

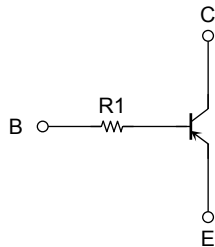
TOSHIBA Transistor    Silicon PNP Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN2972CT, RN2973CT

Switching, Inverter Circuit, Interface Circuit and  
Driver Circuit Applications

- Two devices are incorporated into a fine pitch Small Mold (6pin) 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 RN1972CT and RN1973CT

Equivalent Circuit



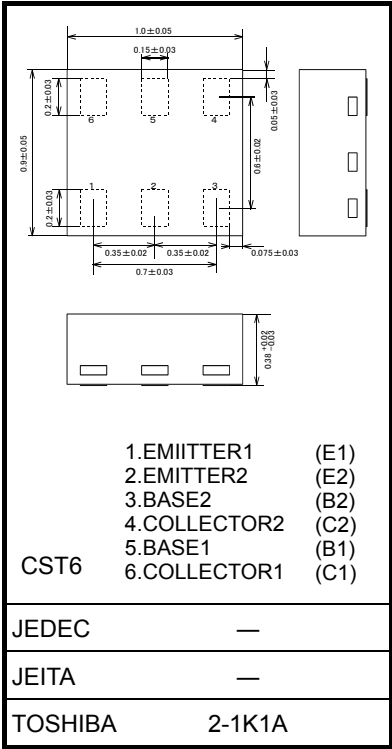
Absolute Maximum Ratings (Ta = 25°C)  
(Q1, Q2 common)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-20	V
Collector-emitter voltage	$V_{CEO}$	-20	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-50	mA
Collector power dissipation	$P_C^*$	50	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55 to 150	°C

Note \*: Total rating

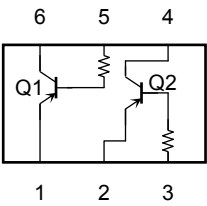
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.  
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm



Weight: 1.0 mg (typ.)

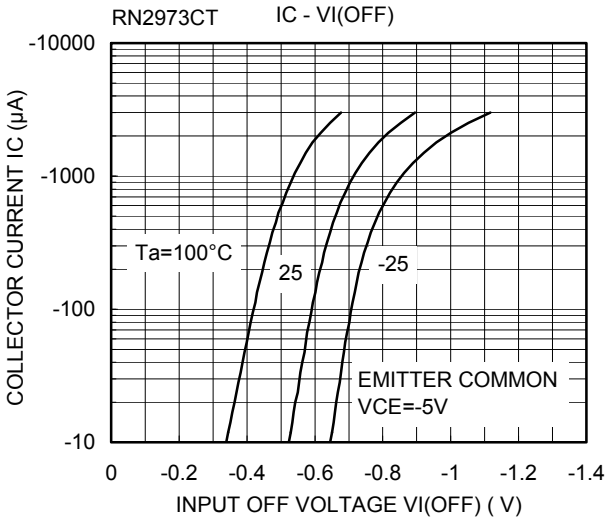
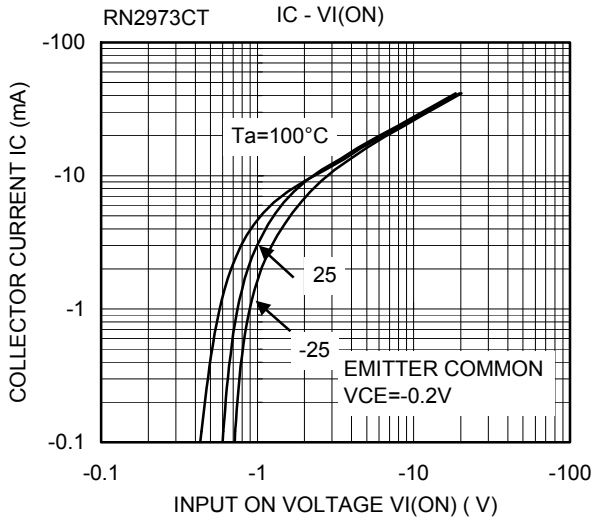
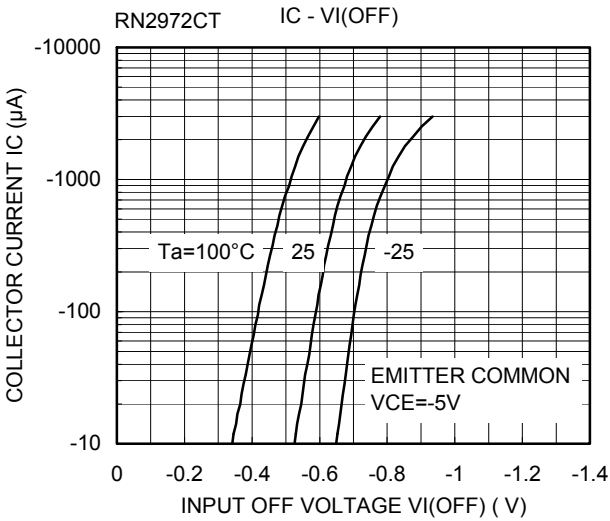
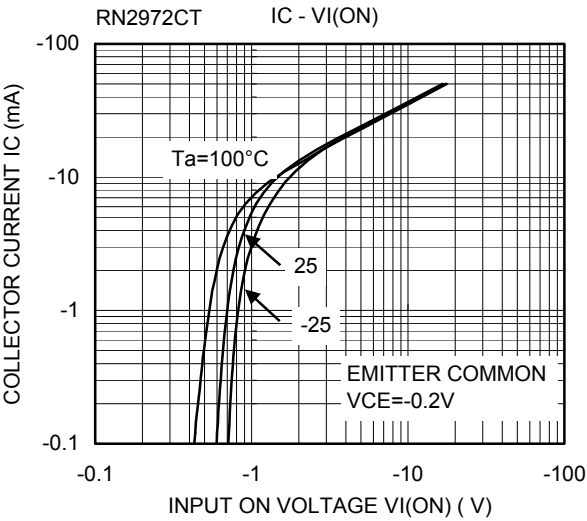
Equivalent Circuit  
(top view)



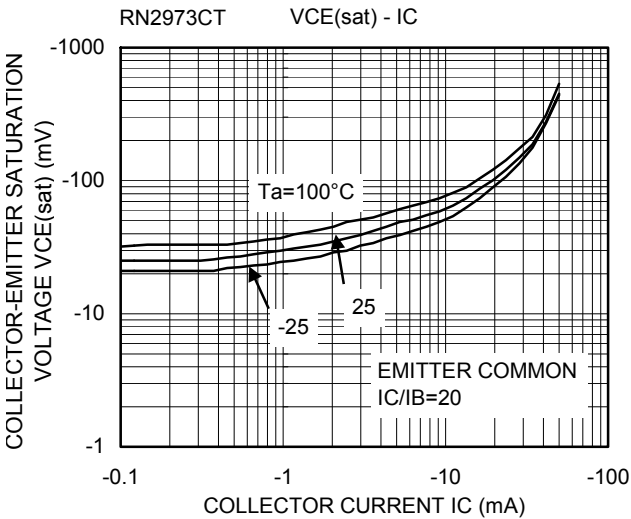
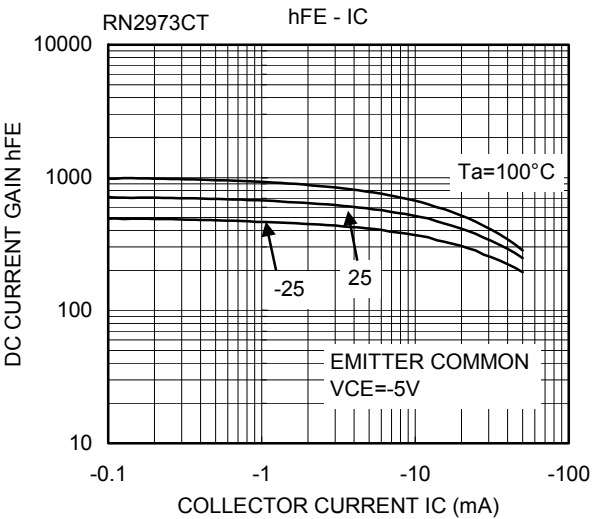
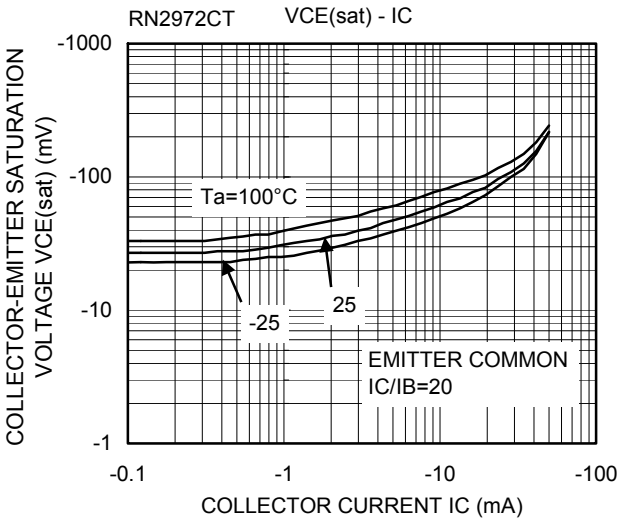
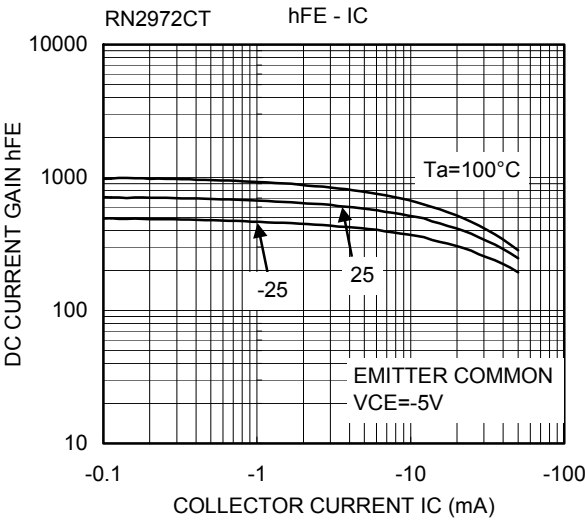
**Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)**

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = -20\text{ V}, I_E = 0$	—	—	-100	nA
Emitter cut-off current		$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-100	nA
DC current gain		$h_{FE}$	$V_{CE} = -5\text{ V}, I_C = -1\text{ mA}$	300	—	—	—
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -5\text{ mA}, I_B = -0.25\text{ mA}$	—	—	-0.15	V
Collector output capacitance		$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	1.2	—	pF
Input resistor	RN2972CT	R1	—	17.6	22	26.4	kΩ
	RN2973CT			37.6	47	56.4	

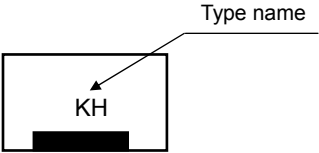
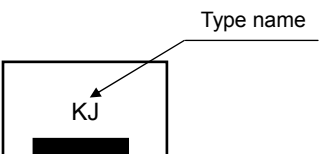
(Q1, Q2 common)



(Q1, Q2 common)



**Marking**

Type Name	Marking
RN2972CT	 <p>The diagram shows a rectangular marking area with a solid black rectangle at the bottom. The letters 'KH' are printed above the black rectangle. An arrow points from the text 'Type name' to the 'KH' marking.</p>
RN2973CT	 <p>The diagram shows a rectangular marking area with a solid black rectangle at the bottom. The letters 'KJ' are printed above the black rectangle. An arrow points from the text 'Type name' to the 'KJ' marking.</p>

**Handling Precaution**

When handling individual devices (which are not yet mounted on a circuit board), be sure that the environment is protected against electrostatic electricity. Operators should wear anti-static clothing, and containers and other objects that come into direct contact with devices should be made of anti-static materials.

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