

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

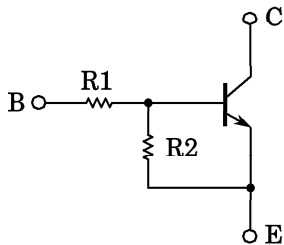
RN1701, RN1702, RN1703, RN1704, RN1705, RN1706

Unit in mm

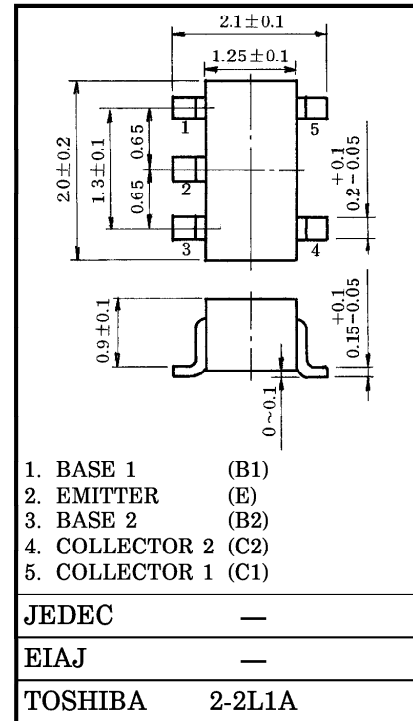
SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

- Including Two Devices in USV (Ultra Super Mini Type with 5 leads)
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN2701~RN2706

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES

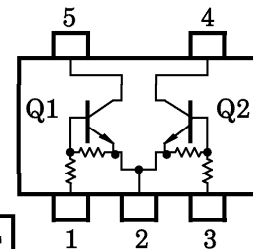


TYPE No.	R1 (kΩ)	R2 (kΩ)
RN1701	4.7	4.7
RN1702	10	10
RN1703	22	22
RN1704	47	47
RN1705	2.2	47
RN1706	4.7	47



Weight : 6.2mg

EQUIVALENT CIRCUIT (TOP VIEW)



MAXIMUM RATINGS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN1701~1706	VCBO	50	V
Collector-Emitter Voltage		VCEO	50	V
Emitter-Base Voltage	RN1701~1704	VEBO	10	V
	RN1705, 1706		5	
Collector Current	RN1701~1706	IC	100	mA
Collector Power Dissipation		PC *	200	mW
Junction Temperature		Tj	150	°C
Storage Temperature Range		Tstg	-55~150	°C

* : Total Rating

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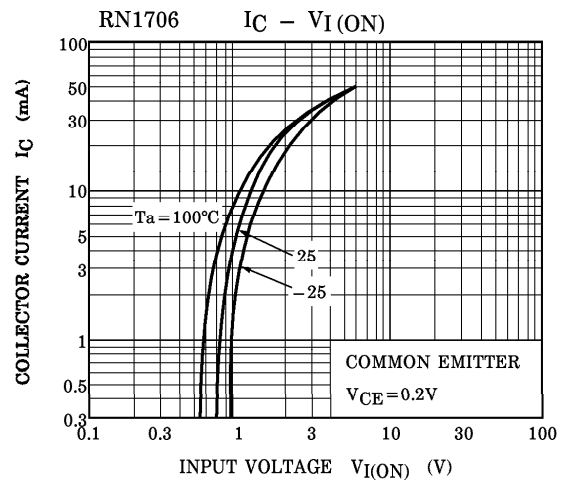
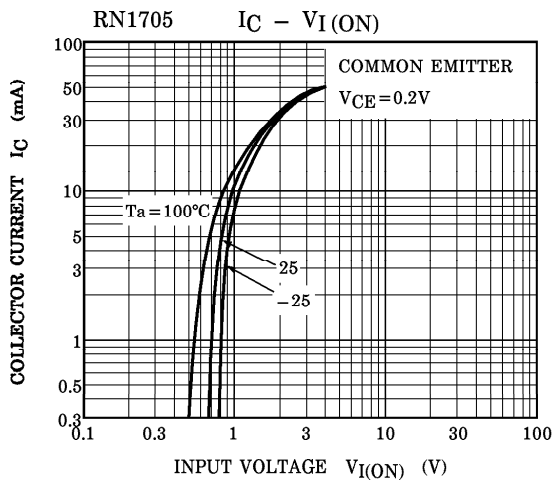
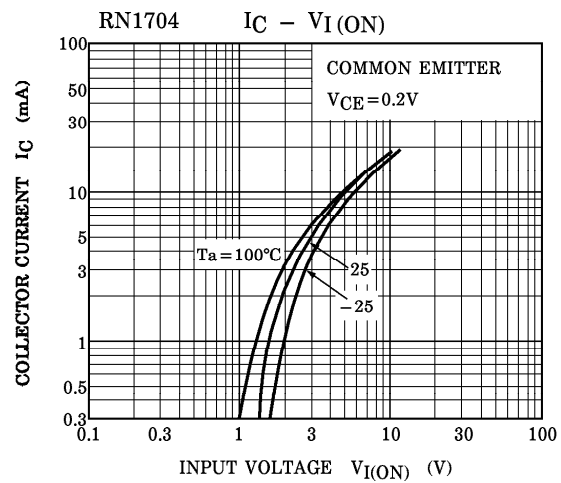
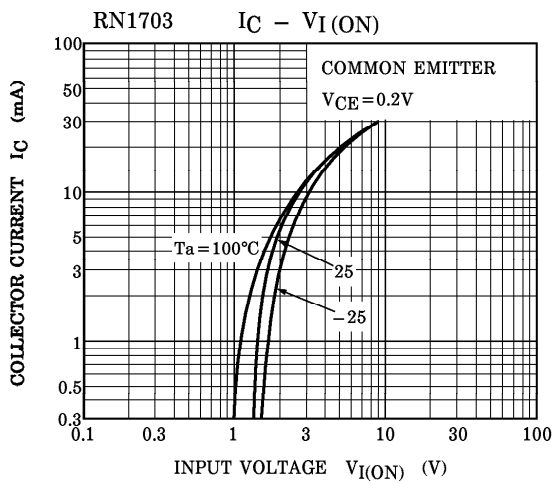
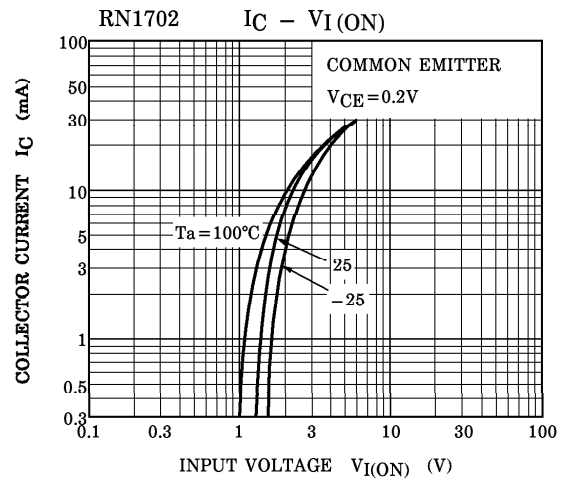
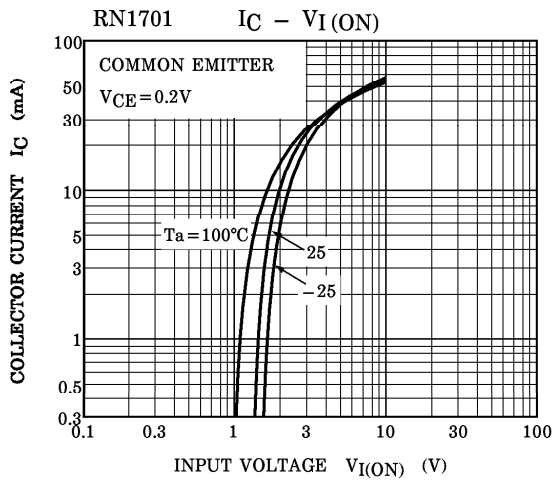
ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN1701~1706	I_{CBO}	$V_{CB} = 50V, I_E = 0$	—	—	100	nA
		I_{CEO}	$V_{CE} = 50V, I_B = 0$	—	—	500	
Emitter Cut-off Current	RN1701	I_{EBO}	$V_{EB} = 10V, I_C = 0$	0.82	—	1.52	mA
	RN1702			0.38	—	0.71	
	RN1703			0.17	—	0.33	
	RN1704		0.082	—	0.15		
	RN1705		$V_{EB} = 5V, I_C = 0$	0.078	—	0.145	
	RN1706			0.074	—	0.138	
DC Current Gain	RN1701	h_{FE}	$V_{CE} = 5V, I_C = 10mA$	30	—	—	
	RN1702			50	—	—	
	RN1703			70	—	—	
	RN1704			80	—	—	
	RN1705			80	—	—	
	RN1706			80	—	—	
Collector-Emitter Saturation Voltage	RN1701~1706	$V_{CE(sat)}$	$I_C = 5mA, I_B = 0.25mA$	—	0.1	0.3	V
Input Voltage (ON)	RN1701	$V_I(ON)$	$V_{CE} = 0.2V, I_C = 5mA$	1.1	—	2.0	V
	RN1702			1.2	—	2.4	
	RN1703			1.3	—	3.0	
	RN1704			1.5	—	5.0	
	RN1705			0.6	—	1.1	
	RN1706			0.7	—	1.3	
Input Voltage (OFF)	RN1701~1704	$V_I(OFF)$	$V_{CE} = 5V, I_C = 0.1mA$	1.0	—	1.5	V
	RN1705, 1706			0.5	—	0.8	
Transition Frequency	RN1701~1706	f_T	$V_{CE} = 10V, I_C = 5mA$	—	250	—	MHz
Collector Output Capacitance	RN1701~1706	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	3	6	pF
Input Resistor	RN1701	R1		3.29	4.7	6.11	kΩ
	RN1702			7	10	13	
	RN1703			15.4	22	28.6	
	RN1704			32.9	47	61.1	
	RN1705			1.54	2.2	2.86	
	RN1706			3.29	4.7	6.11	
Resistor Ratio	RN1701~1704	R1 / R2		0.9	1.0	1.1	
	RN1705			0.0421	0.0468	0.0515	
	RN1706			0.09	0.1	0.11	

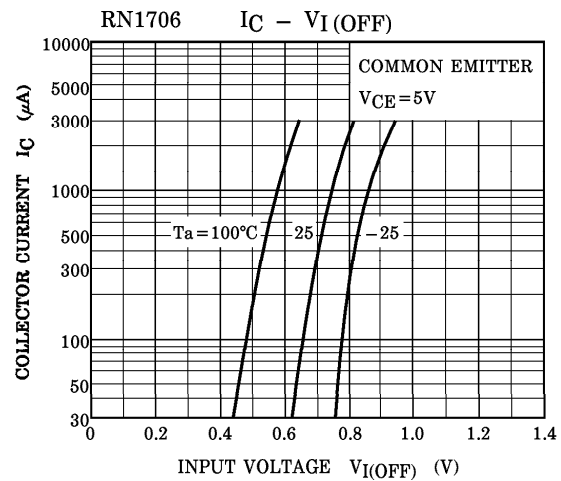
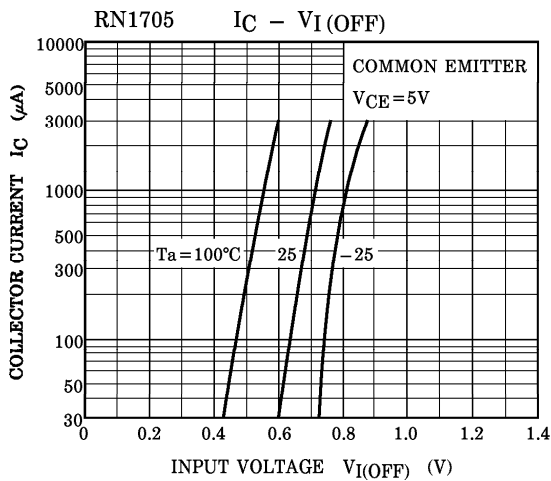
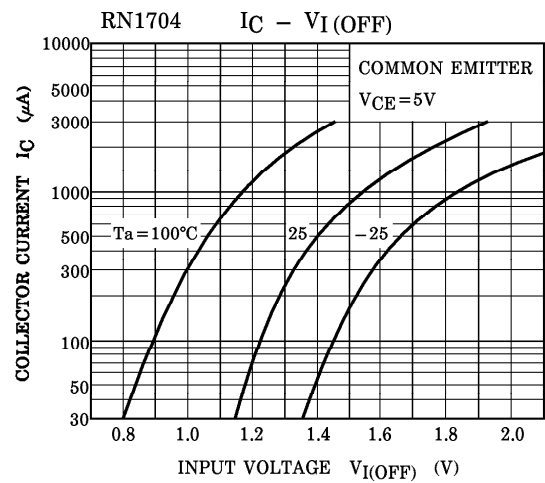
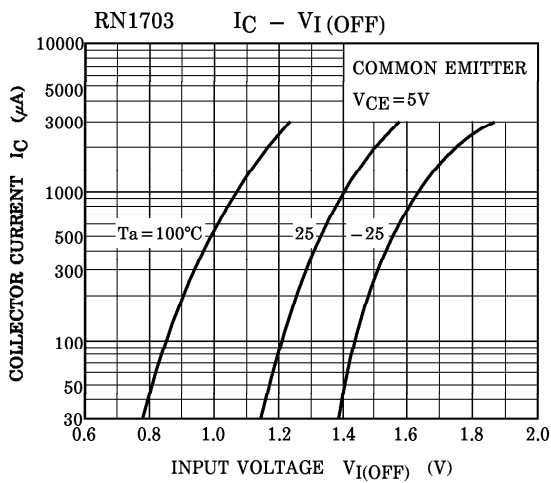
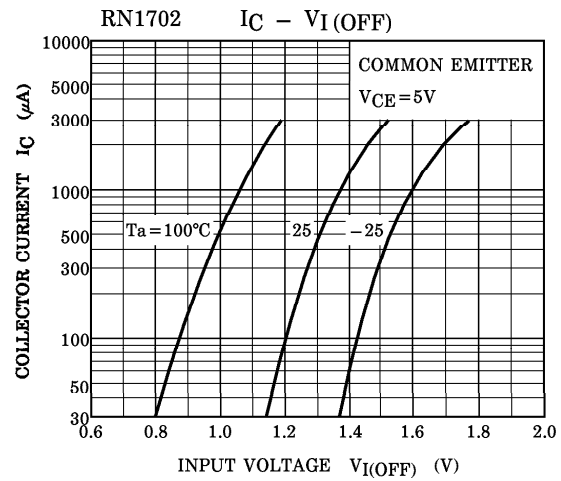
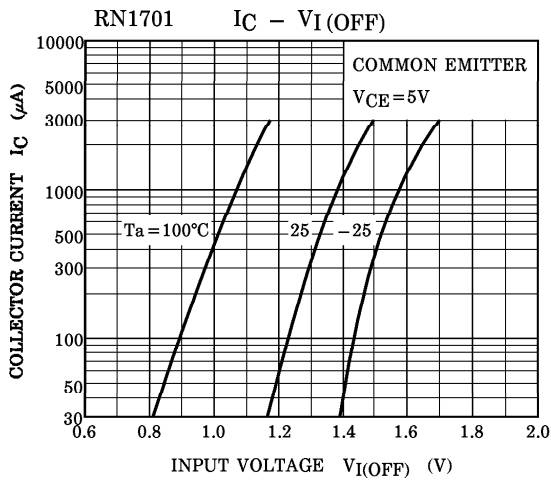
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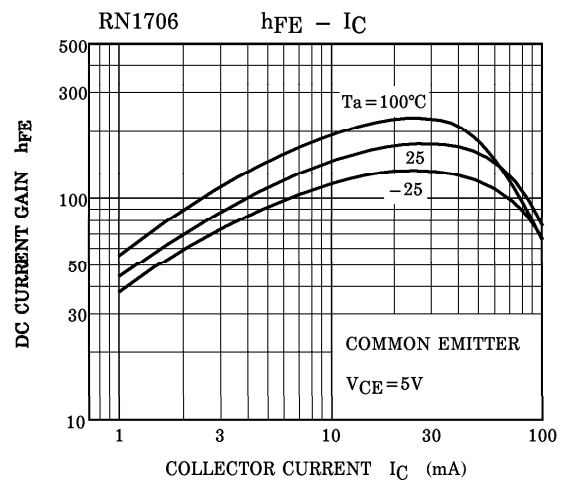
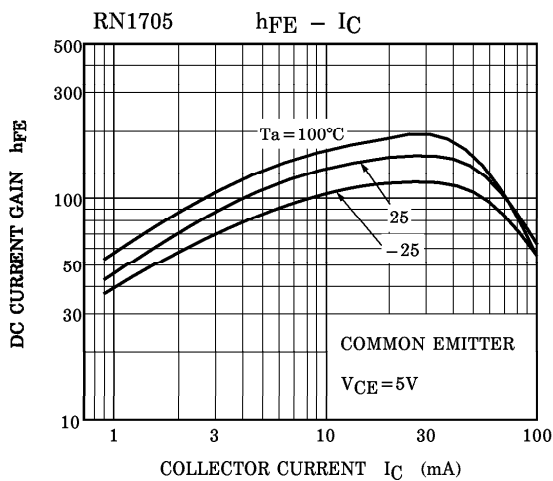
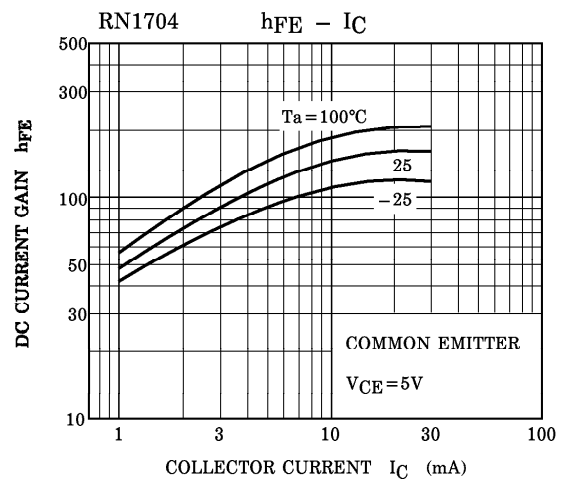
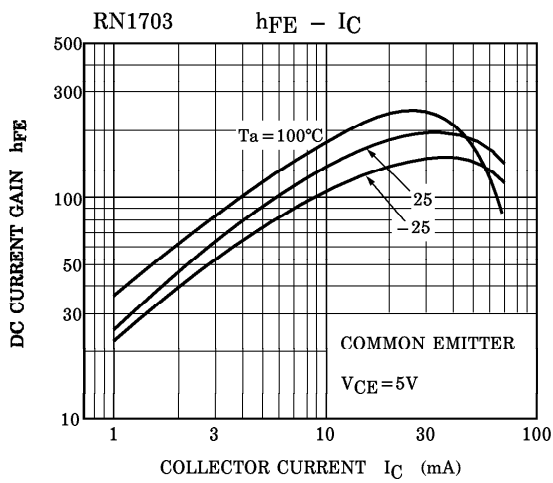
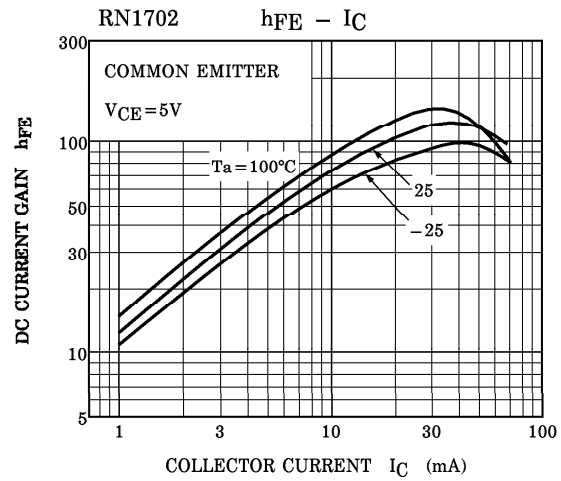
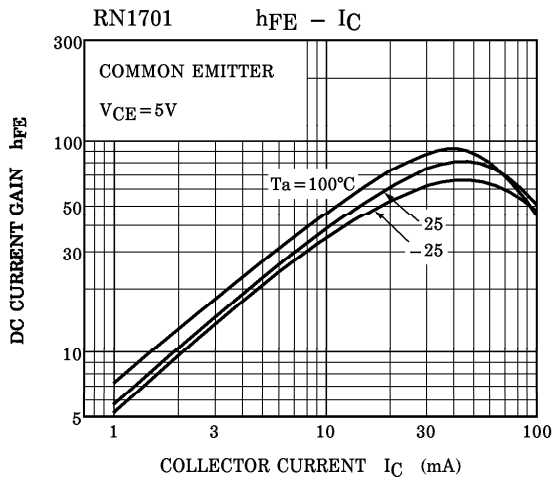
(Q1, Q2 COMMON)

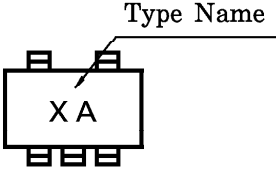
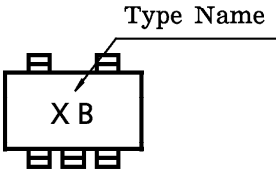
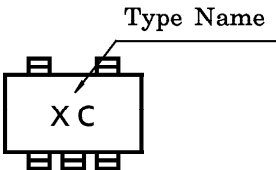
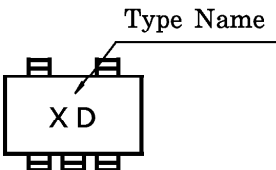
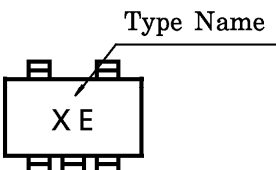


(Q1, Q2 COMMON)



(Q1, Q2 COMMON)



TYPE NAME	MARKING
RN1701	
RN1702	
RN1703	
RN1704	
RN1705	
RN1706	