

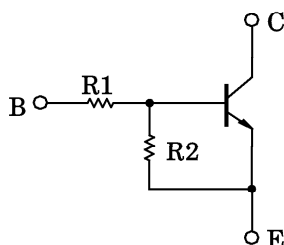
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN1207, RN1208, RN1209

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT AND DRIVER
CIRCUIT APPLICATIONS

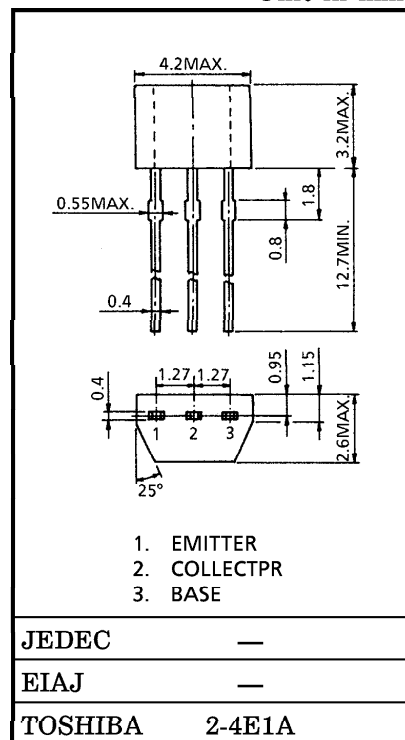
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN2207~RN2209

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



TYPE No.	R1 (kΩ)	R2 (kΩ)
RN2207	10	47
RN2208	22	47
RN2209	47	22

Unit in mm



Weight : 0.13g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	50	V
Collector-Emitter Voltage	V _{CE0}	50	V
Emitter-Base Voltage	V _{EBO}	6	V
		7	
		15	
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

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = 50V, I _E = 0	—	—	100	nA
		ICEO	V _{CE} = 50V, I _B = 0	—	—	500	
Emitter Cut-off Current	RN1207	I _{EBO}	V _{EB} = 6V, I _C = 0	0.081	—	0.15	mA
	RN1208		V _{EB} = 7V, I _C = 0	0.078	—	0.145	
	RN1209		V _{EB} = 15V, I _C = 0	0.167	—	0.311	
DC Current Gain	RN1207	h _{FE}	V _{CE} = 5V, I _C = 10mA	80	—	—	
	RN1208			80	—	—	
	RN1209			70	—	—	
Collector-Emitter Saturation Voltage		V _{CE (sat)}	I _C = 5mA, I _B = 0.25mA	—	0.1	0.3	V
Input Voltage (ON)	RN1207	V _{I (ON)}	V _{CE} = 0.2V, I _C = 5mA	0.7	—	1.8	V
	RN1208			1.0	—	2.6	
	RN1209			2.2	—	5.8	
Input Voltage (OFF)	RN1207	V _{I (OFF)}	V _{CE} = 5V, I _C = 0.1mA	0.5	—	1.0	V
	RN1208			0.6	—	1.16	
	RN1209			1.5	—	2.6	
Transition Frequency		f _T	V _{CE} = 10V, I _C = 5mA	—	250	—	MHz
Collector Output Capacitance		C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	3	6	pF
Input Resistor	RN1207	R1		7	10	13	kΩ
	RN1208			15.4	22	28.6	
	RN1209			32.9	47	61.1	
Resistor Ratio	RN1207	R1 / R2		0.191	0.213	0.232	
	RN1208			0.421	0.468	0.515	
	RN1209			1.92	2.14	2.35	

