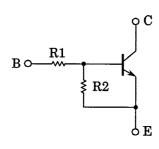
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1101,RN1102,RN1103 RN1104,RN1105,RN1106

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 RN2101~RN2106

Equivalent Circuit and Bias Resister Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN1101	4.7	4.7
RN1102	10	10
RN1103	22	22
RN1104	47	47
RN1105	2.2	47
RN1106	4.7	47

1. BASE 2. EMITTER 3. COLLECTOR JEDEC — EIAJ — TOSHIBA 2-2H1A

Weight: 2.4mg

Maximum Ratings (Ta = 25°C)

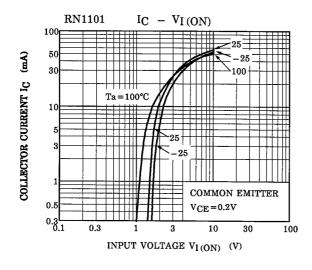
Characteristic		Symbol	Rating	Unit	
Collector-base voltage	RN1101~1106	V_{CBO}	50	V	
Collector-emitter voltage	KNTTOTSTTOO	V _{CEO}	50	V	
Emitter-base voltage	RN1101~1104	V_{FBO}	10	V	
	RN1105, 1106	vebo.	5		
Collector current		IC	100	mA	
Collector power dissipation	RN1101~1106	PC	100	mW	
Junction temperature	KN1101~1100	Tj	150	°C	
Storage temperature range		T _{stg}	-55~150	°C	

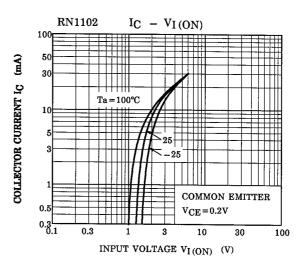


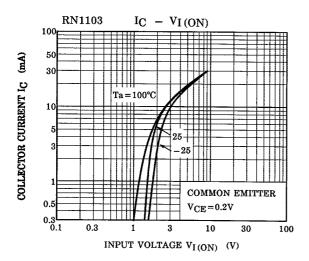
Electrical Characteristics (Ta = 25°C)

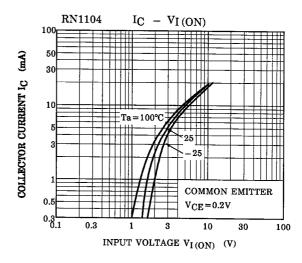
Characteristic		Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	DN4404 4400	I _{CBO}	_	V _{CB} = 50V, I _E = 0	_	_	100	nA
	RN1101~1106			V _{CE} =50V, I _B = 0	_	_	500	
	RN1101	I _{EBO}	_	V _{EB} = 10V, I _C = 0	0.82	_	1.52	mA
Emitter cut-off current	RN1102				0.38	_	0.71	
	RN1103				0.17	_	0.33	
	RN1104				0.082	_	0.15	
	RN1105				0.078	_	0.145	
	RN1106			$V_{EB} = 5V, I_{C} = 0$	0.074	_	0.138	
	RN1101				30	_	_	
	RN1102				50	_	_	
	RN1103				70	_	_	
DC current gain	RN1104	h _{FE}	_	$V_{CE} = 5V, I_{C} = 10mA$	80	_	_	_
	RN1105				80	_	_	
	RN1106				80	_	_	
Collector-emitter saturation voltage	RN1101~1106	V _{CE (sat)}	_	I _C = 5mA, I _B = 0.25mA	-	0.1	0.3	V
	RN1101	V _{I (ON)}		V _{CE} = 0.2V, I _C = 5mA	1.1	_	2.0	V
	RN1102		_		1.2	_	2.4	
	RN1103				1.3	_	3.0	
Input voltage (ON)	RN1104				1.5	_	5.0	
	RN1105				0.6	_	1.1	
	RN1106				0.7	_	1.3	
	RN1101~1104			V _{CE} = 5V, I _C = 0.1mA	1.0	_	1.5	V
Input voltage (OFF)	RN1105, 1106	V _{I (OFF)}	_		0.5	_	0.8	
Transition frequency	RN1101~1106	f _T	_	V _{CE} = 10V, I _C = 5mA	_	250	_	MHz
Collector Output capacitance	RN1101~1106	C _{ob}	_	V _{CB} = 10V, I _E = 0, f = 1MH _z	_	3	6	pF
	RN1101	R1			3.29	4.7	6.11	kΩ
	RN1102		_		7	10	13	
lanut anniatan	RN1103				15.4	22	28.6	
Input resistor	RN1104				32.9	47	61.1	
	RN1105				1.54	2.2	2.86	
	RN1106				3.29	4.7	6.11	
Resistor ratio	RN1101~1104				0.9	1.0	1.1	_
	RN1105	R1/R2 —	_		0.0421	0.0468	0.0515	
	RN1106				0.09	0.1	0.11	

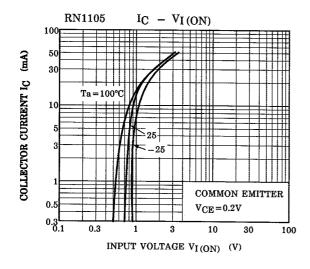
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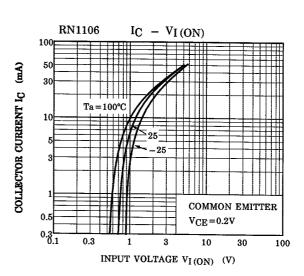


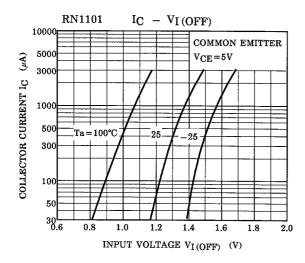


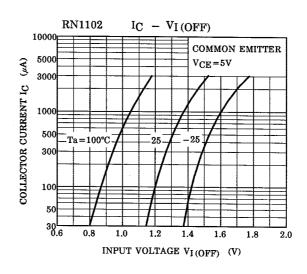


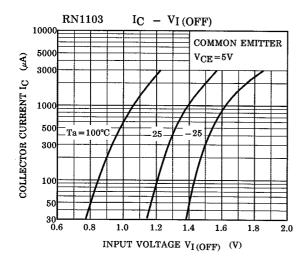


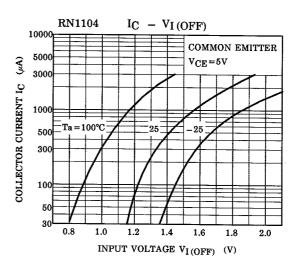


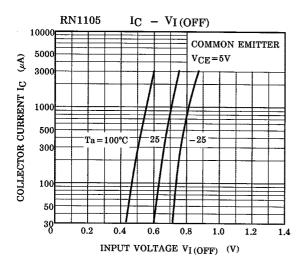


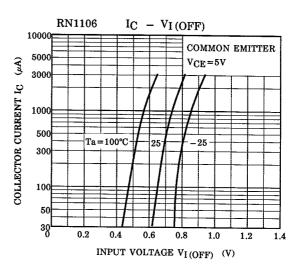




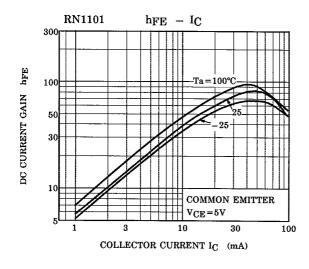


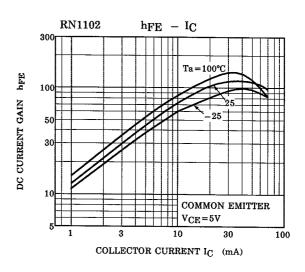


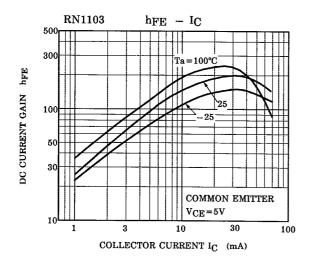


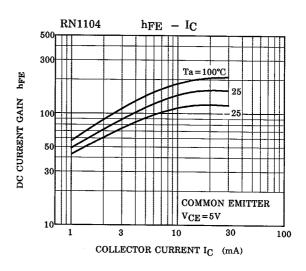


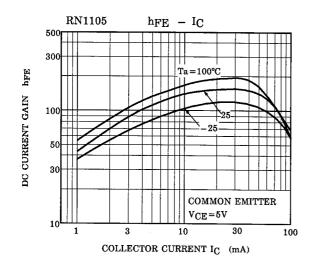
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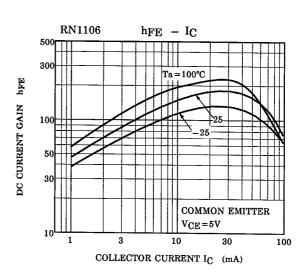












Type Name	Marking
RN1101	Type Name
RN1102	Type Name
RN1103	Type Name X C
RN1104	Type Name X D
RN1105	Type Name X E
RN1106	Type Name X F

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000707EAA

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