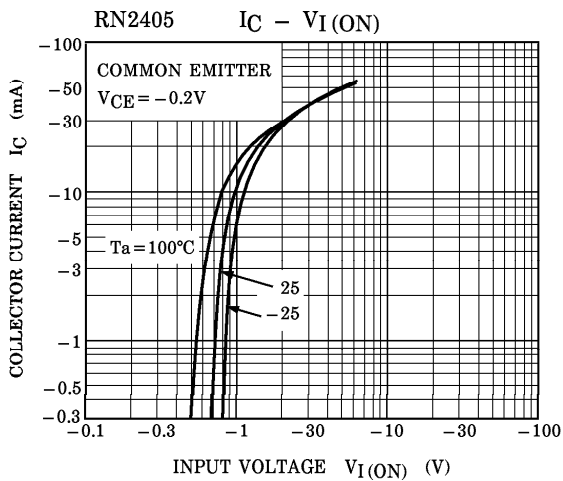
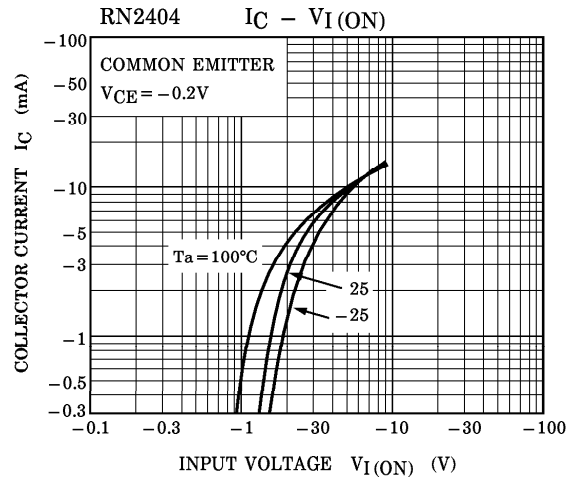
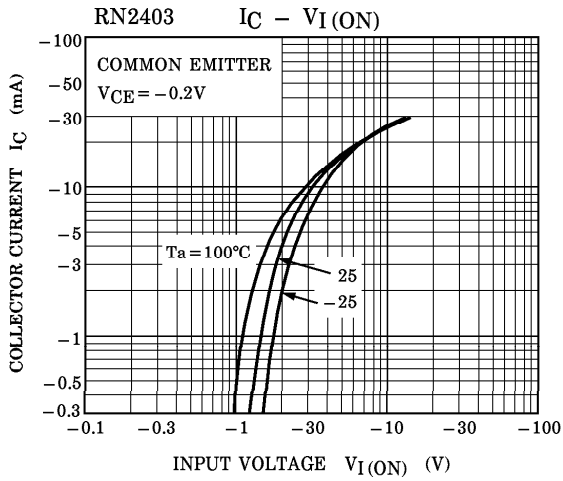
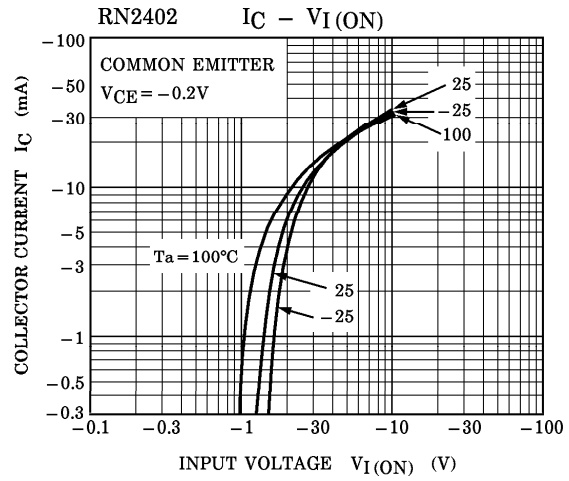
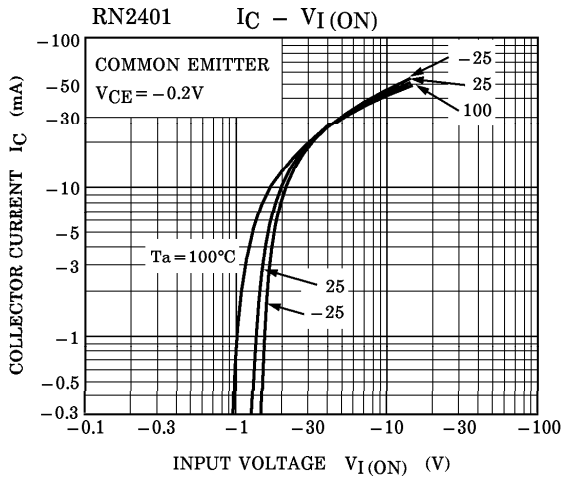
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	RN2401~2406	V <sub>CBO</sub>	-50 V
Collector-Emitter Voltage		V <sub>CEO</sub>	-50 V
Emitter-Base Voltage	RN2401~2404	V <sub>EBO</sub>	-10 V
	RN2405, 2406		-5 V
Collector Current	RN2401~2406	I <sub>C</sub>	-100 mA
Collector Power Dissipation		P <sub>C</sub>	200 mW
Junction Temperature		T <sub>j</sub>	150 °C
Storage Temperature Range		T <sub>stg</sub>	-55~150 °C

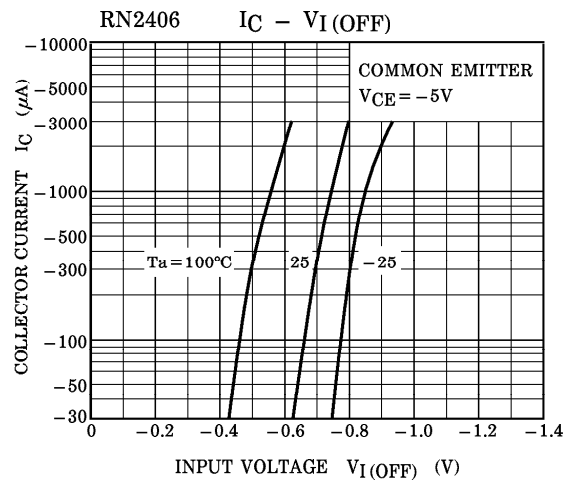
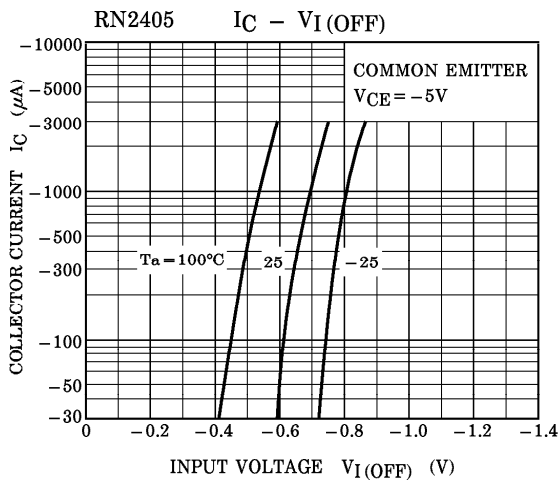
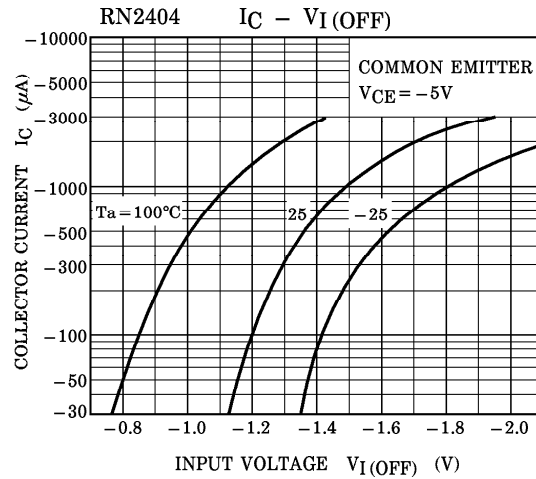
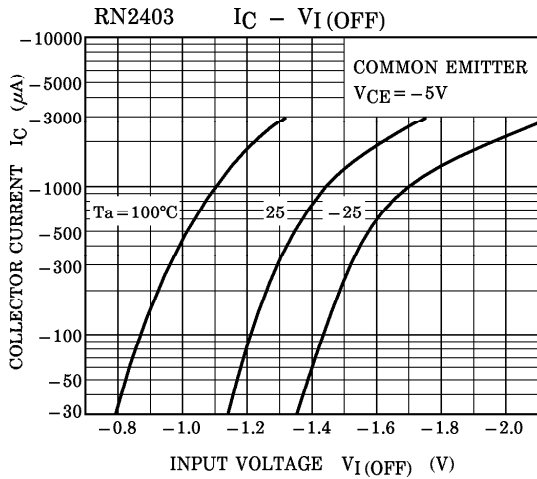
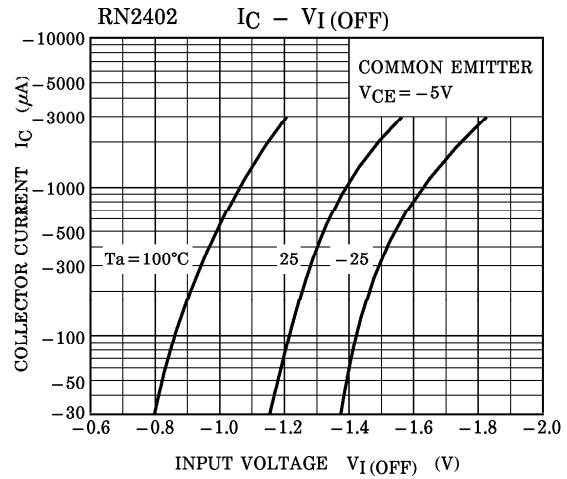
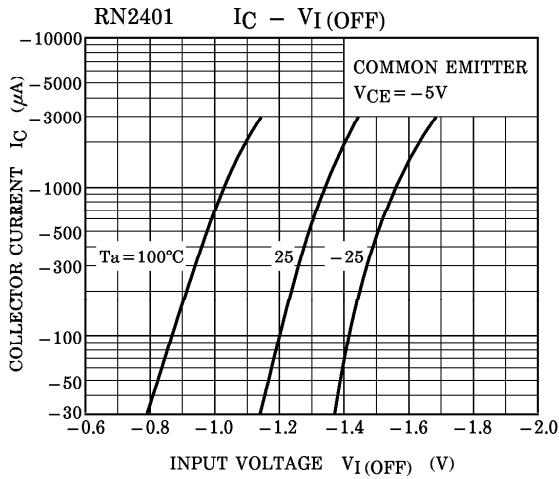
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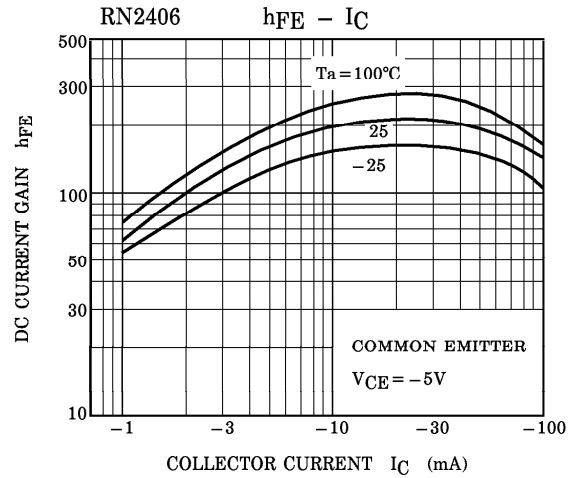
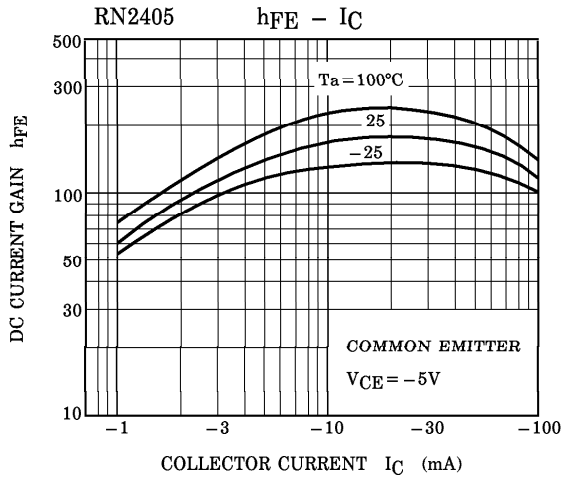
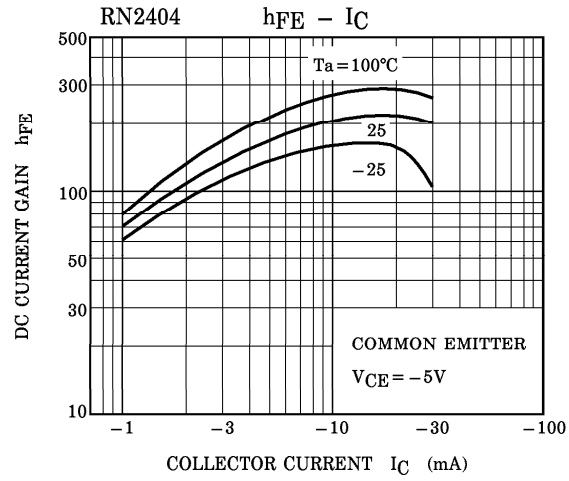
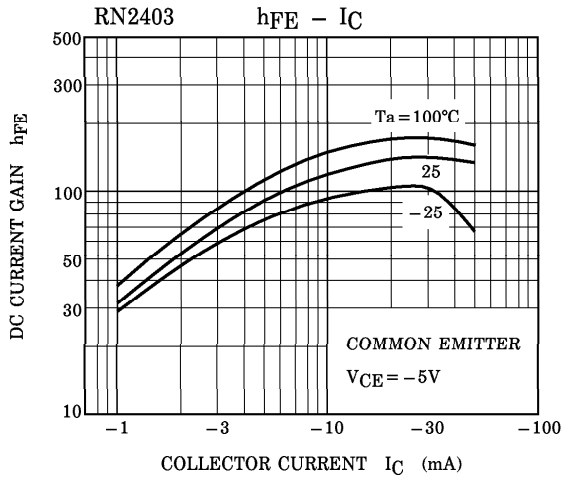
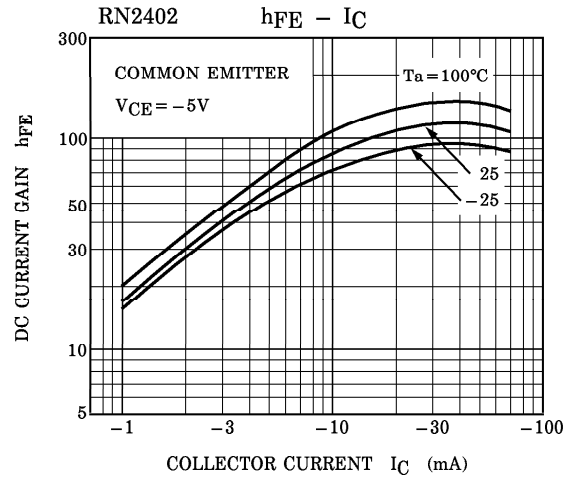
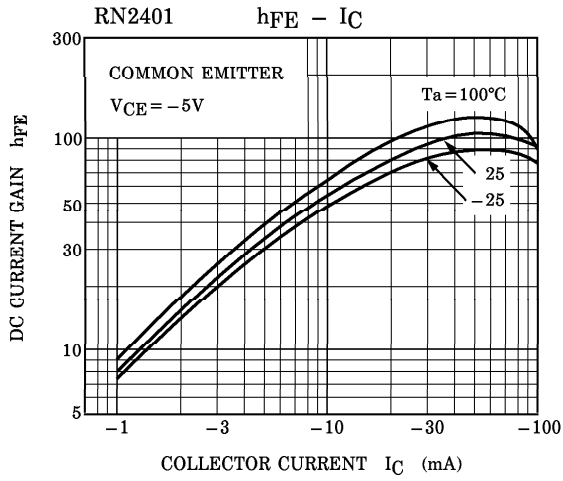
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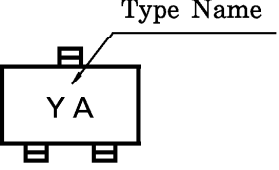
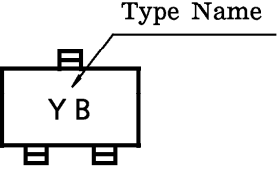
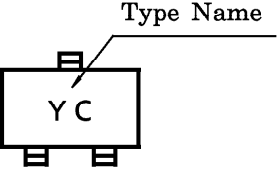
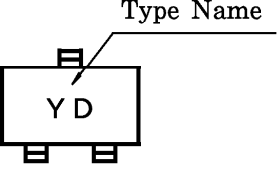
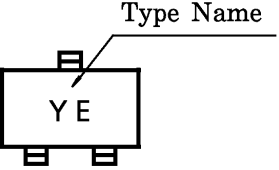
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN2401~2406	$I_{CBO}$	$V_{CB} = -50V, I_E = 0$	—	—	-100	nA
		$I_{CEO}$	$V_{CE} = -50V, I_B = 0$	—	—	-500	
Emitter Cut-off Current	RN2401	$I_{EBO}$	$V_{EB} = -10V, I_C = 0$	-0.82	—	-1.52	mA
	RN2402			-0.38	—	-0.71	
	RN2403			-0.17	—	-0.33	
	RN2404			-0.082	—	-0.15	
	RN2405		$V_{EB} = -5V, I_C = 0$	-0.078	—	-0.145	
	RN2406			-0.074	—	-0.138	
DC Current Gain	RN2401	$h_{FE}$	$V_{CE} = -5V, I_C = -10mA$	30	—	—	—
	RN2402			50	—	—	
	RN2403			70	—	—	
	RN2404			80	—	—	
	RN2405			80	—	—	
	RN2406			80	—	—	
Collector-Emitter Saturation Voltage	RN2401~2406	$V_{CE(sat)}$	$I_C = -5mA, I_B = -0.25mA$	—	-0.1	-0.3	V
Input Voltage (ON)	RN2401	$V_{I(ON)}$	$V_{CE} = -0.2V, I_C = -5mA$	-1.1	—	-2.0	V
	RN2402			-1.2	—	-2.4	
	RN2403			-1.3	—	-3.0	
	RN2404			-1.5	—	-5.0	
	RN2405			-0.6	—	-1.1	
	RN2406			-0.7	—	-1.3	
Input Voltage (OFF)	RN2401~2404 RN2405, 2406	$V_{I(OFF)}$	$V_{CE} = -5V, I_C = -0.1mA$	-1.0 -0.5	— —	-1.5 -0.8	V
Transition Frequency	RN2401~2406	$f_T$	$V_{CE} = -10V, I_C = -5mA$	—	200	—	MHz
Collector Output Capacitance	RN2401~2406	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	3	6	pF
Input Resistor	RN2401	R1	—	3.29	4.7	6.11	k $\Omega$
	RN2402			7	10	13	
	RN2403			15.4	22	28.6	
	RN2404			32.9	47	61.1	
	RN2405			1.54	2.2	2.86	
	RN2406			3.29	4.7	6.11	
Resistor Ratio	RN2401~2404	R1 / R2	—	0.9	1.0	1.1	—
	RN2405			0.0421	0.0468	0.0515	
	RN2406			0.09	0.1	0.11	







TYPE NAME	MARKING
RN2401	
RN2402	
RN2403	
RN2404	
RN2405	
RN2406	