

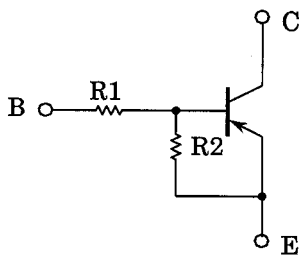
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

## RN2001,RN2002,RN2003 RN2004,RN2005,RN2006

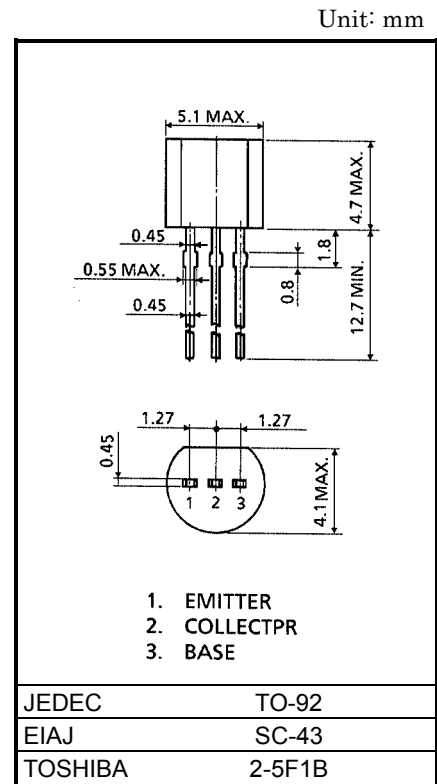
Switching, Inverter Circuit, Interface Circuit  
And Driver Circuit Applications

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

### Equivalent Circuit and Bias Resister 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



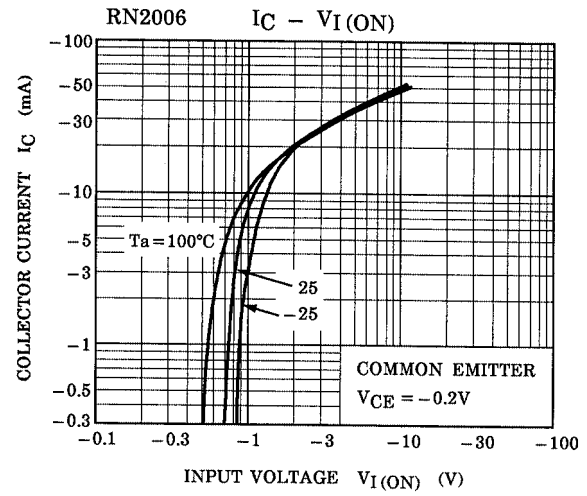
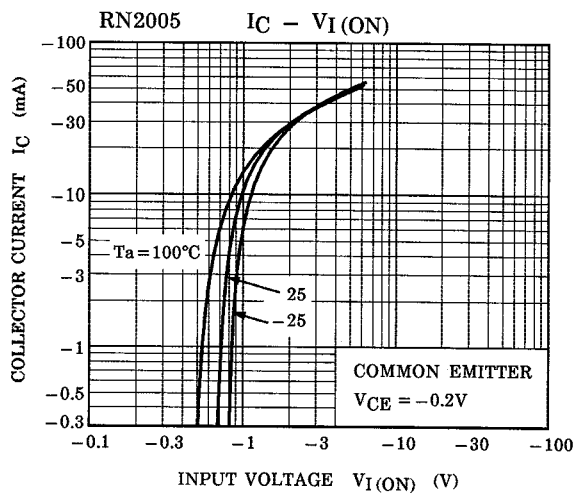
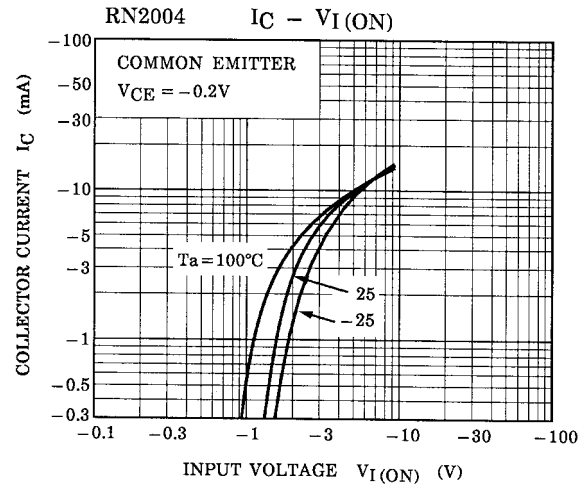
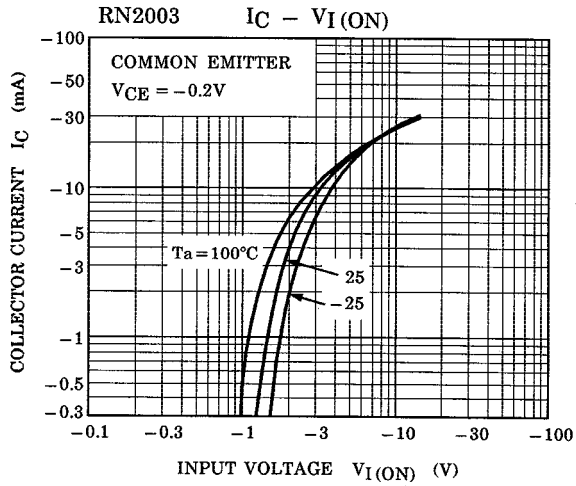
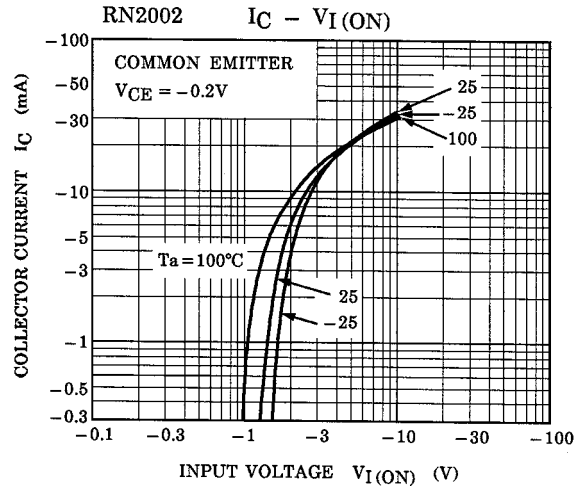
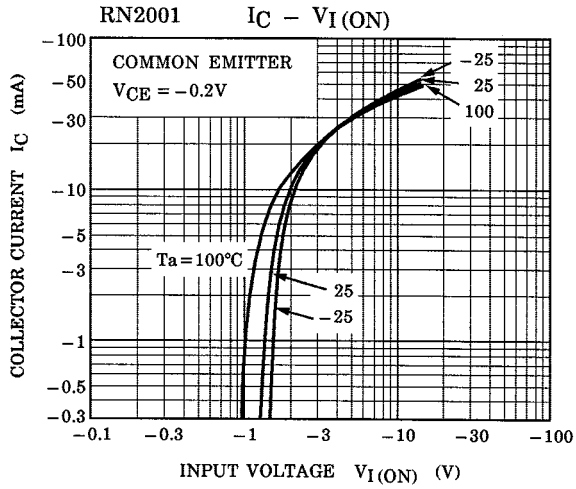
Weight: 0.21g

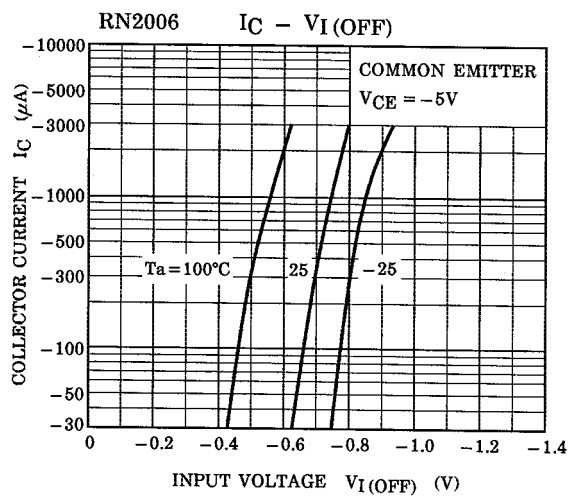
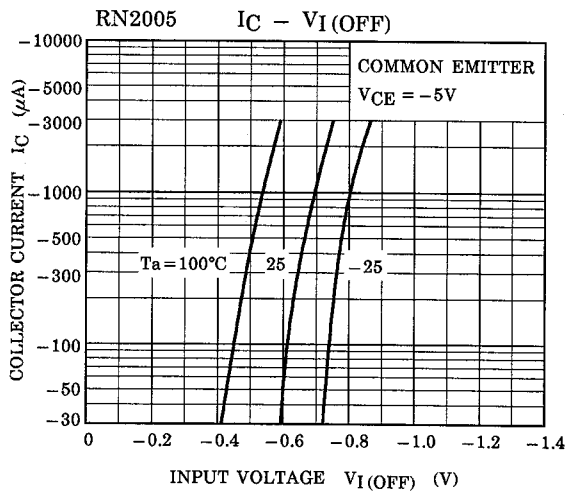
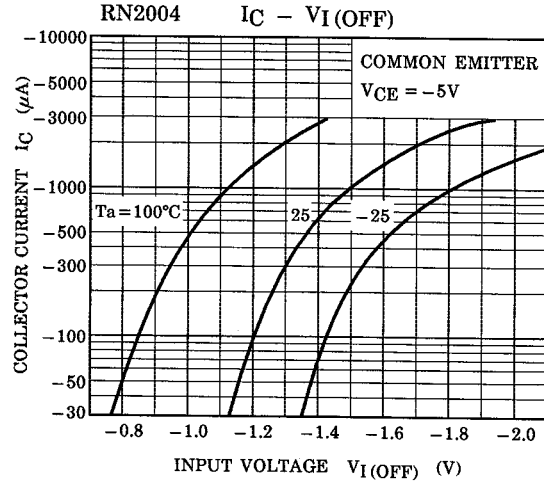
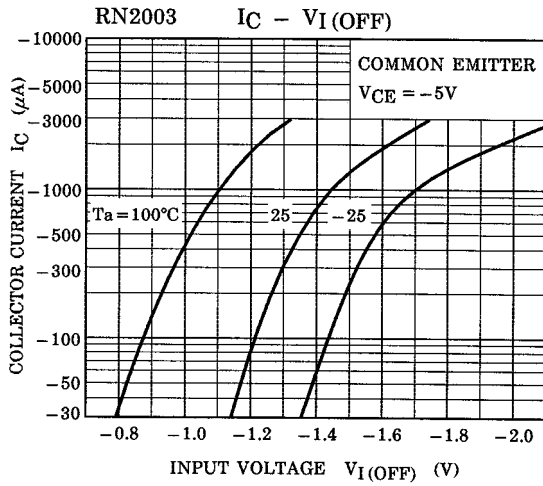
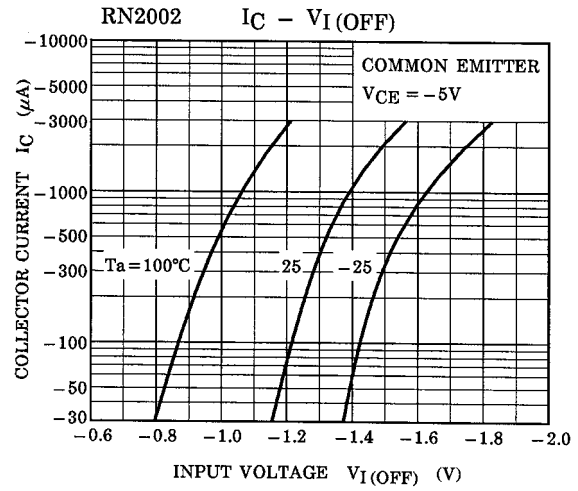
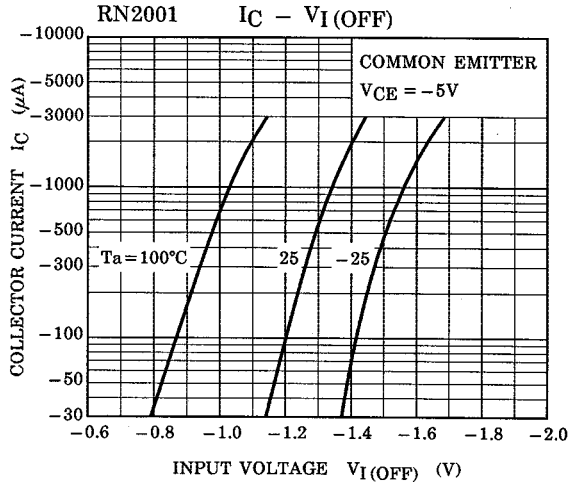
### Maximum Ratings (Ta = 25°C)

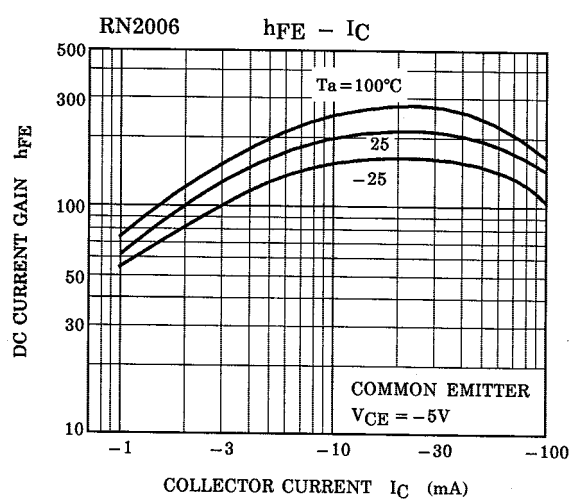
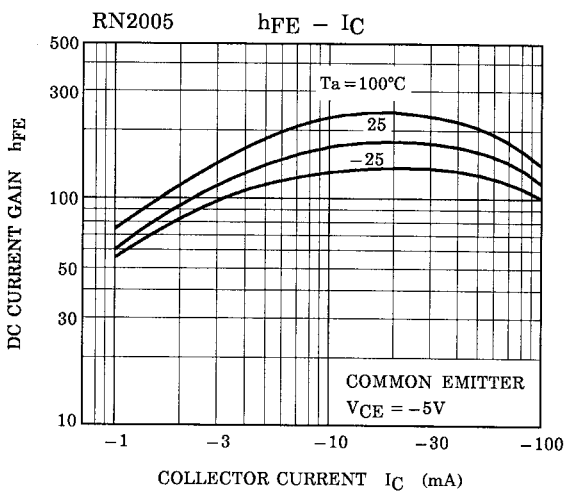
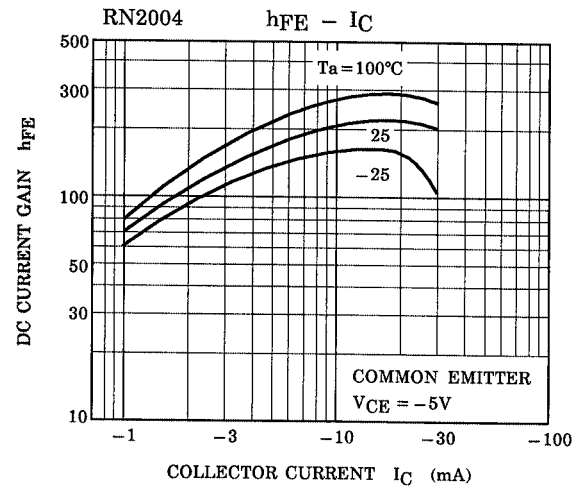
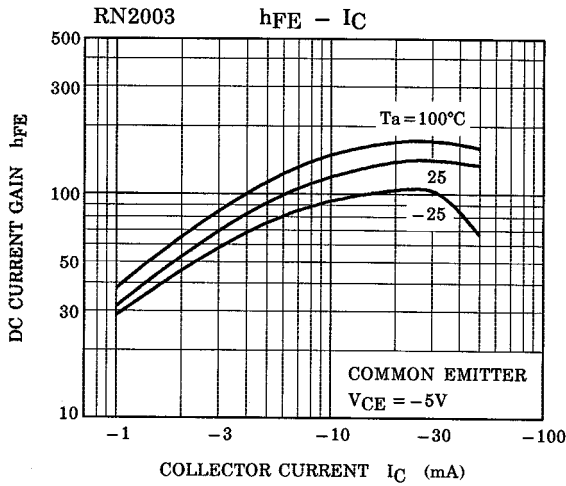
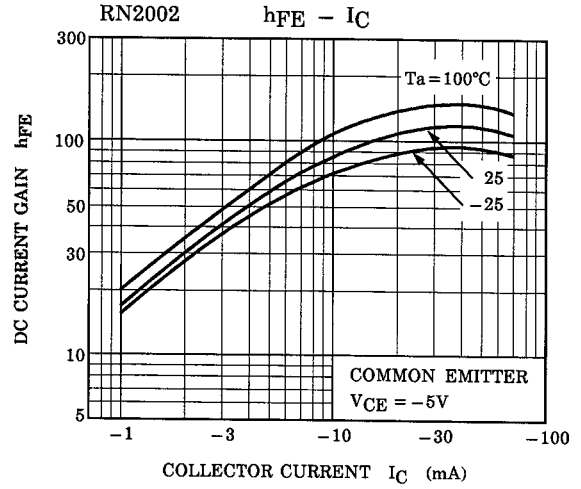
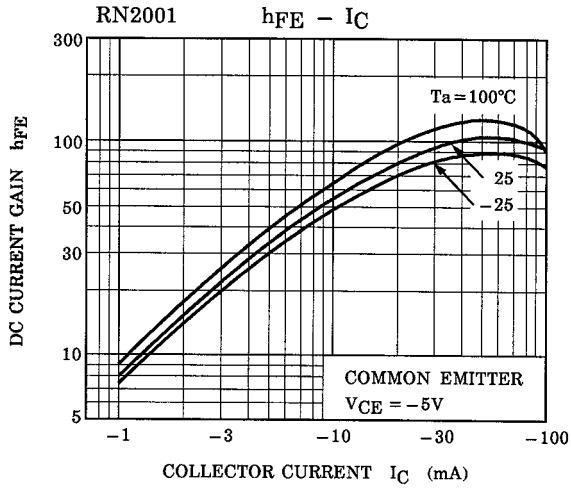
Characteristic	Symbol	Rating	Unit	
Collector-base voltage	RN2001~2006	$V_{CBO}$	-50	V
Collector-emitter voltage		$V_{CEO}$	-50	V
Emitter-base voltage	RN2001~2004	$V_{EBO}$	-10	V
	RN2005, 2006		-5	
Collector current	RN2001~2006	$I_C$	-100	mA
Collector power dissipation		$P_C$	400	mW
Junction temperature		$T_j$	150	°C
Storage temperature range		$T_{stg}$	-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				-0.082	—	-0.15	
	RN2005			$V_{EB} = -5V, I_C = 0$	-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	$V_{CE(sat)}$	—	$I_C = -5mA, I_B = -0.25mA$	—	-0.1	-0.3	V
Input voltage (ON)	RN2001	$V_{I(ON)}$	—	$V_{CE} = -0.2V, I_C = -5mA$	-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	$V_{I(OFF)}$	—	$V_{CE} = -5V, I_C = -0.1mA$	-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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