

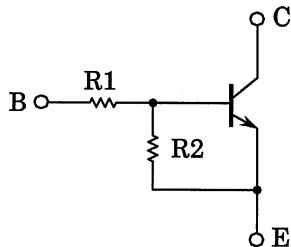
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

**RN1507, RN1508, RN1509**

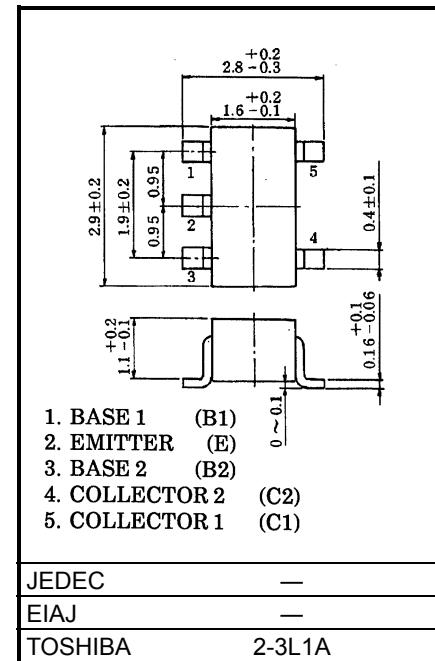
Unit: mm

Switching, Inverter Circuit, Interface Circuit  
And Driver Circuit Applications

- 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 RN2507~RN2509

**Equivalent Circuit and Bias Resistor Values**

Type No.	R1 (kΩ)	R2 (kΩ)
RN1907	10	47
RN1908	22	47
RN1909	47	22

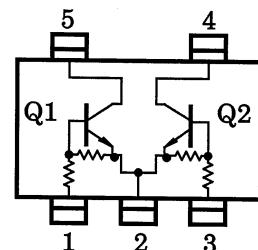


Weight: 0.014g

**Equivalent Circuit (Top View)****Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)**

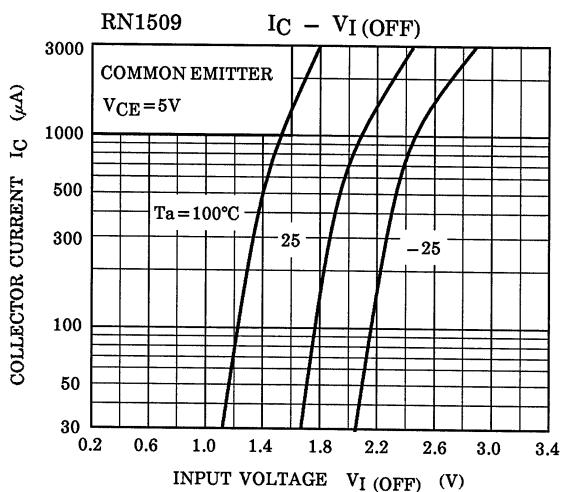
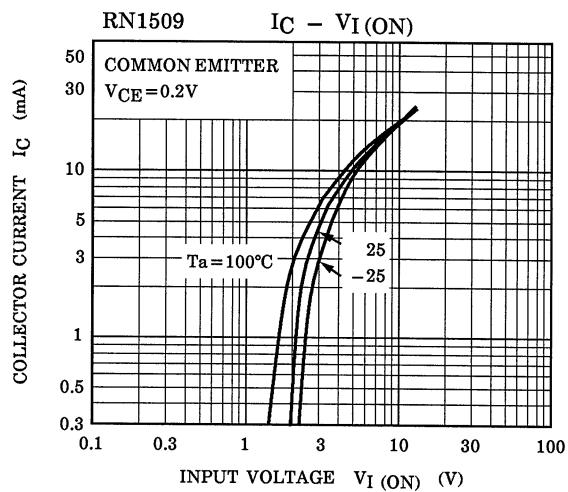
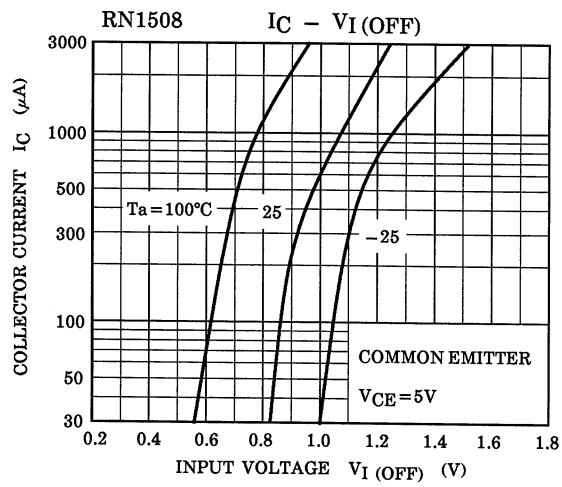
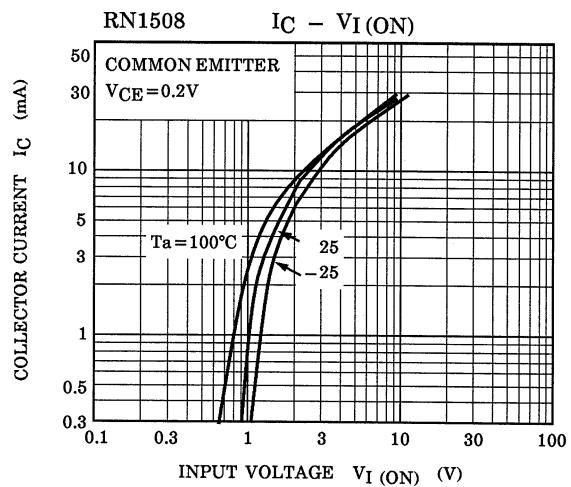
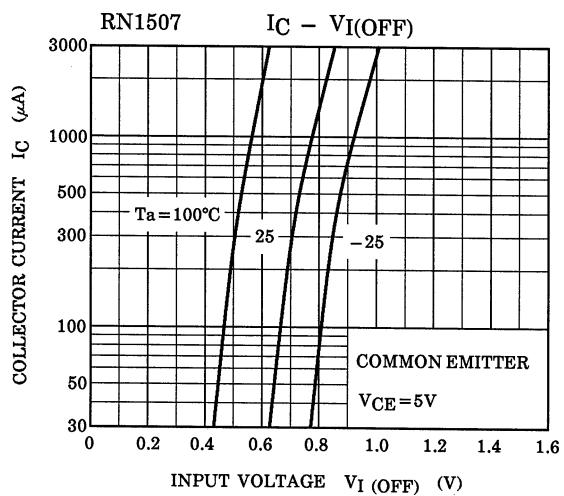
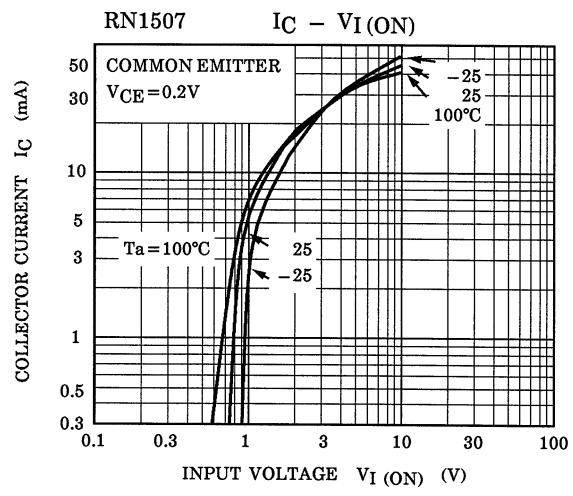
Characteristic		Symbol	Rating	Unit
Collector-base voltage	RN1507~1509	V <sub>CBO</sub>	50	V
Collector-emitter voltage		V <sub>CEO</sub>	50	V
Emitter-base voltage	RN1507	V <sub>EBO</sub>	6	V
			7	
			15	
Collector current	RN1507~1509	I <sub>C</sub>	100	mA
Collector power dissipation		P <sub>C</sub> *	300	mW
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	-55~150	°C

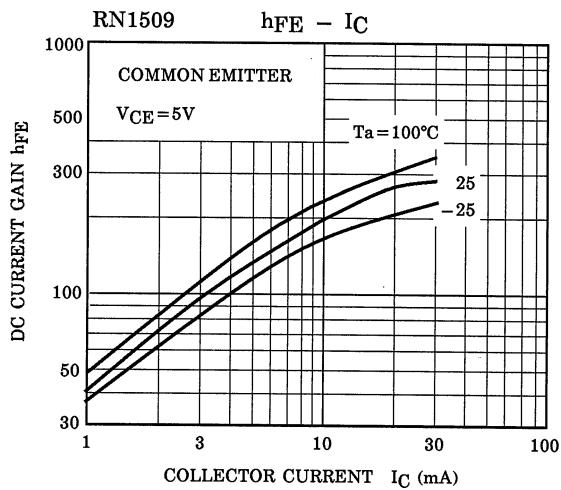
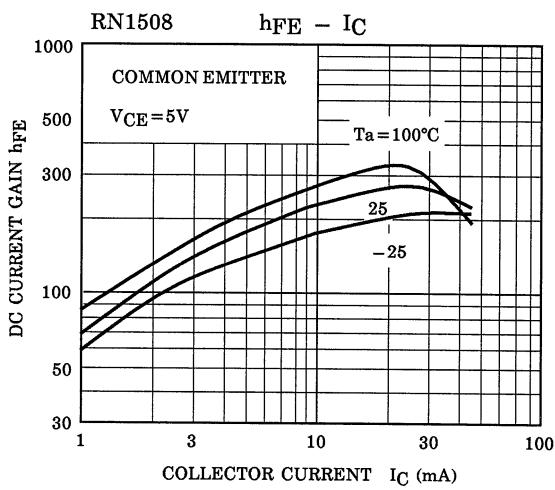
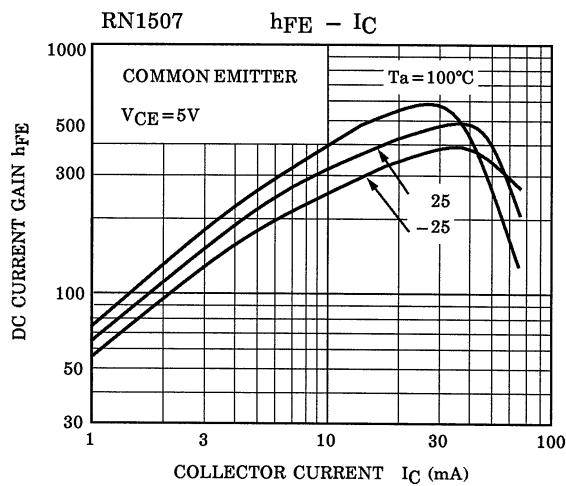
\* : Total rating

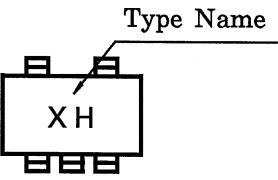
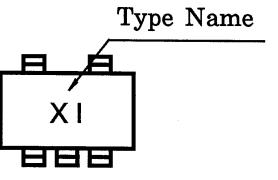
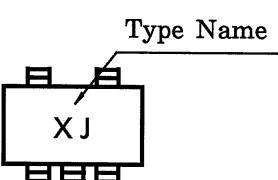


## Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN1507~1509	I <sub>CBO</sub>	—	V <sub>CB</sub> = 50V, I <sub>E</sub> = 0	—	—	100	nA
		I <sub>CEO</sub>		V <sub>CE</sub> = 50V, I <sub>B</sub> = 0	—	—	500	nA
Emitter cut-off current	RN1507	I <sub>EBO</sub>	—	V <sub>EB</sub> = 6V, I <sub>C</sub> = 0	0.081	—	0.15	mA
	RN1508			V <sub>EB</sub> = 7V, I <sub>C</sub> = 0	0.078	—	0.145	
	RN1509			V <sub>EB</sub> = 15V, I <sub>C</sub> = 0	0.167	—	0.311	
DC current gain	RN1507	h <sub>FE</sub>	—	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA	80	—	—	
	RN1508				80	—	—	
	RN1509				70	—	—	
Collector-emitter saturation voltage	RN1507~1509	V <sub>CE</sub> (sat)	—	I <sub>C</sub> = 5mA, I <sub>B</sub> = 0.25mA	—	0.1	0.3	V
Input voltage (ON)	RN1507	V <sub>I</sub> (ON)	—	V <sub>CE</sub> = 0.2V, I <sub>C</sub> = 5mA	0.7	—	1.8	V
	RN1508				1.0	—	2.6	
	RN1509				2.2	—	5.8	
Input voltage (OFF)	RN1507	V <sub>I</sub> (OFF)	—	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.1mA	0.5	—	1.0	V
	RN1508				0.6	—	1.16	
	RN1509				1.5	—	2.6	
Transition frequency	RN1507~1509	f <sub>T</sub>	—	V <sub>CE</sub> = 10V, I <sub>C</sub> = 5mA	—	250	—	MHz
Collector Output capacitance	RN1507~1509	C <sub>ob</sub>	—	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	—	3	6	pF
Input resistor	RN1507	R1	—		7	10	13	kΩ
	RN1508				15.4	22	28.6	
	RN1509				32.9	47	61.1	
Resistor ratio	RN1507	R1/R2	—		0.191	0.213	0.232	
	RN1508				0.421	0.468	0.515	
	RN1509				1.92	2.14	2.35	





Type Name	Marking
RN1507	
RN1508	
RN1509	

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