1.6±0.05 1.2±0.05

0.5 1.0±0.05

2 0.5

1. EMITTER 1

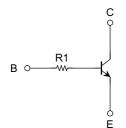
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN1970FE, RN1971FE

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

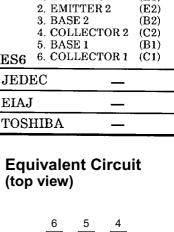
- Two devices are incorporated into an Extreme-Super-Mini (6 pin) package.
- Incorporating a bias resistor into a transistor reduces parts count. Reducing the parts count enable the manufacture of ever more compact equipment and save assembly cost.
- Complementary to RN2970FE, RN2971FE

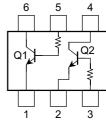
Equivalent Circuit and Bias Resistor Values



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	Ι _C	100	mA
Collector power dissipation	P _C (Note)	100	mW
Junction temperature	Tj	150	°C
Storage temperature range	T _{stg}	-55~150	°C





Note: Total rating

000707EAA1

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The information contained herein is subject to change without notice.

Unit in mm

1.6±0.05 02

55±0.

0.12±0.05

(E1)

0.2±0. 5

6

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

Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current		I _{CBO}	$V_{CB}=50~V,~I_{E}=0$	_	_	100	nA
Emitter cut-off current		I _{EBO}	$V_{EB} = 5 V, I_{C} = 0$	_		100	nA
DC current gain		h _{FE}	$V_{CE} = 5 \text{ V}, \text{ I}_{C} = 1 \text{ mA}$	120		700	
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		fT	$V_{CE} = 10 \text{ V}, \text{ I}_{C} = 5 \text{ mA}$	_	250	_	MHz
Collector output capacitance		C _{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	_	3	6	pF
Input resistor	RN1970FE	- R1	_	3.29	4.7	6.11	kΩ
	RN1971FE			7	10	13	

