TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN2907FE,RN2908FE,RN2909FE

Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications.

- Two devices are incorporated into an Extreme-Super-Mini (6 pin) package.
- Incorporating a bias resistor into a transistor reduces parts count. Reducing the parts count enable the manufacture of ever more compact equipment and save assembly cost.
- Complementary to RN1907FE~RN1909FE

Equivalent Circuit and Bias Resistor Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN2907FE	10	47
RN2908FE	22	47
RN2909FE	47	22



Weight: g (typ.)

Equivalent Circuit (top view)



Maximum Ratings (Ta = 25°C) (Q1, Q2 common)

Characteristics	Symbol	Rating	Unit		
Collector-base voltage	RN2907FE~	V _{CBO}	-50	V	
Collector-emitter voltage	RN2909FE	V _{CEO}	-50	V	
	RN2907FE		-6	V	
Emitter-base voltage	RN2908FE	V _{EBO}	-7		
	RN2909FE		-15		
Collector current		Ι _C	-100	mA	
Collector power dissipation	RN2907FE~	P _C (Note)	100	mW	
Junction temperature	RN2909FE	Tj	150	°C	
Storage temperature range		T _{stg}	-55~150	°C	

Note: Total rating

Unit: mm

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

Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	RN2907FE~2909FE	I _{CBO}	$V_{CB}=-50~V,~I_{E}=0$	_	_	-100	nA
		I _{CEO}	$V_{CE} = -50 \text{ V}, \text{ I}_{B} = 0$	_		-500	
Emitter cut-off current	RN2907FE	I _{EBO}	$V_{EB}=-6~V,~I_C=0$	-0.081	_	-0.15	mA
	RN2908FE		$V_{EB}=-7~V,~I_C=0$	-0.078		-0.145	
	RN2909FE		$V_{EB} = -15 \text{ V}, \ I_C = 0$	-0.167	_	-0.311	
	RN2907FE	h _{FE}	$V_{CE} = -5 V,$ $I_{C} = -10 \text{ mA}$	80	_	_	
DC current gain	RN2908FE			80			
	RN2909FE			70	_	_	
Collector-emitter saturation voltage	RN2907FE~2909FE	V _{CE (sat)}	$\begin{array}{l} I_C = -5 \text{ mA}, \\ I_B = -0.25 \text{ mA} \end{array}$	_	-0.1	-0.3	V
Input voltage (ON)	RN2907FE	V _{I (ON)}	$V_{CE} = -0.2 \text{ V},$ I _C = -5 mA	-0.7		-1.8	
	RN2908FE			-1.0		-2.6	V
	RN2909FE			-2.2		-5.8	
Input voltage (OFF)	RN2907FE	V _{I (OFF)}	$V_{CE} = -5 V,$ $I_{C} = -0.1 \text{ mA}$	-0.5	_	-1.0	
	RN2908FE			-0.6	_	-1.16	V
	RN2909FE			-1.5		-2.6	
Transition frequency	RN2907FE~2909FE	f _T	V _{CE} = -10 V, I _C = -5 mA	_	200		MHz
Collector output capacitance	RN2907FE~2909FE	C _{ob}	$\label{eq:VCB} \begin{array}{l} V_{CB} = -10 \ V, \ I_E = 0, \\ f = 1 \ MHz \end{array}$	_	3	6	pF
Input resistor	RN2907FE	R1	_	7	10	13	
	RN2908FE			15.4	22	28.6	kΩ
	RN2909FE			32.9	47	61.1	
Resistor ratio	RN2907FE	R1/R2	_	0.191	0.213	0.232	
	RN2908FE			0.421	0.468	0.515	
	RN2909FE			1.92	2.14	2.35	

Type Name	Marking
RN2907FE	Type name YH
RN2908FE	Type name
RN2909FE	Type name

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