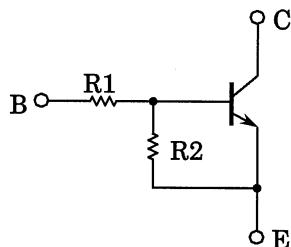


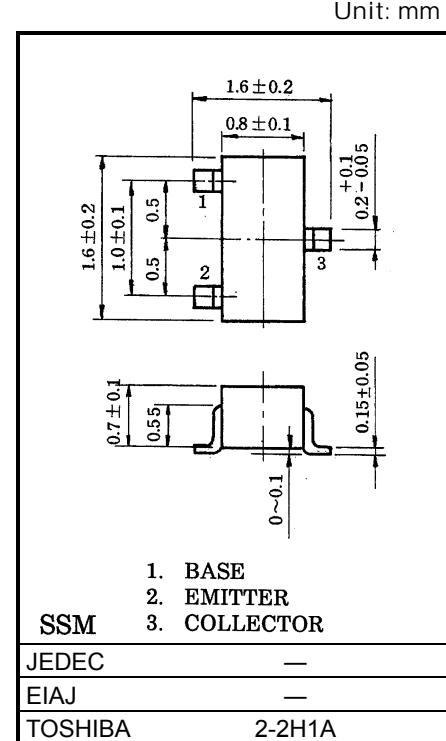
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1107, RN1108, RN1109Switching, 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 RN2107~2109

Equivalent Circuit and Bias Resistor Values

Type No.	R1 (kΩ)	R2 (kΩ)
RN1107	10	47
RN1108	22	47
RN1109	47	22

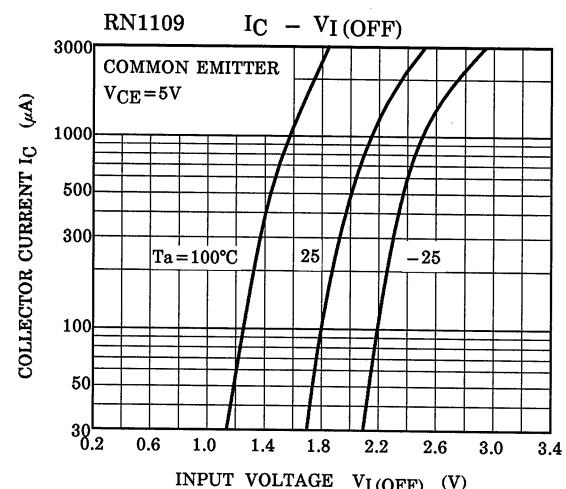
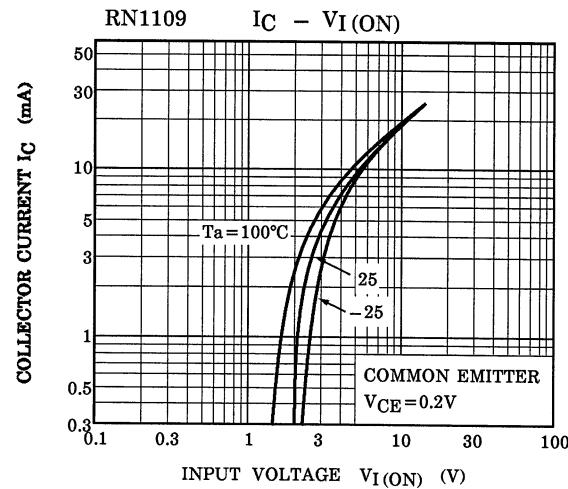
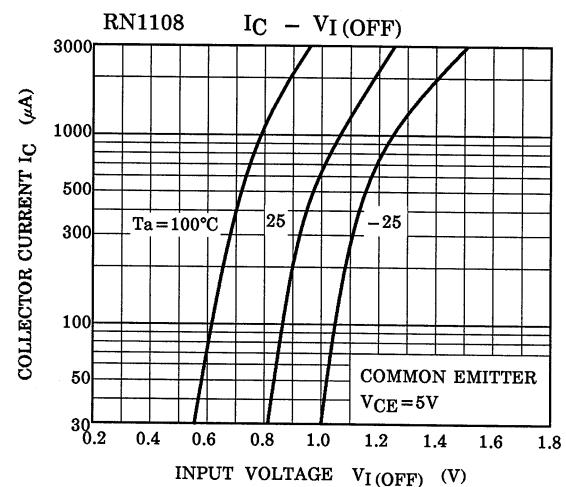
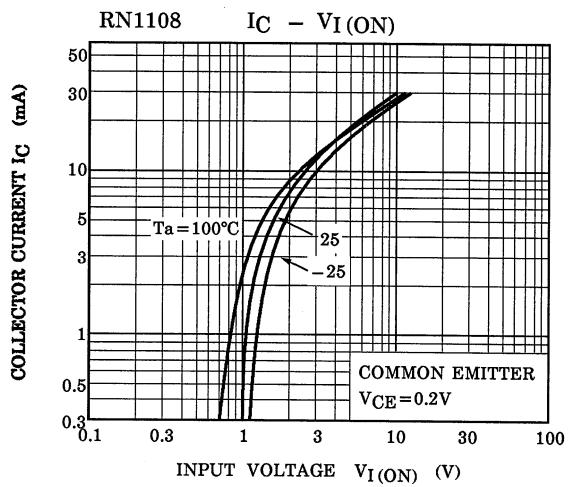
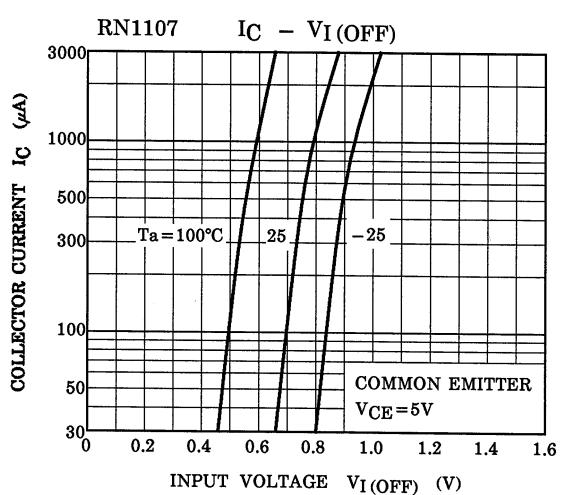
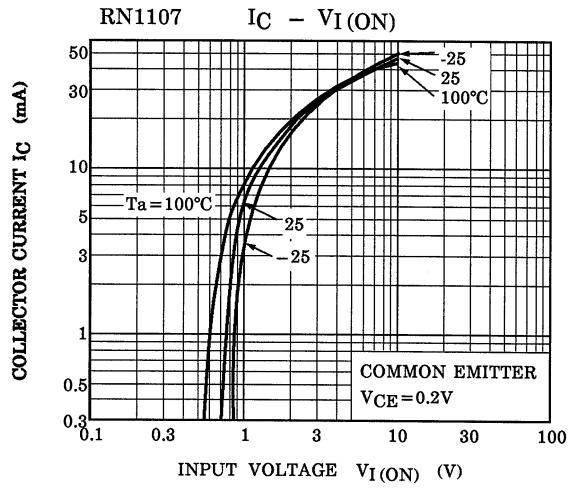
**Maximum Ratings (Ta = 25°C)**

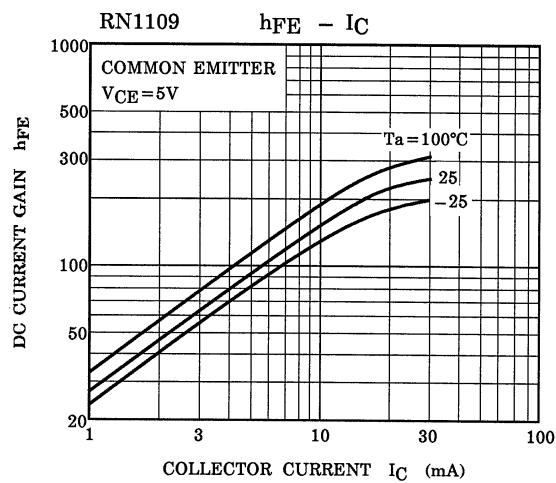
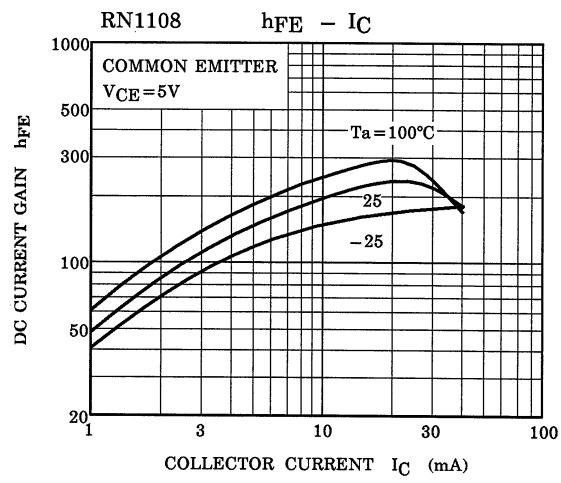
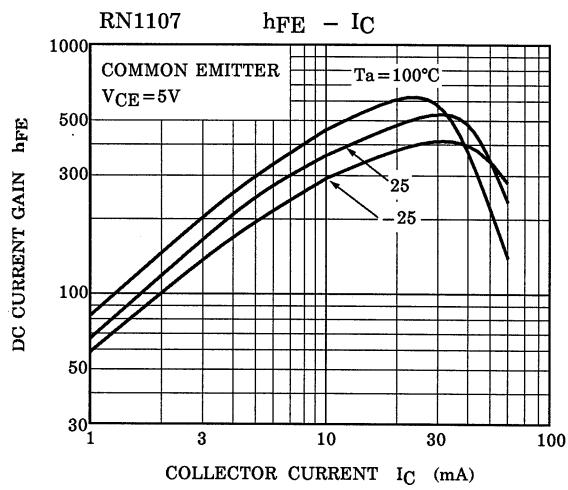
Weight: 2.4mg

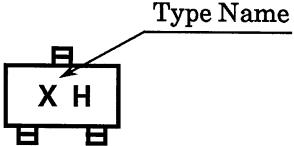
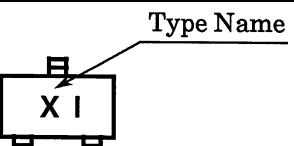
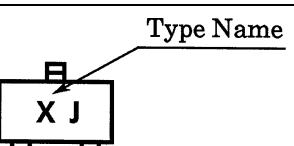
Characteristic		Symbol	Rating	Unit
Collector-base voltage	RN1107~1109	V _{CBO}	50	V
Collector-emitter voltage	RN1107~1109	V _{CEO}	50	V
Emitter-base voltage	RN1107	V _{EBO}	6	V
	RN1108		7	
	RN1109		15	
Collector current	RN1107~1109	I _C	100	mA
Collector power dissipation	RN1107~1109	P _C	100	mW
Junction temperature	RN1107~1109	T _j	150	°C
Storage temperature range	RN1107~1109	T _{stg}	-55~150	°C

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Collector cut-off current	RN1107~1109	I _{CBO}	—	V _{CB} = 50V, I _E = 0		—	—	100	nA
		I _{CEO}	—	V _{CE} = 50V, I _B = 0		—	—	500	nA
Emitter cut-off current	RN1107	I _{EBO}	—	V _{EB} = 6V, I _C = 0	0.081	—	0.15	mA	
	RN1108		—	V _{EB} = 7V, I _C = 0	0.078	—	0.145		
	RN1109		—	V _{EB} = 15V, I _C = 0	0.167	—	0.311		
DC current gain	RN1107	h _{FE}	—	V _{CE} = 5V, I _C = 10mA	80	—	—	—	
	RN1108		—		80	—	—		
	RN1109		—		70	—	—		
Collector-emitter saturation voltage	RN1107~1109	V _{CE} (sat)	—	I _C = 5mA, I _B = 0.25mA	—	0.1	0.3	V	
Input voltage (ON)	RN1107	V _I (ON)	—	V _{CE} = 0.2V, I _C = 5mA	0.7	—	1.8	V	
	RN1108		—		1.0	—	2.6		
	RN1109		—		2.2	—	5.8		
Input voltage (OFF)	RN1107	V _I (OFF)	—	V _{CE} = 5V, I _C = 0.1mA	0.5	—	1.0	V	
	RN1108		—		0.6	—	1.16		
	RN1109		—		1.5	—	2.6		
Translation frequency	RN1107~1109	f _T	—	V _{CE} = 10V, I _C = 5mA	—	250	—	MHz	
Collector output capacitance	RN1107~1109	C _{ob}	—	V _{CB} = 10V, I _E = 0, f = 1MHz	—	3	6	pF	
Input Resistor	RN1107	R1	—	—	7	10	13	kΩ	
	RN1108		—		15.4	22	28.6		
	RN1109		—		32.9	47	61.1		
Resistor Ratio	RN1107	R1/R2	—	—	0.191	0.213	0.232	—	
	RN1108		—		0.421	0.468	0.515		
	RN1109		—		1.92	2.14	2.35		





Type Name	Marking
RN1107	
RN1108	
RN1109	

RESTRICTIONS ON PRODUCT USE

000707EAA

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