Unit: mm

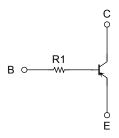
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor Built-in Transistor)

RN2710JE, RN2711JE

Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications

- Two devices are incorporated into an Extreme-Super-Mini (5-pin) package.
- · Incorporating a bias resistor into a transistor reduces parts count.
- Reducing the parts count enables the manufacture of ever more compact equipment and lowers assembly cost.
- A wide range of resistor values are available for use in various circuit designs.
- Complementary to RN1710JE, RN1711JE

Equivalent Circuit



1.6±0.05 1.2±0.05 1.6±0.05 0.2 ± 0.05 0.12±0.05 (B1) 1 BASF1 2.EMITTER (F) 3.BASE2 (B2)4.COLLECTOR2 (C2) ESV 5.COLLECTOR1 (C1) JEDEC JEITA **TOSHIBA** 2-2P1D

Weight: 0.003g (typ.)

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

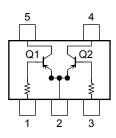
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V _{CEO}	-50	V
Emitter-base voltage	V _{EBO}	-5	V
Collector current	Ic	-100	mA
Collector power dissipation	P _C (Note 1)	100	mW
Junction temperature	Tj	150	°C
Storage temperature range	T _{stg}	–55 to 150	°C

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

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).

Note 1: Total rating

Equivalent Circuit (top view)



Start of commercial production 2000-06

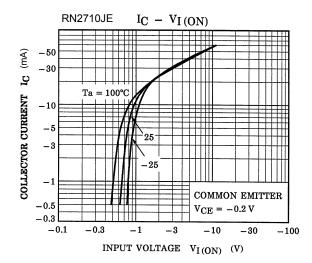


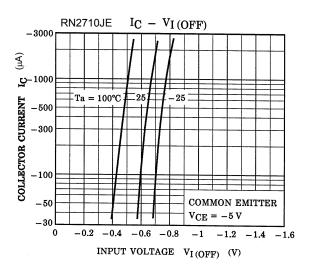
Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

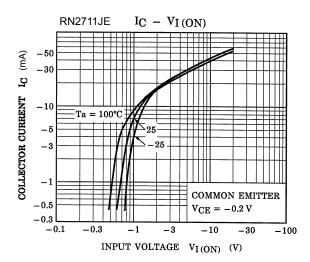
Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current		I _{CBO}	$V_{CB} = -50 \text{ V}, I_E = 0$	_	_	-100	nA
Emitter cut-off current		I _{EBO}	$V_{EB} = -5 \text{ V}, I_{C} = 0$	_	_	-100	nA
DC current gain		h _{FE}	$V_{CE} = -5 \text{ V}, I_{C} = -1 \text{ mA}$	120	_	400	
Collector-emitter saturation voltage		V _{CE} (sat)	$I_C = -5 \text{ mA}, I_B = -0.25 \text{ mA}$	_	-0.1	-0.3	V
Transition frequency		f _T	$V_{CE} = -10 \text{ V}, I_{C} = -5 \text{ mA}$	_	200	_	MHz
Collector output capacitance		C _{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	_	3	6	pF
Input resistor	RN2710JE	- R1	_	3.29	4.7	6.11	kΩ
	RN2711JE			7	10	13	

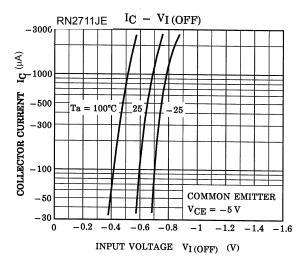
2

Q1, Q2 Common





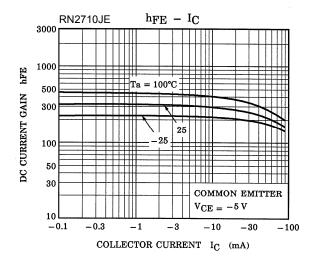


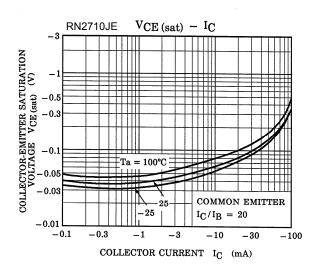


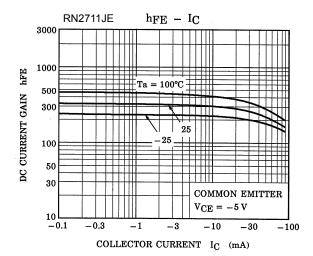
3

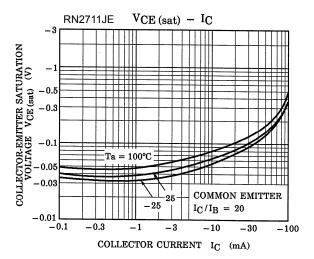


Q1, Q2 Common









Type Name	Marking
RN2710JE	Type name YK
RN2711JE	Type name Y M

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