RN1701, 1702, 1703
RN1704, 1705, 1706

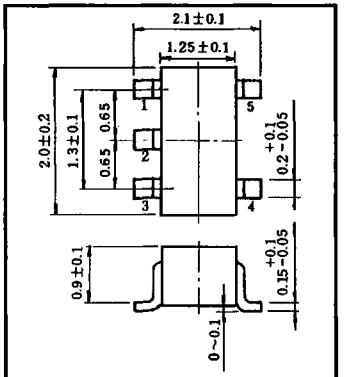
(RN1701)

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

Unit in mm

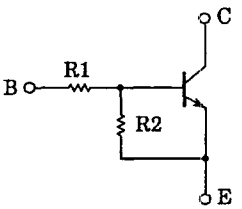


1. BASE 1 (B1)
2. EMITTER (E)
3. BASE 2 (B2)
4. COLLECTOR 2 (C2)
5. COLLECTOR 1 (C1)

JEDEC	—
EIAJ	—
TOSHIBA	2-2L1A

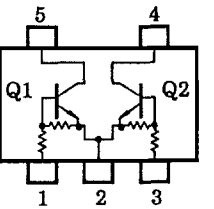
Weight : 6.2mg

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

EQIVALENT CIRCUIT (TOP VIEW)



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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN1701~1706	V_{CBO}	50	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage	RN1701~1704	V_{EBO}	10	V
	RN1705, 1706		5	
Collector Current	RN1701~1706	I_C	100	mA
Collector Power Dissipation		P_C *	200	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

* : Total Rating

(RN1701)

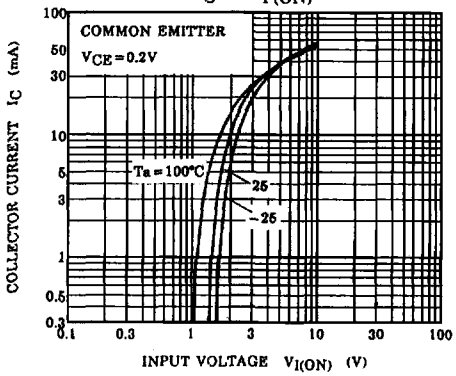
ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

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	

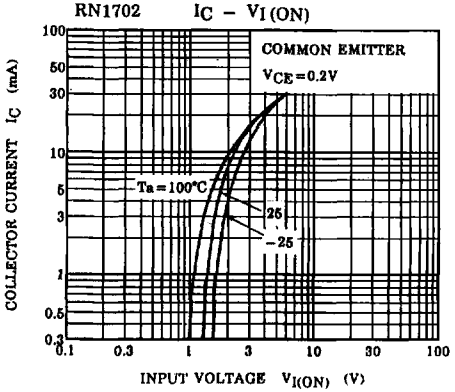
(RN1701)

(Q1, Q2 COMMON)

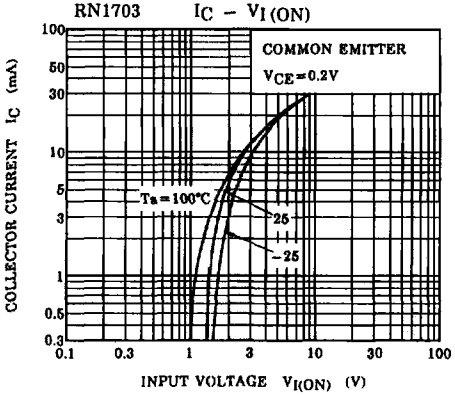
RN1701 $I_C - V_{I(ON)}$



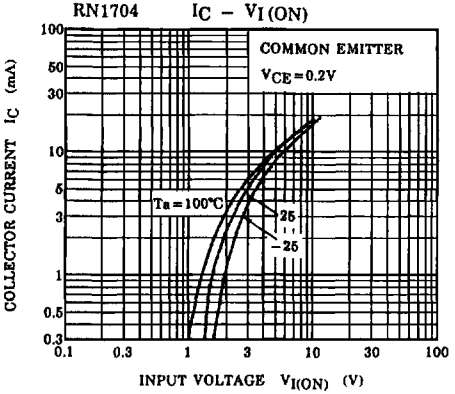
RN1702 $I_C - V_{I(ON)}$



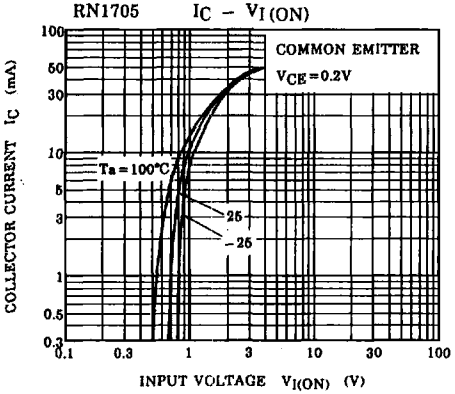
RN1703 $I_C - V_{I(ON)}$



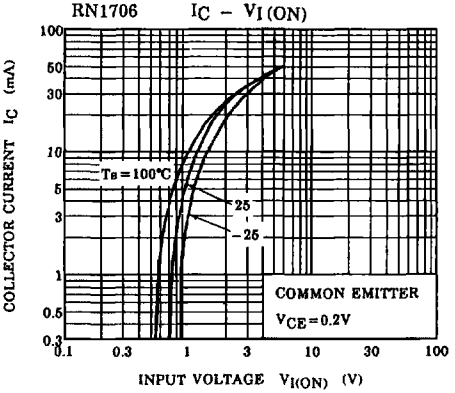
RN1704 $I_C - V_{I(ON)}$



RN1705 $I_C - V_{I(ON)}$



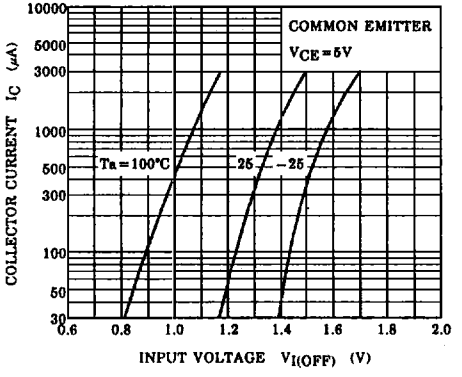
RN1706 $I_C - V_{I(ON)}$



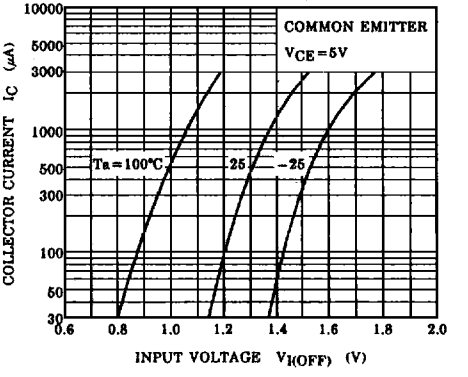
(RN1701)

(Q1, Q2 COMMON)

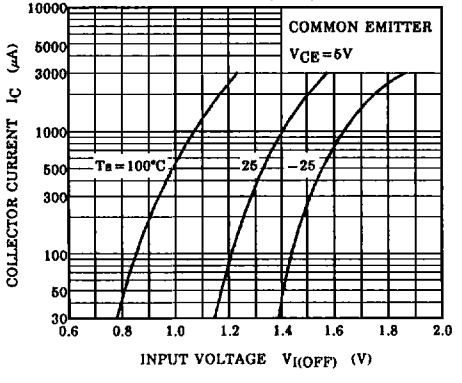
RN1701 $I_C - V_{I(OFF)}$



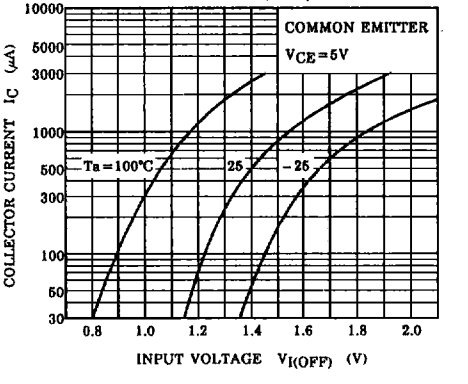
RN1702 $I_C - V_{I(OFF)}$



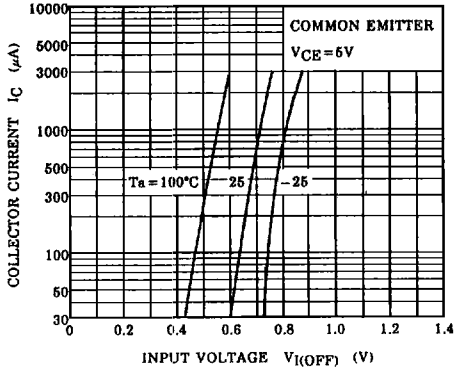
RN1703 $I_C - V_{I(OFF)}$



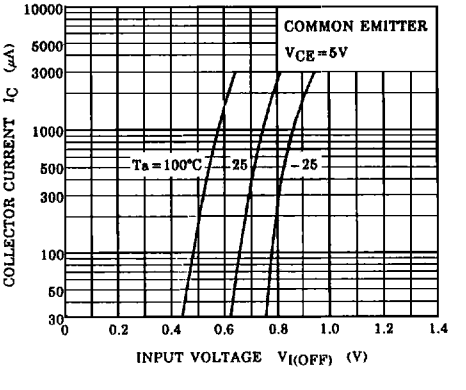
RN1704 $I_C - V_{I(OFF)}$



RN1705 $I_C - V_{I(OFF)}$



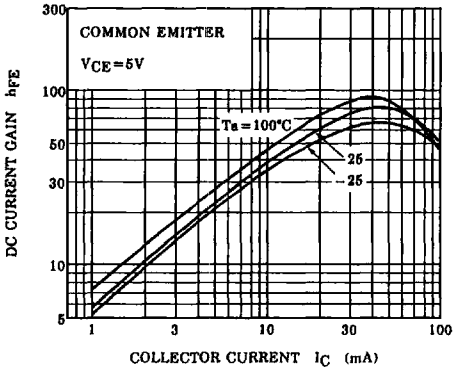
RN1706 $I_C - V_{I(OFF)}$



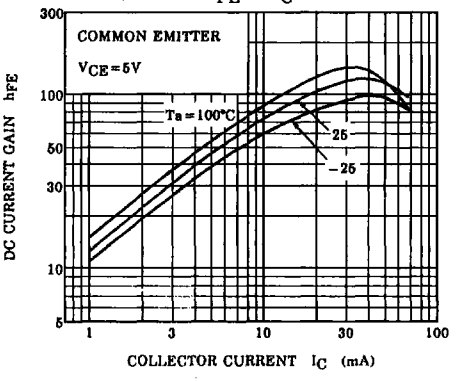
(RN1701)

(Q1, Q2 COMMON)

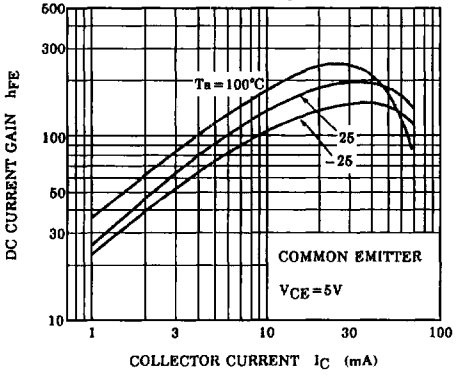
RN1701 h_{FE} – I_C



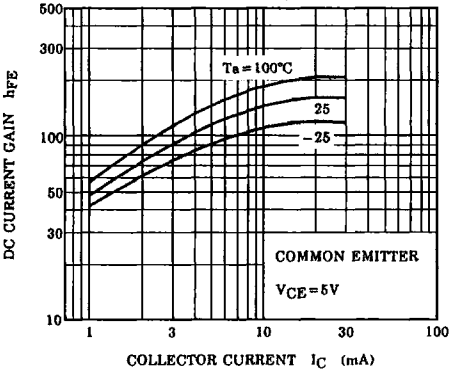
RN1702 h_{FE} – I_C



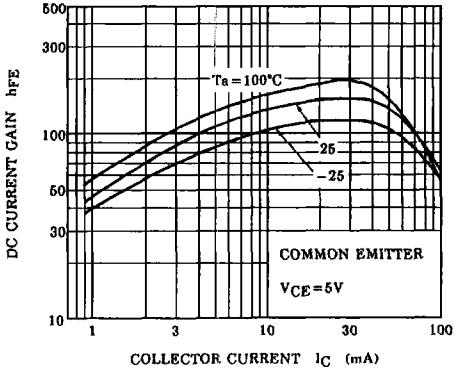
RN1703 h_{FE} – I_C



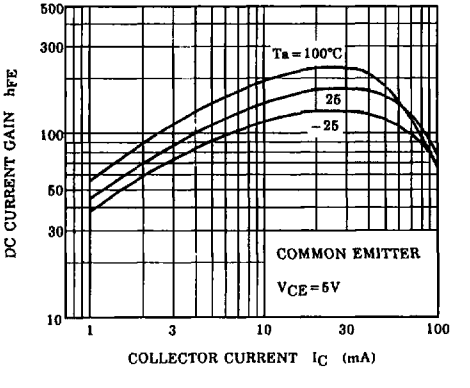
RN1704 h_{FE} – I_C



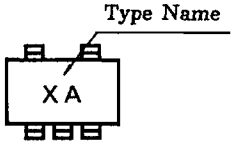
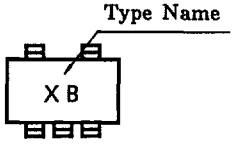
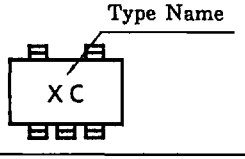
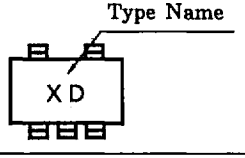
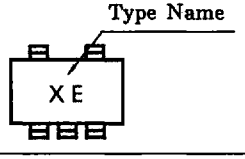
RN1705 h_{FE} – I_C



RN1706 h_{FE} – I_C



(RN1701)

TYPE NAME	MARKING
RN1701	
RN1702	
RN1703	
RN1704	
RN1705	
RN1706