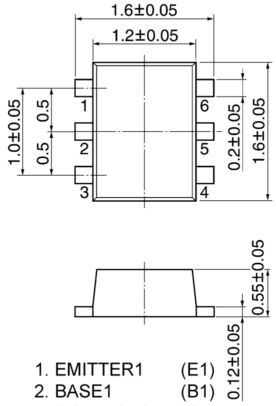
TOSHIBA Transistor Silicon PNP·NPN Epitaxial Type
(PCT Process) (Bias Resistor Built-in Transistor)

RN4911FE

Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications

Unit: mm



1. EMITTER1 (E1)
2. BASE1 (B1)
3. COLLECTOR2 (C2)
4. EMITTER2 (E2)
5. BASE2 (B2)
6. COLLECTOR1 (C1)

ES6

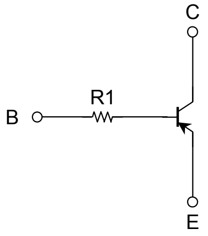
JEDEC	—
JEITA	—
TOSHIBA	2-2N1G

Weight: 0003 g (typ.)

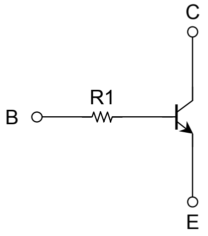
- Two devices are incorporated into an Extreme-Super-Mini (6-pin) package.
- Incorporating a bias resistor into a transistor reduces parts count. Reducing the parts count enables the manufacture of ever more compact equipment and lowers assembly cost.

Equivalent Circuit and Bias Resistor Values

Q1



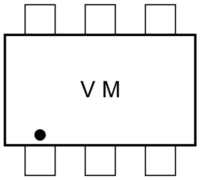
Q2



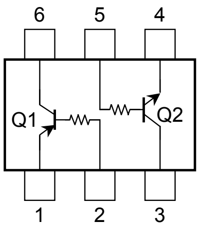
R1: 10 kΩ

(Q1, Q2 common)

Marking



Equivalent Circuit (top view)



Maximum Ratings (Ta = 25°C) (Q1)

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	I_C	−100	mA

Maximum Ratings (Ta = 25°C) (Q2)

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	I_C	100	mA

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

Characteristics	Symbol	Rating	Unit
Collector power dissipation	P_C (Note)	100	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55~150	°C

Note: Total rating

Electrical Characteristics (Ta = 25°C) (Q1)

Characteristics	Symbol	Test Condition	Min	Typ.	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}	$V_{CE} = -5$ V, $I_C = -1$ mA	120	—	400	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	$I_C = -5$ mA, $I_B = -0.25$ mA	—	−0.1	−0.3	V
Transition frequency	f_T	$V_{CE} = -10$ V, $I_C = -5$ mA	—	200	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz	—	3	6	pF

Electrical Characteristics (Ta = 25°C) (Q2)

Characteristics	Symbol	Test Condition	Min	Typ.	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}	$V_{CE} = 5$ V, $I_C = 1$ mA	120	—	700	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	$I_C = 5$ mA, $I_B = 0.25$ mA	—	0.1	0.3	V
Transition frequency	f_T	$V_{CE} = 10$ V, $I_C = 5$ mA	—	250	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10$ V, $I_E = 0$, f = 1 MHz	—	3	6	pF

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

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Input resistor	R1	—	7	10	13	kΩ