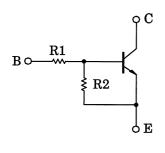
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1001,RN1002,RN1003 RN1004,RN1005,RN1006

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 RN2001~RN2006

Equivalent Circuit and Bias Resister Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN1001	4.7	4.7
RN1002	10	10
RN1003	22	22
RN1004	47	47
RN1005	2.2	47
RN1006	4.7	47

1. EMITTER 2. COLLECTOR 3. BASE Unit: mm

SC-43

2-5F1B

Weight: 0.21g

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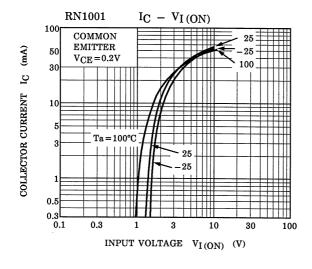
Maximum Ratings (Ta = 25°C)

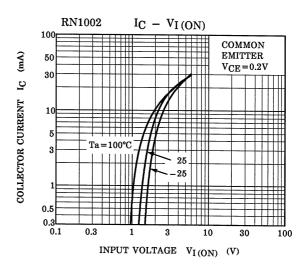
Characteris	Symbol	Rating	Unit		
Collector-base voltage	- RN1001~1006	V _{CBO}	50	V	
Collector-emitter voltage	- KN 1001~1000	V _{CEO}	50	V	
Emitter-base voltage	RN1001~1004	V _{EBO}	10	V	
	RN1005, 1006	V EBO	5		
Collector current		IC	100	mA	
Collector power dissipation	RN1001~1006	PC	400	mW	
Junction temperature	NIV 100 1~ 1000	Tj	150	°C	
Storage temperature range		T _{stg}	−55~150	°C	

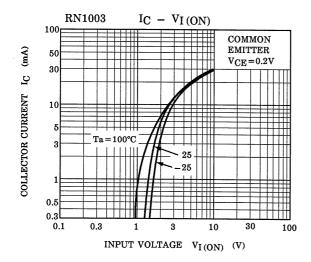


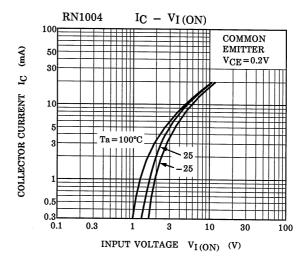
Electrical Characteristics (Ta = 25°C)

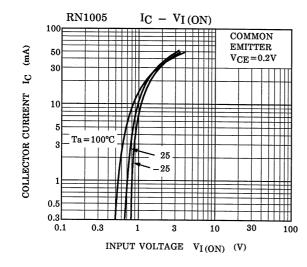
Characteri	stic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	RN1001~1006	I _{CBO}	_	$V_{CB} = 50V, I_E = 0$	_	_	100	- nA
	1000 1~1000			V _{CE} = 50V, I _B = 0	_	_	500	
Emitter cut-off current	RN1001	I _{EBO}	_	V _{EB} = 10V, I _C = 0	0.82	_	1.52	mA
	RN1002				0.38	_	0.71	
	RN1003				0.17	_	0.33	
	RN1004				0.082	_	0.15	
	RN1005			\\ \(\) \ _ 0	0.078	_	0.145	
	RN1006			V _{EB} = 5V, I _C = 0	0.074	_	0.138	
DC current gain	RN1001				30	_	_	
	RN1002				50	_	_	
	RN1003	h		\\- = 5\\ \ \- = 10m \\	70	_	_	_
	RN1004	h _{FE}	_	V _{CE} = 5V, I _C = 10mA	80	_	_	
	RN1005				80	_	_	
	RN1006				80	_	_	
Collector-emitter saturation voltage	RN1001~1006	V _{CE} (sat)	_	I _C = 5mA, I _B = 0.25mA	_	0.1	0.3	V
	RN1001			V _{CE} = 0.2V, I _C = 5mA	1.1	_	2.0	. V
Input voltage (ON)	RN1002	Vi (ON)	_		1.2	_	2.4	
	RN1003				1.3	_	3.0	
	RN1004				1.5	_	5.0	
	RN1005				0.6	_	1.1	
	RN1006				0.7	_	1.3	
Laurent vialla via (OFF)	RN1001~1004	V	_	V _{CE} = 5V, I _C = 0.1mA	1.0	_	1.5	٧
Input voltage (OFF)	RN1005, 1006	V _{I (OFF)}			0.5	_	0.8	
Transition frequency	RN1001~1006	f _T	_	V _{CE} = 10V, I _C = 5mA	_	250	_	MHz
Collector Output capacitance	RN1001~1006	C _{ob}	_	V _{CB} = 10V, I _E = 0, f = 1MH _z	_	3	6	pF
Input resistor	RN1001	R1	_		3.29	4.7	6.11	kΩ
	RN1002				7	10	13	
	RN1003				15.4	22	28.6	
	RN1004				32.9	47	61.1	
	RN1005				1.54	2.2	2.86	
	RN1006				3.29	4.7	6.11	
Resistor ratio	RN1001~1004	R1/R2 —			0.9	1.0	1.1	_
	RN1005		_		0.0421	0.0468	0.0515	
	RN1006				0.09	0.1	0.11	

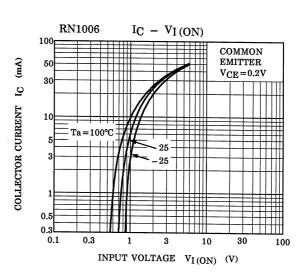


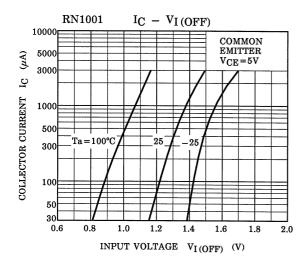


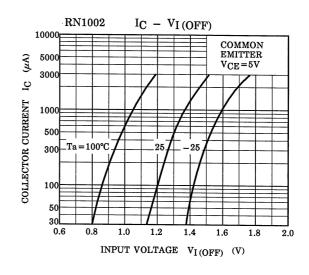


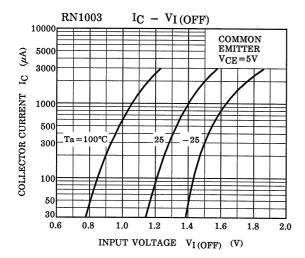


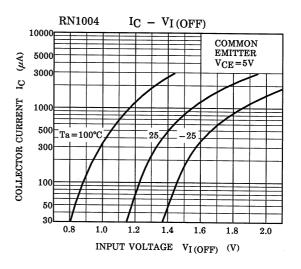


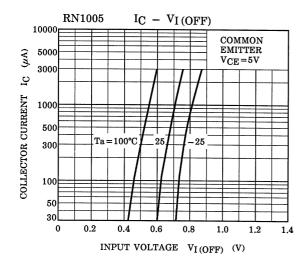


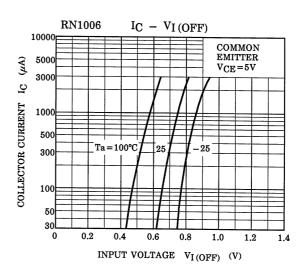


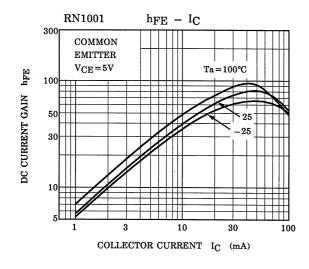


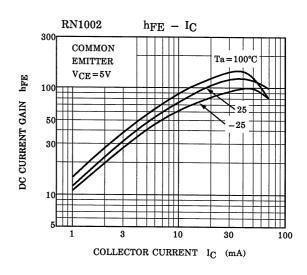


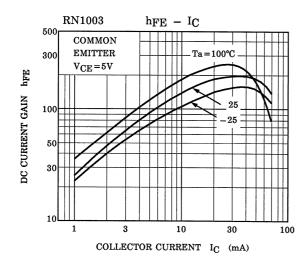


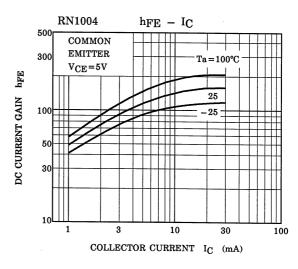


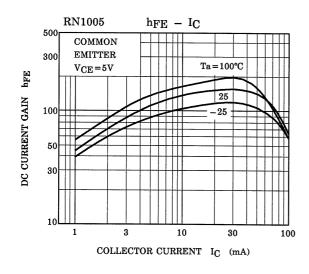


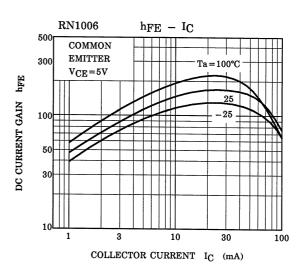












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