

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

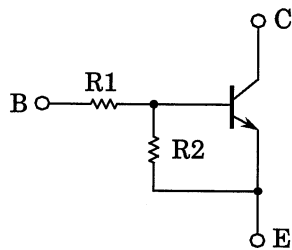
RN2501,RN2502,RN2503 RN2504,RN2505,RN2506

Switching, Inverter Circuit, Interface Circuit
And Driver Circuit Applications

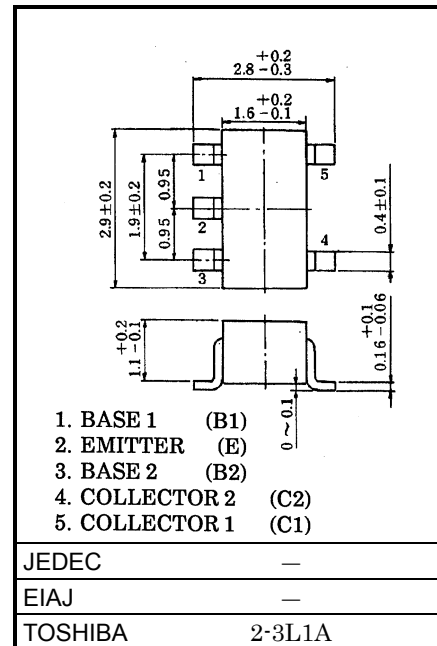
Unit in mm

- Including two devices in SMV (super mini type with 5 leads)
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN1501~RN1506

Equivalent Circuit and Bias Resistor Values



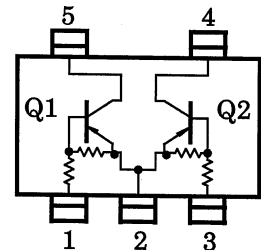
Type No.	R1 (kΩ)	R2 (kΩ)
RN2501	4.7	4.7
RN2502	10	10
RN2503	22	22
RN2504	47	47
RN2505	2.2	47
RN2506	4.7	47



JEDEC	—
EIAJ	—
TOSHIBA	2-3L1A

Weight: 0.014g

Equivalent Circuit (Top View)



Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V _{CB0}	-50	V
Collector-emitter voltage			
Emitter base voltage	V _{EB0}	-10	V
		-5	
Collector current	I _C	-100	mA
Collector power dissipation	P _C *	300	mW
Junction temperature	T _j	150	°C
Storage temperature range	T _{stg}	-55~150	°C

* Total rating

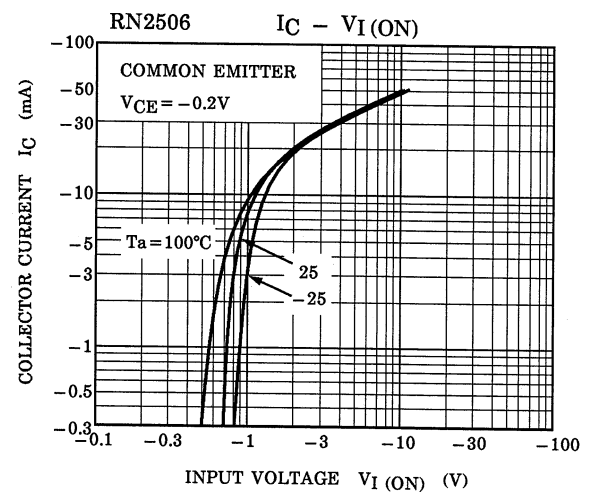
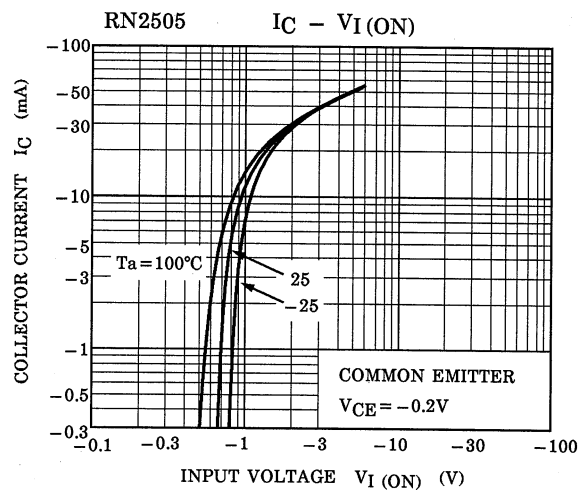
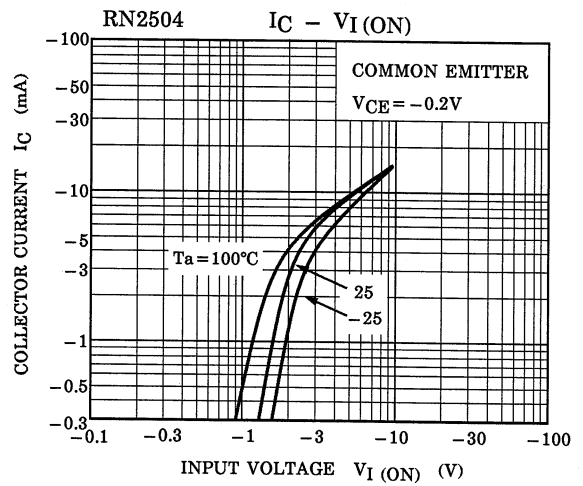
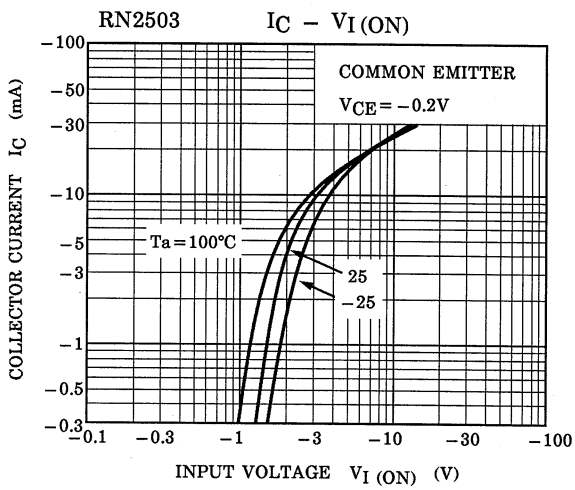
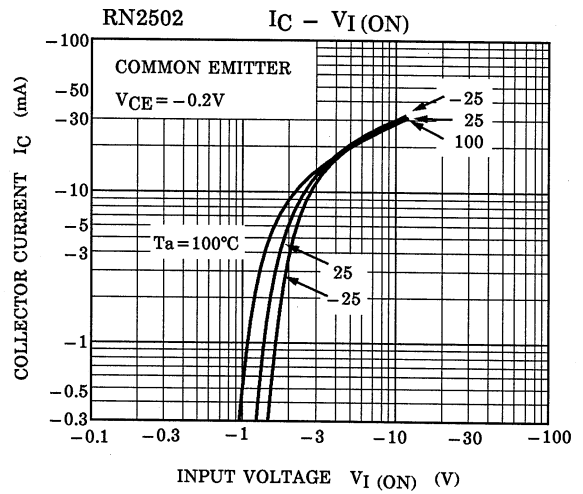
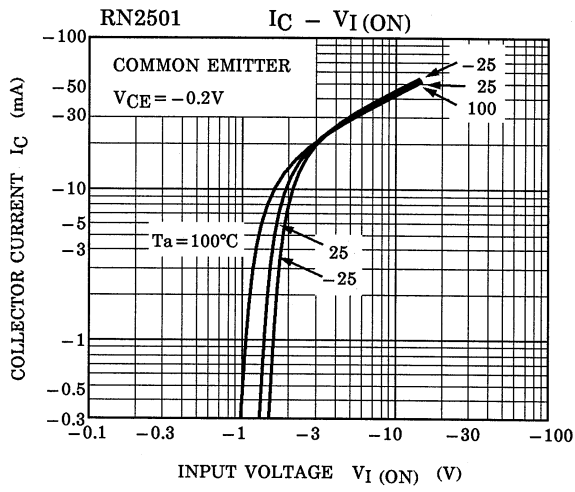
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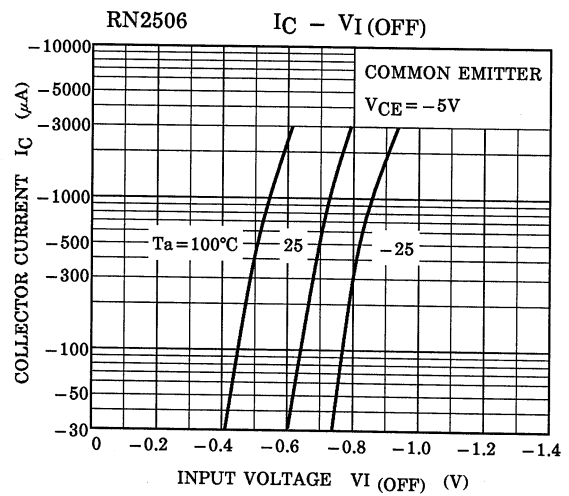
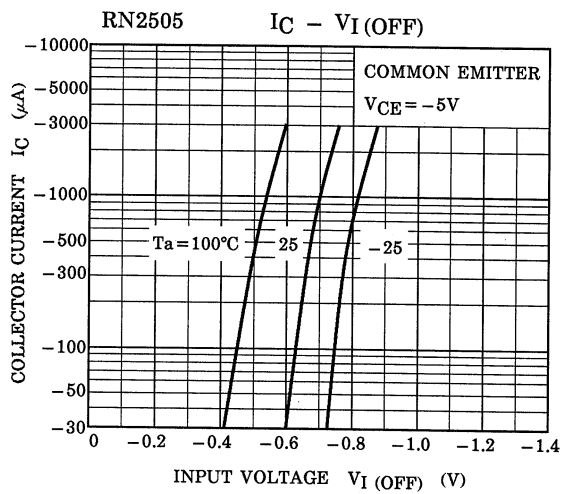
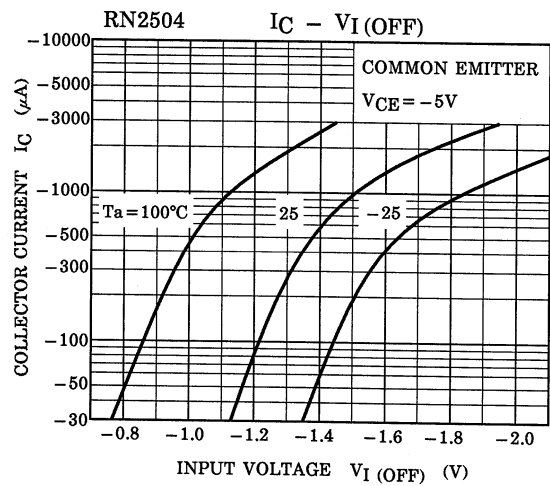
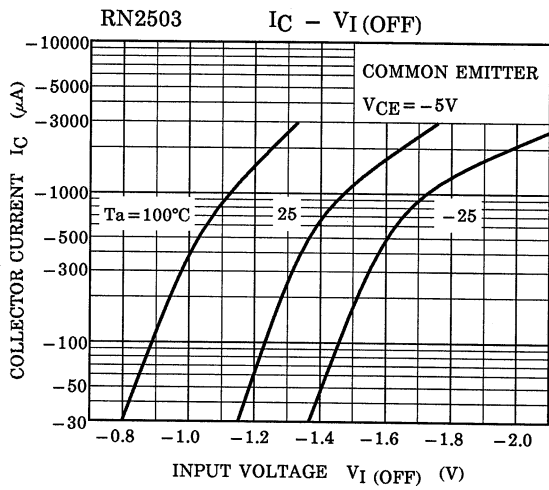
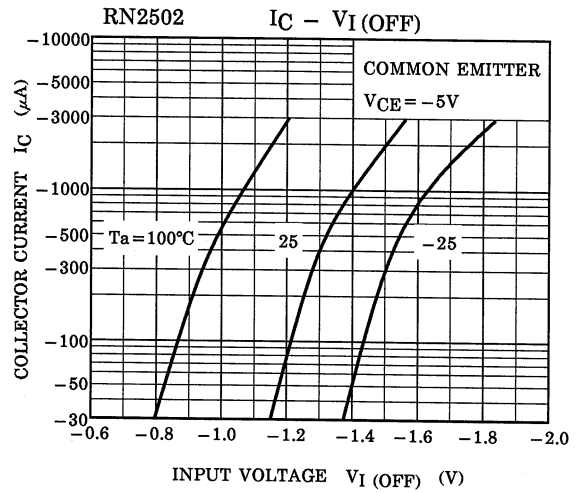
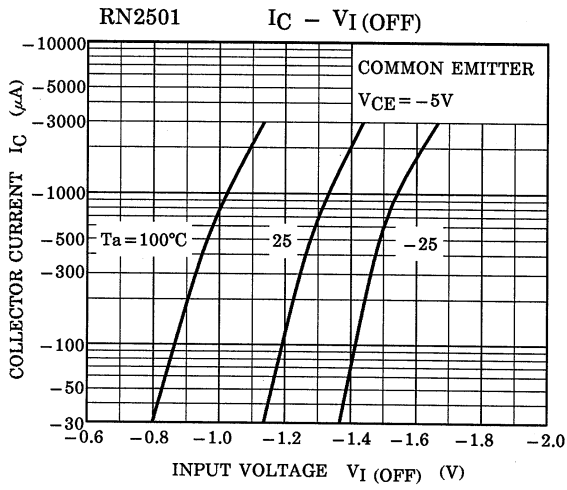
Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2501~2506	I_{CBO}	—	$V_{CB} = -50V, I_E = 0$	—	—	-100	nA
		I_{CEO}	—	$V_{CE} = -50V, I_B = 0$	—	—	-500	
Emitter cut-off current	RN2501	I_{EBO}	—	$V_{EB} = -10V, I_C = 0$	-0.82	—	-1.52	mA
	RN2502		—		-0.38	—	-0.71	
	RN2503		—		-0.17	—	-0.33	
	RN2504		—	-0.082	—	-0.15		
	RN2505		—	$V_{EB} = -5V, I_C = 0$	-0.078	—	-0.145	
	RN2506		—		-0.074	—	-0.138	
DC current gain	RN2501	h_{FE}	—	$V_{CE} = -5V$ $I_C = -10mA$	30	—	—	—
	RN2502		—		50	—	—	
	RN2503		—		70	—	—	
	RN2504		—		80	—	—	
	RN2505		—		80	—	—	
	RN2506		—		80	—	—	
Collector-emitter saturation voltage	RN2501~2506	$V_{CE(sat)}$	—	$I_C = -5mA$ $I_B = -0.25mA$	—	-0.1	-0.3	V
Input voltage (ON)	RN2501	$V_{I(ON)}$	—	$V_{CE} = -0.2V$ $I_C = -5mA$	-1.1	—	-2.0	V
	RN2502		—		-1.2	—	-2.4	
	RN2503		—		-1.3	—	-3.0	
	RN2504		—		-1.5	—	-5.0	
	RN2505		—		-0.6	—	-1.1	
	RN2506		—		-0.7	—	-1.3	
Input voltage (OFF)	RN2501~2504	$V_{I(OFF)}$	—	$V_{CE} = -5V$ $I_C = -0.1mA$	-1.0	—	-1.5	V
	RN2505, 2506		—		-0.5	—	-0.8	
Translation frequency	RN2501~2506	f_T	—	$V_{CE} = -10V$ $I_C = -5mA$	—	200	—	MHz
Collector output capacitance	RN2501~2506	C_{ob}	—	$V_{CB} = -10V, I_E = 0$ $f = 1MHz$	—	3	6	pF
Input resistor	RN2501	R1	—	—	3.29	4.7	6.11	kΩ
	RN2502		—		7	10	13	
	RN2503		—		15.4	22	28.6	
	RN2504		—		32.9	47	61.1	
	RN2505		—		1.54	2.2	2.86	
	RN2506		—		3.29	4.7	6.11	
Resistor ratio	RN2501~2504	R1/R2	—	—	0.9	1.0	1.1	—
	RN2505		—		0.0421	0.0468	0.0515	
	RN2506		—		0.09	0.1	0.11	

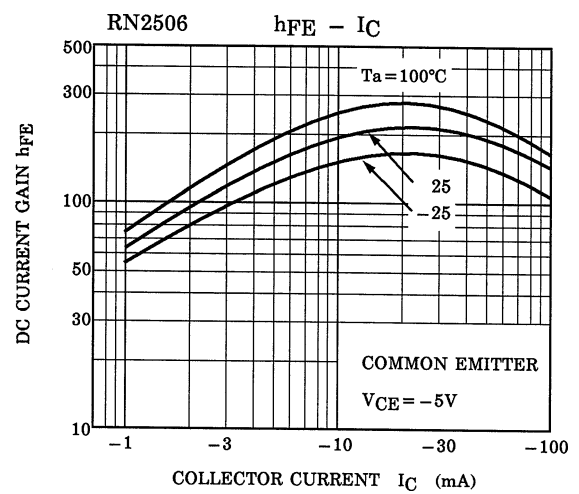
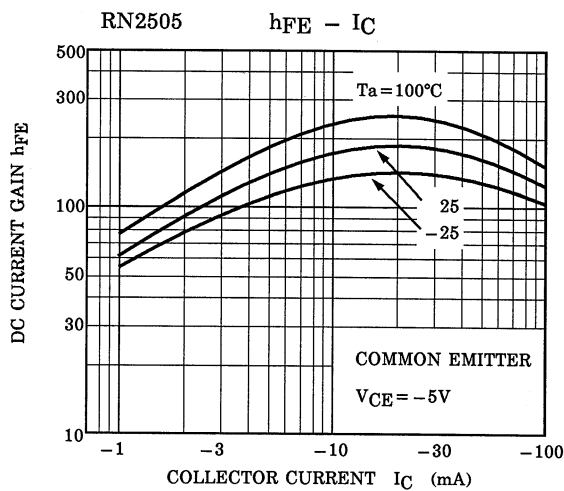
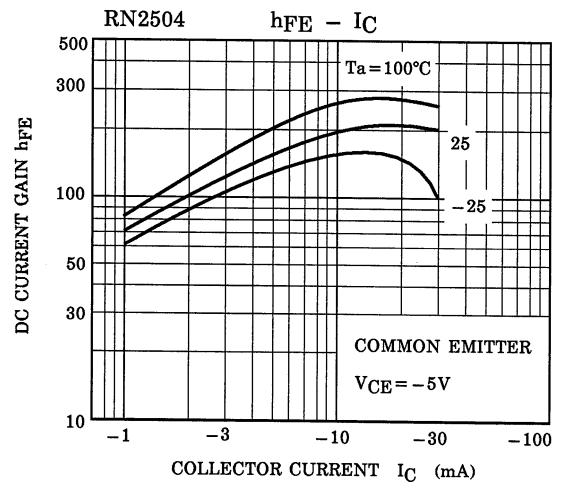
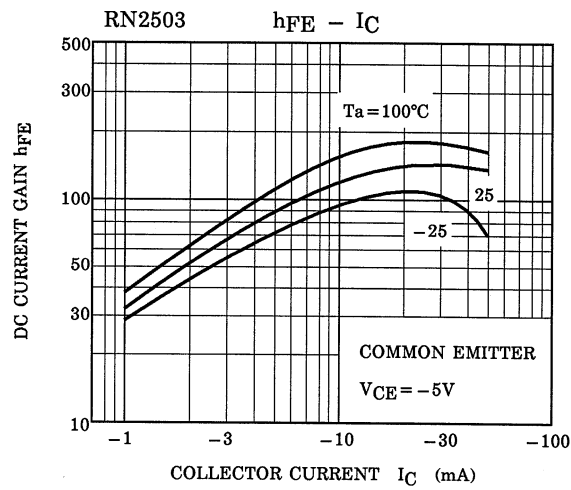
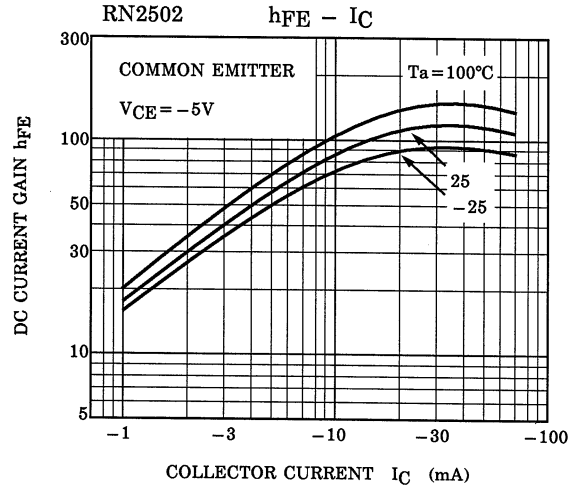
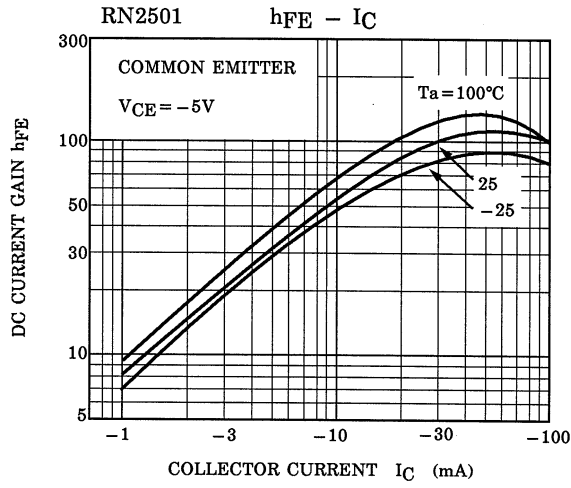
(Q1, Q2 Common)

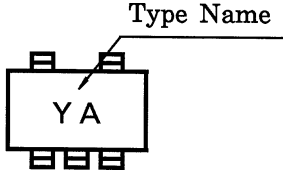
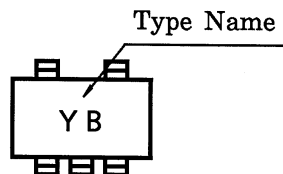
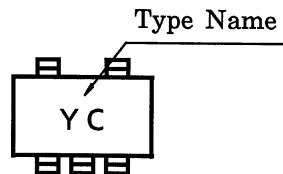
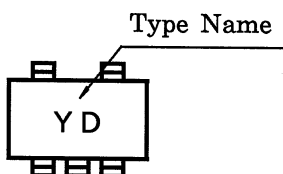
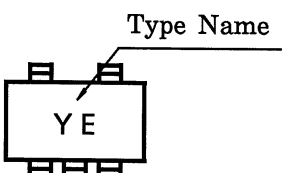


(Q1, Q2 Common)



(Q1, Q2 Common)



Type Name	Marking
RN2501	
RN2502	
RN2503	
RN2504	
RN2505	
RN2506	