

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

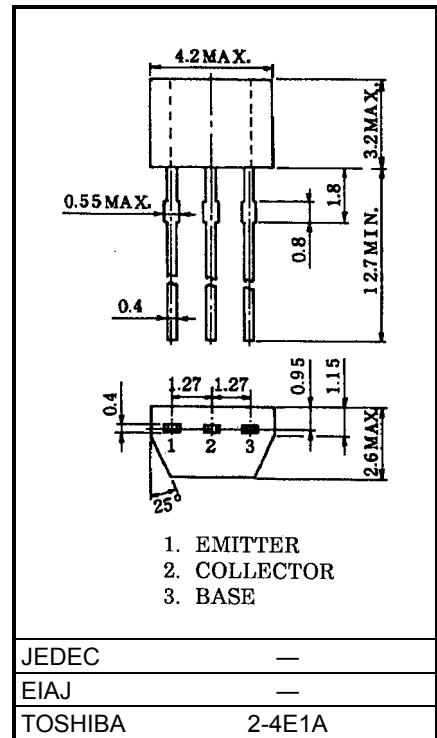
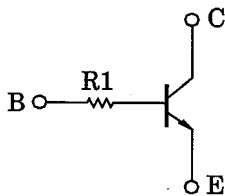
# RN1241, RN1242, RN1243, RN1244

For Muting and Switching Applications

Unit: mm

- High emitter-base voltage  
:  $V_{EBO} = 25\text{v (min)}$
- High reverse hfe  
: reverse  $h_{FE} = 150 \text{ (typ.) (} V_{CE} = -2\text{V, } I_C = -4\text{ma)}$
- Low on resistance  
:  $R_{ON} = 1\Omega \text{ (typ.) (} I_B = 5\text{mA)}$
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

## Equivalent Circuit



Weight: 0.13g

## Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	50	V
Collector-emitter voltage	$V_{CEO}$	20	V
Emitter-base voltage	$V_{EBO}$	25	V
Collector current	$I_C$	300	mA
Collector power dissipation	$P_C$	300	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C

## Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	—	$V_{CB} = 50V, I_E = 0$	—	—	0.1	$\mu A$
Emitter cut-off current		$I_{EBO}$	—	$V_{EB} = 25V, I_C = 0$	—	—	0.1	$\mu A$
DC current gain		$h_{FE}$ (Note)	—	$V_{CE} = 2V, I_C = 4mA$	200	—	1200	—
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	$I_C = 30mA, I_B = 3mA$	—	—	0.1	V
Transition frequency		$f_T$	—	$V_{CE} = 6V, I_C = 4mA$	—	30	—	MHz
Collector output capacitance		$C_{ob}$	—	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	4.8	—	pF
Input resistor	RN1241	R1	—	—	3.9	5.6	7.3	k $\Omega$
	RN1242		—		7	10	13	
	RN1243		—		15.4	22	28.6	
	RN1244		—		1.54	2.2	2.86	

Note: hEE Classification A: 200~700 B: 350~1200

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