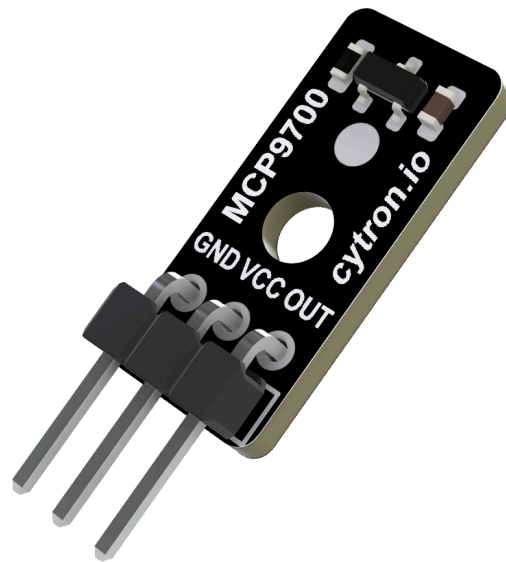




BCY-TEMP-MCP9700

Linear Temperature Sensor



Datasheet

Rev 1.0
August 2023

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1. BOARD LAYOUT & FUNCTION

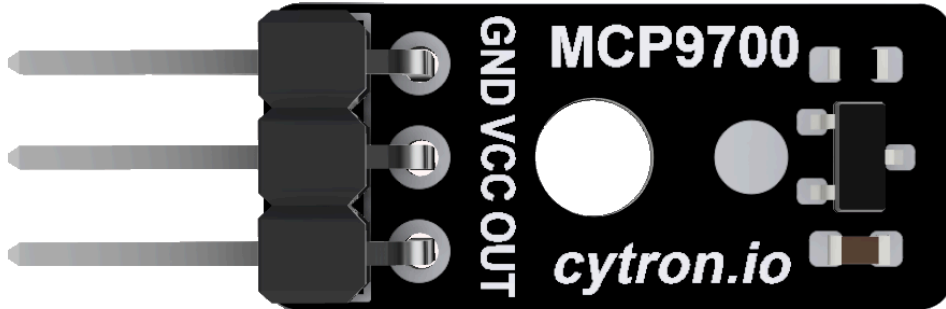


Figure 1: BCY-TEMP-MCP9700 Front View.

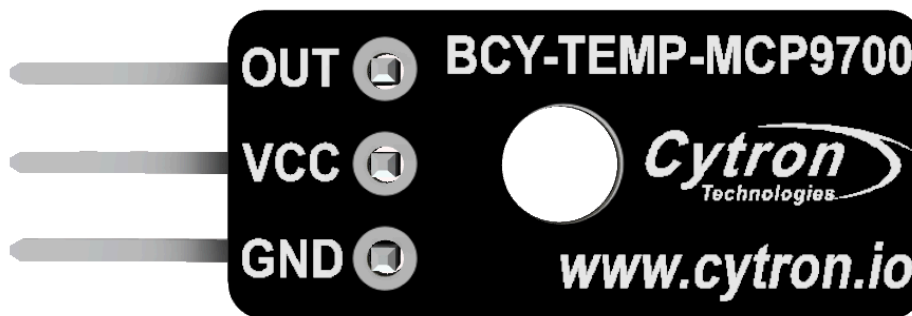


Figure 2: BCY-TEMP-MCP9700 Back View.

Pin	Description
GND	Ground.
VCC	Power input for the sensor. (2.3 - 5.5 V)
OUT	Analog Output. (10.0 mV/°C)

Table 1: BCY-TEMP-MCP9700 Pins.

2. SPECIFICATIONS

No	Parameters	Min	Typ.	Max	Unit
1	VCC Voltage (VCC)	2.3	-	5.5	VDC
2	Sensor Output Voltage (V_{OUT})	100	-	2000	mV
3	Output Voltage, $T_A = 0^{\circ}\text{C}$	-	500	-	mV
4	Temperature Coefficient, T_C	-	10	-	mV/ $^{\circ}\text{C}$
5	Temperature Range	-40	-	+150	$^{\circ}\text{C}$
6	Current Consumption	-	6	12	μA
7	Output Current	-	-	100	μA

Table 2: BCY-TEMP-MCP9700 Absolute Ratings.

3. EQUATION

Equation to convert the output voltage value to temperature ($^{\circ}\text{C}$):

$$T_A = \frac{V_{OUT} - V_{0^{\circ}\text{C}}}{T_C}$$

Where:

T_A = Ambient Temperature ($^{\circ}\text{C}$)

V_{OUT} = Sensor Output Voltage (mV)

$V_{0^{\circ}\text{C}}$ = Sensor Output Voltage at 0°C (500 mV)

T_C = Temperature Coefficient (10 mV/ $^{\circ}\text{C}$)

4. DIMENSION

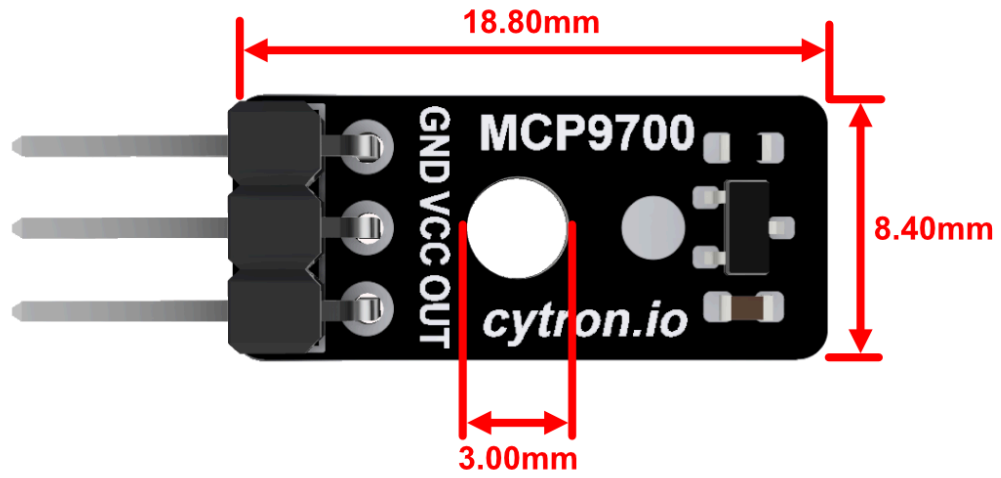


Figure 3: BCY-TEMP-MCP9700 Dimension.

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