

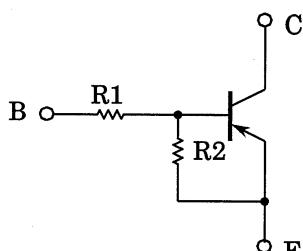
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

**RN2001, RN2002, RN2003  
RN2004, RN2005, RN2006**

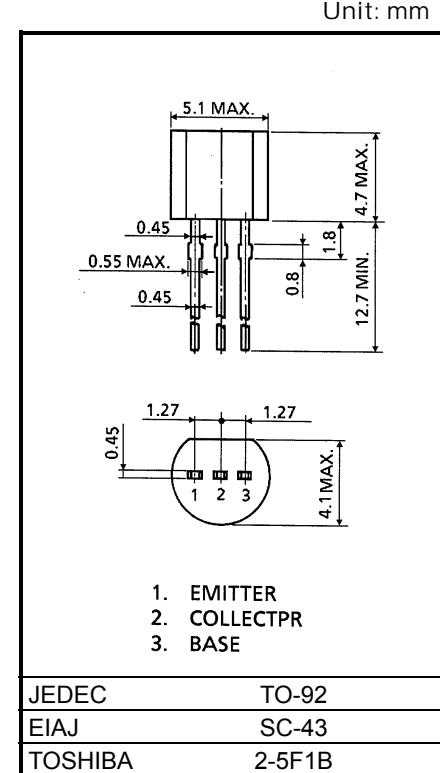
Switching, Inverter Circuit, Interface Circuit  
And Driver Circuit Applications

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN1001~RN1006

**Equivalent Circuit and Bias Resistor Values**



Type No.	R1 (kΩ)	R2 (kΩ)
RN2001	4.7	4.7
RN2002	10	10
RN2003	22	22
RN2004	47	47
RN2005	2.2	47
RN2006	4.7	47



JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1B

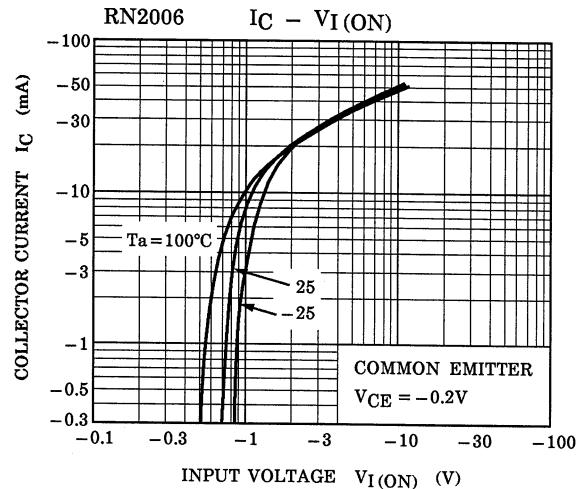
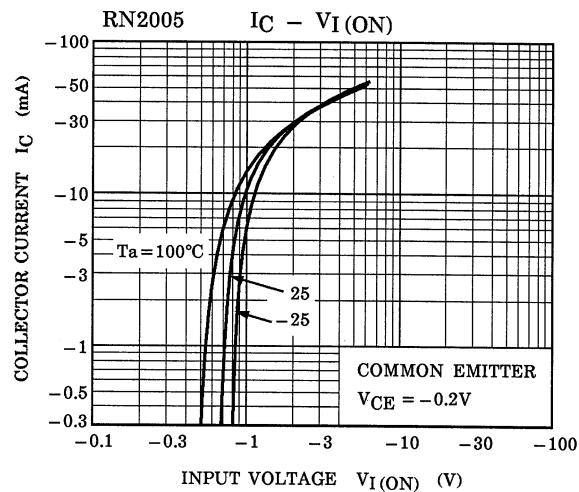
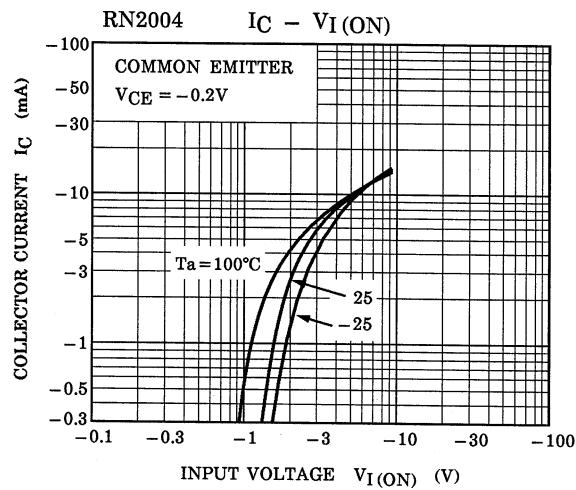
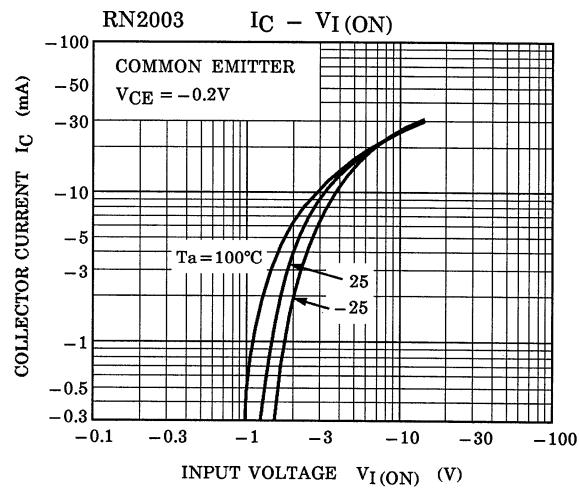
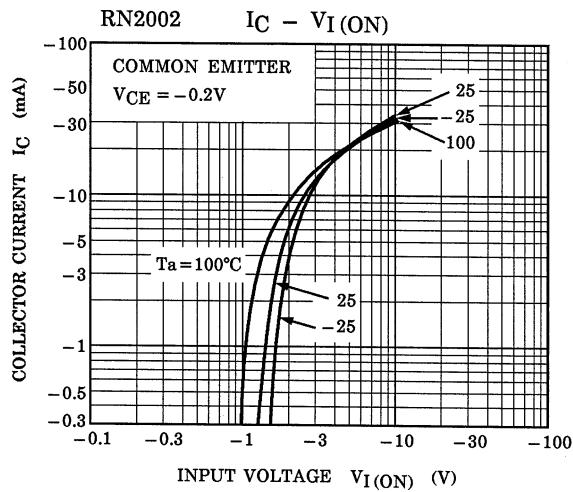
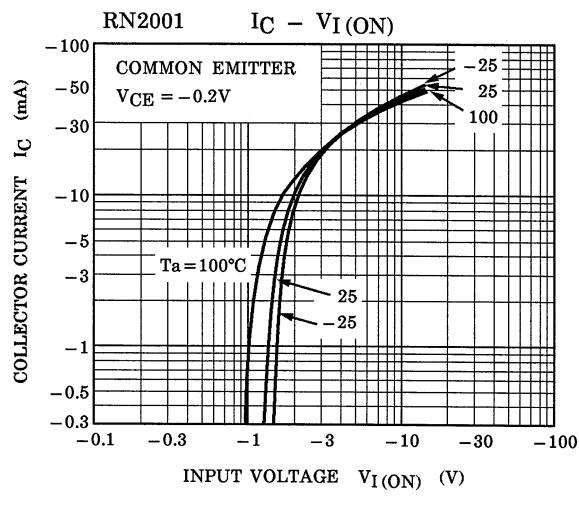
Weight: 0.21g

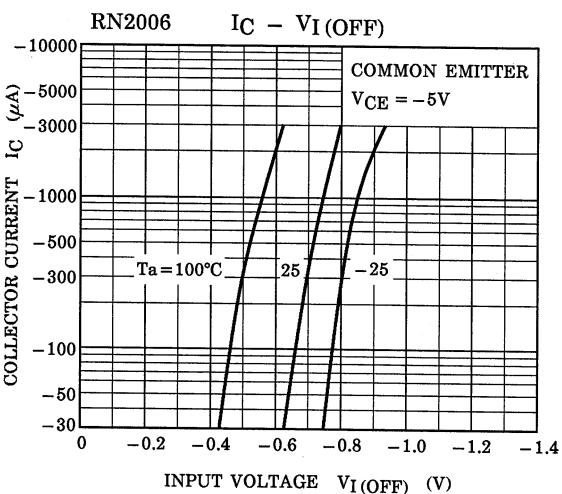
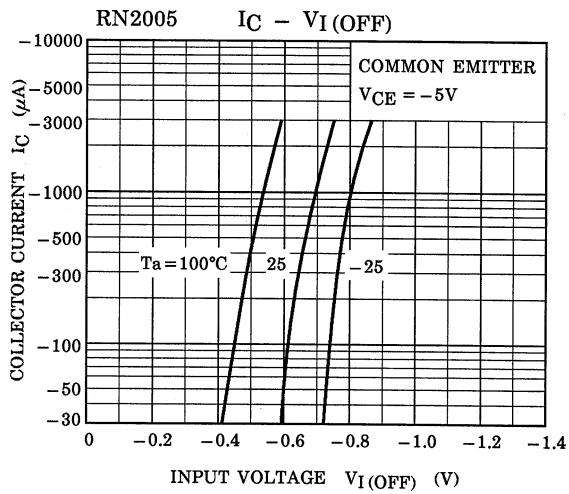
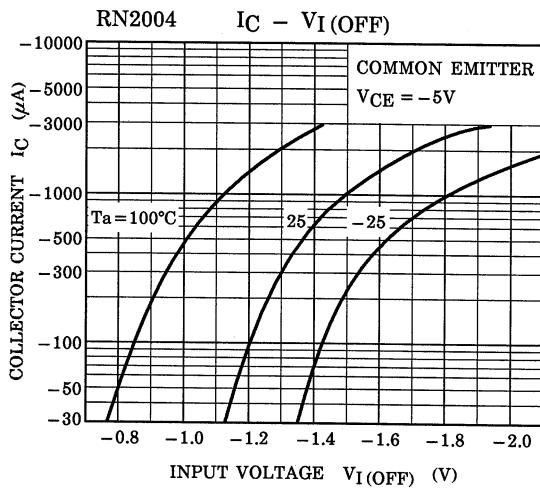
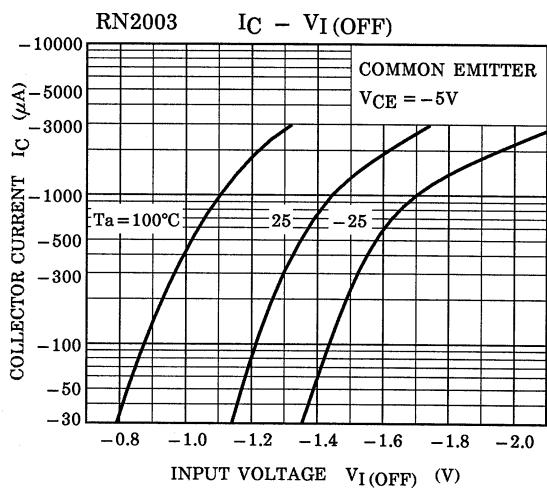
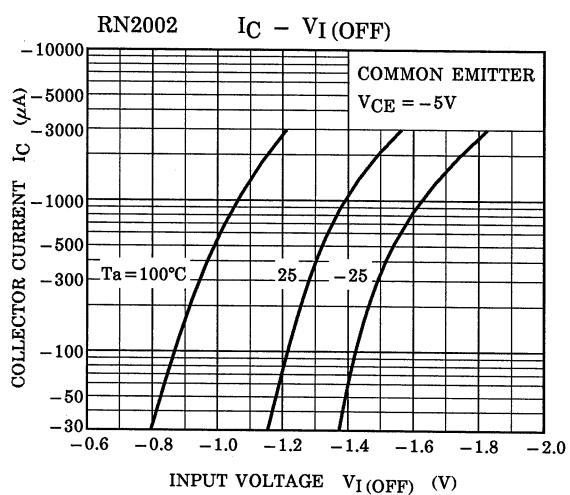
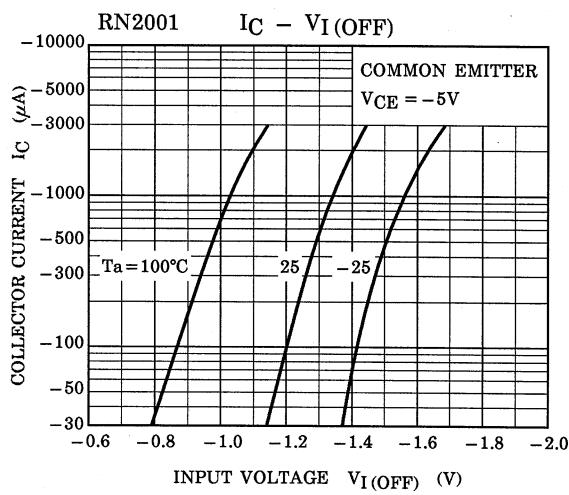
**Maximum Ratings (Ta = 25°C)**

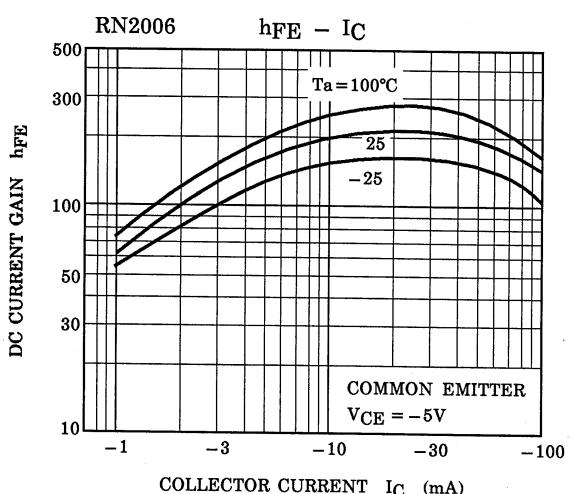
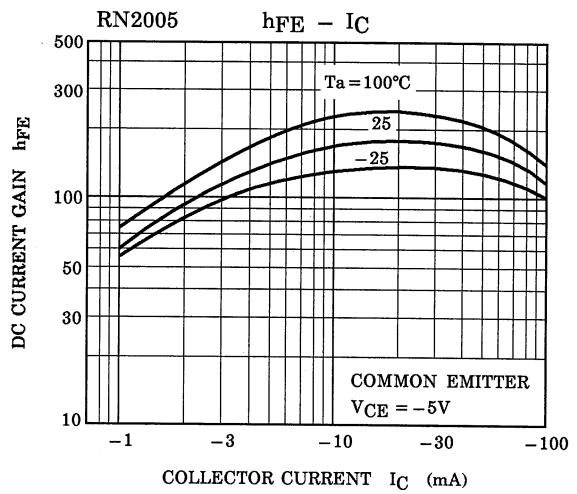
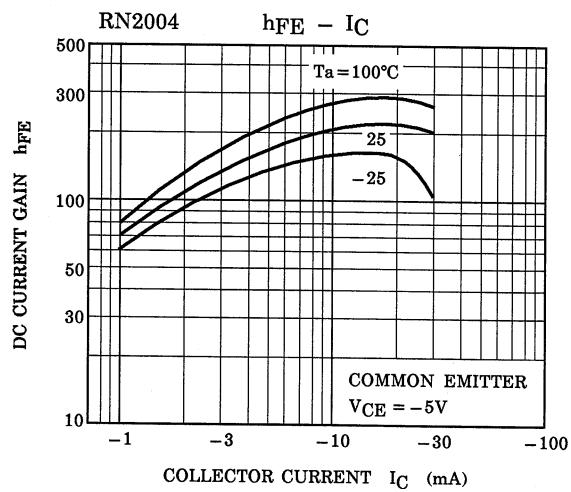
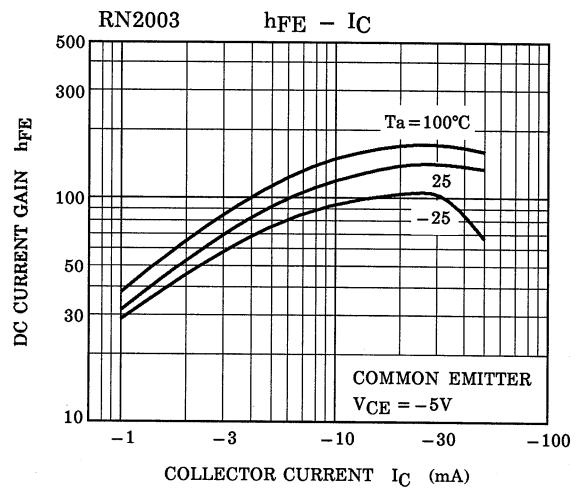
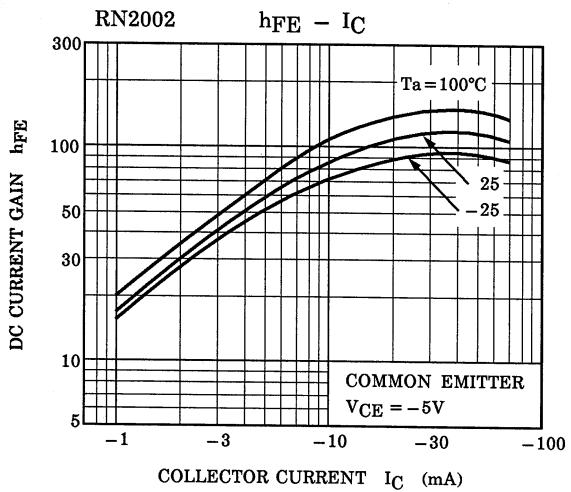
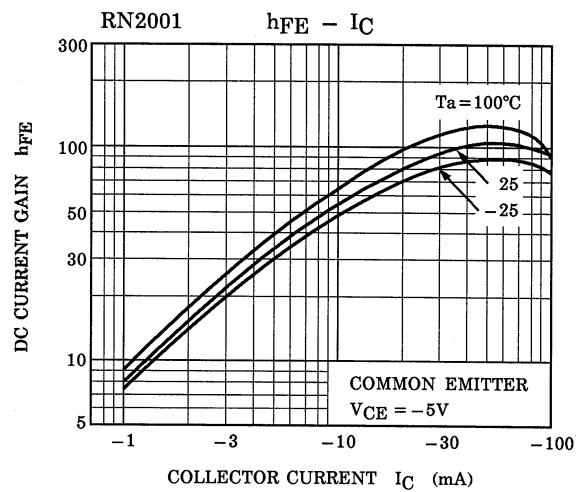
Characteristic		Symbol	Rating	Unit
Collector-base voltage	RN2001~2006	V <sub>CBO</sub>	-50	V
Collector-emitter voltage		V <sub>CEO</sub>	-50	V
Emitter-base voltage	RN2001~2004	V <sub>EBO</sub>	-10	V
			-5	
Collector current	RN2001~2006	I <sub>C</sub>	-100	mA
Collector power dissipation		P <sub>C</sub>	400	mW
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	-55~150	°C

## Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2001~2006	$I_{CBO}$	—	$V_{CB} = -50V, I_E = 0$	—	—	-100	nA
		$I_{CEO}$		$V_{CE} = -50V, I_B = 0$	—	—	-500	
Emitter cut-off current	RN2001	$I_{EBO}$	—	$V_{EB} = -10V, I_C = 0$	-0.82	—	-1.52	mA
	RN2002				-0.38	—	-0.71	
	RN2003				-0.17	—	-0.33	
	RN2004			$V_{EB} = -5V, I_C = 0$	-0.082	—	-0.15	
	RN2005				-0.078	—	-0.145	
	RN2006				-0.074	—	-0.138	
DC current gain	RN2001	$h_{FE}$	—	$V_{CE} = -5V, I_C = -10mA$	30	—	—	
	RN2002				50	—	—	
	RN2003				70	—	—	
	RN2004				80	—	—	
	RN2005				80	—	—	
	RN2006				80	—	—	
Collector-emitter saturation voltage	RN2001~2006	$V_{CE} (\text{sat})$	—	$I_C = -5mA, I_B = -0.25mA$	—	-0.1	-0.3	V
Input voltage (ON)	RN2001	$V_I (\text{ON})$	—	$V_{CE} = -0.2V, I_C = -5mA$	-1.1	—	-2.0	V
	RN2002				-1.2	—	-2.4	
	RN2003				-1.3	—	-3.0	
	RN2004				-1.5	—	-5.0	
	RN2005				-0.6	—	-1.1	
	RN2006				-0.7	—	-1.3	
Input voltage (OFF)	RN2001~2004	$V_I (\text{OFF})$	—	$V_{CE} = -5V, I_C = -0.1mA$	-1.0	—	-1.5	V
	RN2005, 2006				-0.5	—	-0.8	
Transition frequency	RN2001~2006	$f_T$	—	$V_{CE} = -10V, I_C = -5mA$	—	200	—	MHz
Collector Output capacitance	RN2001~2006	$C_{ob}$	—	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	3	6	pF
Input resistor	RN2001	R1	—		3.29	4.7	6.11	kΩ
	RN2002				7	10	13	
	RN2003				15.4	22	28.6	
	RN2004				32.9	47	61.1	
	RN2005				1.54	2.2	2.86	
	RN2006				3.29	4.7	6.11	
Resistor ratio	RN2001~2004	R1/R2	—		0.9	1.0	1.1	
	RN2005				0.0421	0.0468	0.0515	
	RN2006				0.09	0.1	0.11	







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