

NPN Bias Resistor Transistor

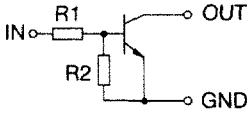
The built-in bias resistor allows inverter circuit configuration without external resistors for input.

Pin configuration

- 1 = Collector/OUT
- 2 = Base/IN
- 3 = Emitter/GND

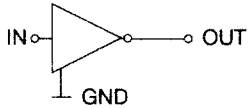
Marking

DC4

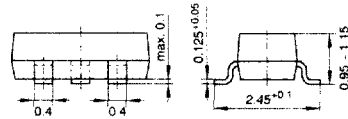
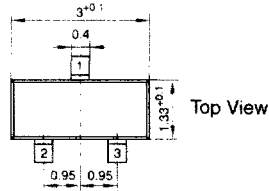


R1 = 22 kΩ

R2 = 47 kΩ



Equivalent circuit



SOT-23 Plastic Package

Weight approx. 0.008 g
Dimensions in mm

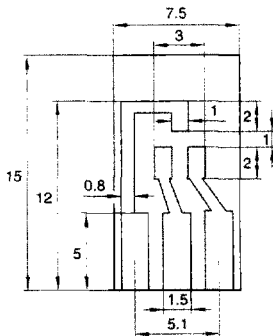
Absolute Maximum Ratings

	Symbol	Value	Unit
Supply Voltage	V _{SUP}	50	V
Input Voltage	V _I	40	V
	-V _I	10	V
Collector Current	I _C	100	mA
Peak Collector Current	I _{CM}	100	mA
Power Dissipation	P _{tot}	300 ¹⁾	mW
Junction Temperature	T _J	125	°C
Storage Temperature Range	T _S	-65 to +125	°C

¹⁾ Device on fiberglass substrate, see layout

Characteristics at $T_{amb} = 25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
Input OFF Voltage at $V_{SUP} = 5\text{ V}$, $I_O = 100\text{ }\mu\text{A}$	$V_{I(OFF)}$	-	-	0.4	V
Input ON Voltage at $V_O = 0.3\text{ V}$, $I_O = 2\text{ mA}$	$V_{I(ON)}$	2.5	-	-	V
Output ON Voltage at $I_O = 10\text{ mA}$, $I_I = 0.5\text{ mA}$	$V_{O(ON)}$	-	0.1	0.3	V
Input Current at $V_I = 0.5\text{ V}$	I_I	-	-	0.36	mA
Output OFF Current at $V_{SUP} = 30\text{ V}$, $V_I = 0\text{ V}$	$I_{O(OFF)}$	-	-	10	μA
DC Current Gain at $I_O = 5\text{ mA}$, $V_O = 5\text{ V}$	G_I	68	-	-	-
Input Resistance	R_I	-	22	-	k Ω
Resistance Ratio	R_2/R_1	1.7	2.1	2.6	-
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_E = -5\text{ mA}$	f_T	-	250	-	MHz
Collector-Base Capacitance at $V_{CB} = 10\text{ V}$, $I_E = 0\text{ mA}$, $f = 1\text{ MHz}$	C_{ob}	-	4.3	-	pF
Switching Times at $V_{SUP} = 5\text{ V}$, $V_I = 5\text{ V}$, $R_L = 1\text{ k}\Omega$					
Rise Time	t_r	-	0.12	-	μs
Storage Time	t_s	-	2.0	-	μs
Fall Time	t_f	-	0.35	-	μs

Layout for R_{thA} test

Thickness: Fiberglass 1.5 mm

Copper leads 0.3 mm