

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

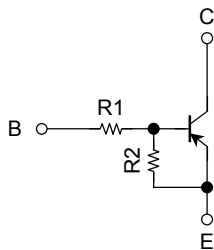
RN2107FT, RN2108FT, RN2109FT

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

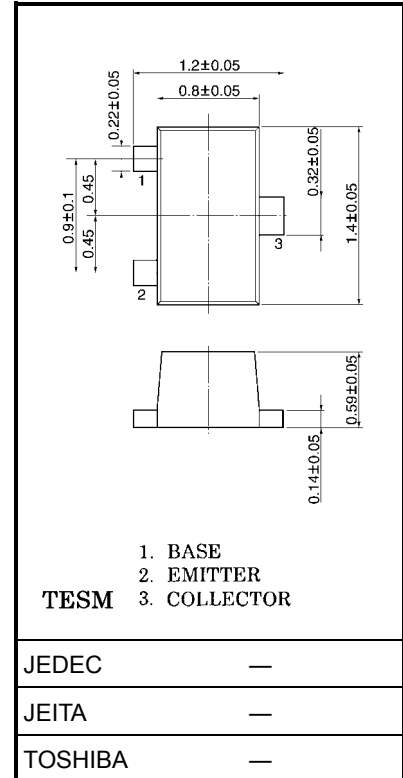
Unit: mm

- High-density mount is possible because of devices housed in very thin TESM packages.
- 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.
- Wide range of resistor values are available to use in various circuit designs.
- Complementary to RN1107FT, RN1108FT, RN1109FT

Equivalent Circuit and Bias Resistor Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN2107FT	10	47
RN2108FT	22	47
RN2109FT	47	22



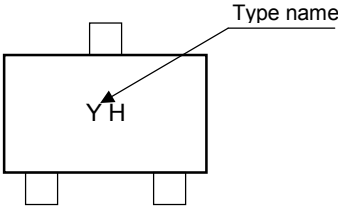
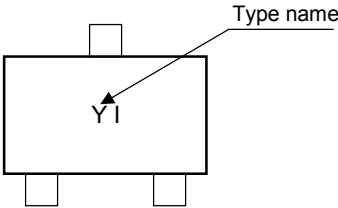
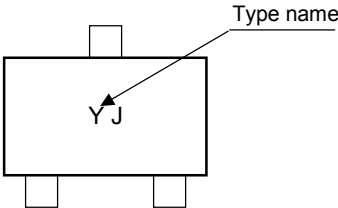
Maximum Ratings (Ta = 25°C)

Weight: g (typ.)

Characteristics		Symbol	Rating	Unit
Collector-base voltage	RN2107FT~2109FT	V _{CBO}	−50	V
Collector-emitter voltage		V _{CEO}	−50	V
Emitter-base voltage	RN2107FT	V _{EBO}	−6	V
	RN2108FT		−7	
	RN2109FT		−15	
Collector current	RN2107FT~2109FT	I _C	−100	mA
Collector power dissipation		P _C	100	mW
Junction temperature		T _J	150	°C
Storage temperature range		T _{stg}	−55~150	°C

Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	RN2107FT~2109FT	I_{CBO}	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-100	nA
		I_{CEO}	$V_{CE} = -50\text{ V}, I_B = 0$	—	—	-500	
Emitter cut-off current	RN2107FT	I_{EBO}	$V_{EB} = -6\text{ V}, I_C = 0$	-0.081	—	-0.15	mA
	RN2108FT		$V_{EB} = -7\text{ V}, I_C = 0$	-0.078	—	-0.145	
	RN2109FT		$V_{EB} = -15\text{ V}, I_C = 0$	-0.167	—	-0.311	
DC current gain	RN2107FT	h_{FE}	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$	80	—	—	
	RN2108FT			80	—	—	
	RN2109FT			70	—	—	
Collector-emitter saturation voltage	RN2107FT~2109FT	$V_{CE(sat)}$	$I_C = -5\text{ mA}, I_B = -0.25\text{ mA}$	—	-0.1	-0.3	V
Input voltage (ON)	RN2107FT	$V_{I(ON)}$	$V_{CE} = -0.2\text{ V}, I_C = -5\text{ mA}$	-0.7	—	-1.8	V
	RN2108FT			-1.0	—	-2.6	
	RN2109FT			-2.2	—	-5.8	
Input voltage (OFF)	RN2107FT	$V_{I(OFF)}$	$V_{CE} = -5\text{ V}, I_C = -0.1\text{ mA}$	-0.5	—	-1.0	V
	RN2108FT			-0.6	—	-1.16	
	RN2109FT			-1.5	—	-2.6	
Transition frequency	RN2107FT~2109FT	f_T	$V_{CE} = -10\text{ V}, I_C = -5\text{ mA}$	—	200	—	V
Collector output capacitance	RN2107FT~2109FT	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	3	6	pF
Input resistor	RN2107FT	R1	—	7	10	13	kΩ
	RN2108FT			15.4	22	28.6	
	RN2109FT			32.9	47	61.1	
Resistor ratio	RN2107FT	R1/R2	—	0.919	0.213	0.232	
	RN2108FT			0.421	0.468	0.515	
	RN2109FT			1.92	2.14	2.35	

Type Name	Marking
RN1107FT	 The diagram shows a rectangular component with a top pin and two bottom pins. Inside the rectangle, the characters 'YH' are printed. An arrow points from the text 'Type name' to the 'Y' character.
RN1108FT	 The diagram shows a rectangular component with a top pin and two bottom pins. Inside the rectangle, the characters 'YI' are printed. An arrow points from the text 'Type name' to the 'Y' character.
RN1109FT	 The diagram shows a rectangular component with a top pin and two bottom pins. Inside the rectangle, the characters 'YJ' are printed. An arrow points from the text 'Type name' to the 'Y' character.

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