

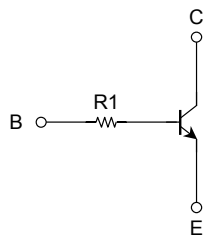
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN2112FT,RN2113FT

Switching, Inverter Circuit, Interface Circuit and
Driver Circuit Applications

- High-density mount is possible because of devices housed in very thin TESH packages.
- 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.
- Wide range of resistor values are available to use in various circuit designs.
- Complementary to RN1112FT, RN1113FT

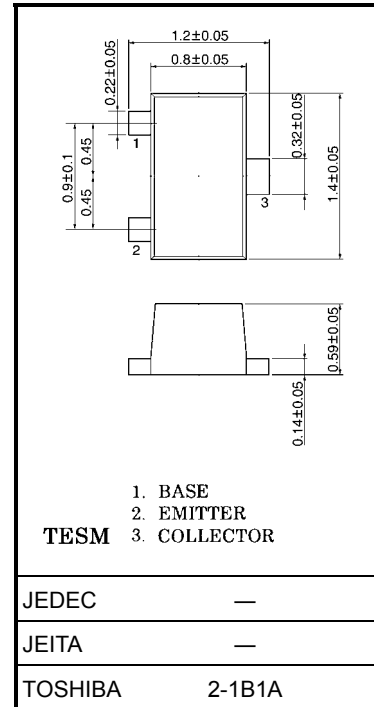
Equivalent Circuit and Bias Resistor Values



Maximum Ratings (Ta = 25°C)

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
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55~150	°C

Unit: mm



Weight: 0.0022 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	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	—	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		f_T	$V_{CE} = -10 \text{ V}, I_C = -5 \text{ mA}$	—	250	—	MHz
Collector output capacitance		C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	3	6	pF
Input resistor	RN2112FT	R1	—	15.4	22	28.6	kΩ
	RN2113FT			32.9	47	61.1	

