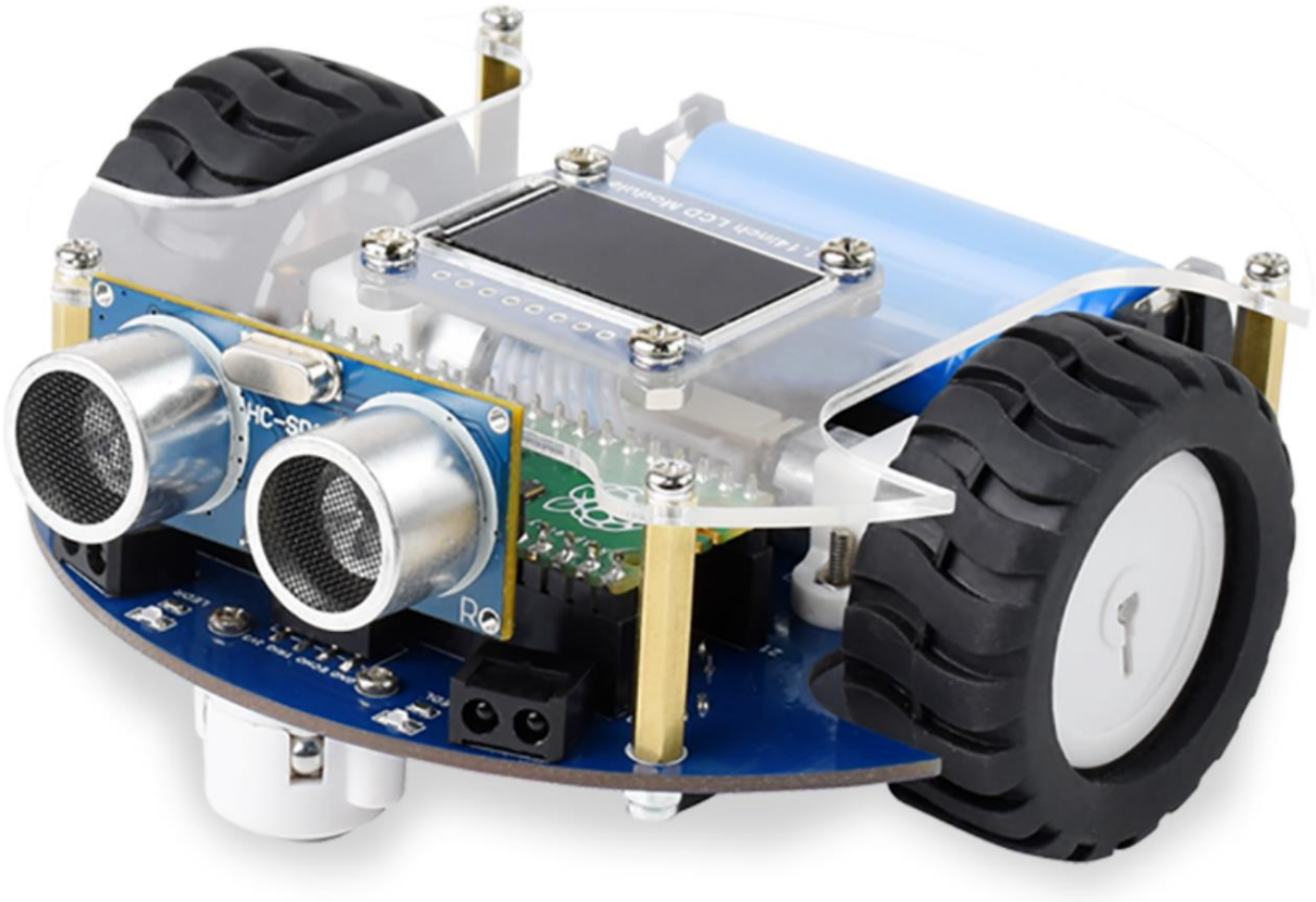
Raspberry Pi PICO

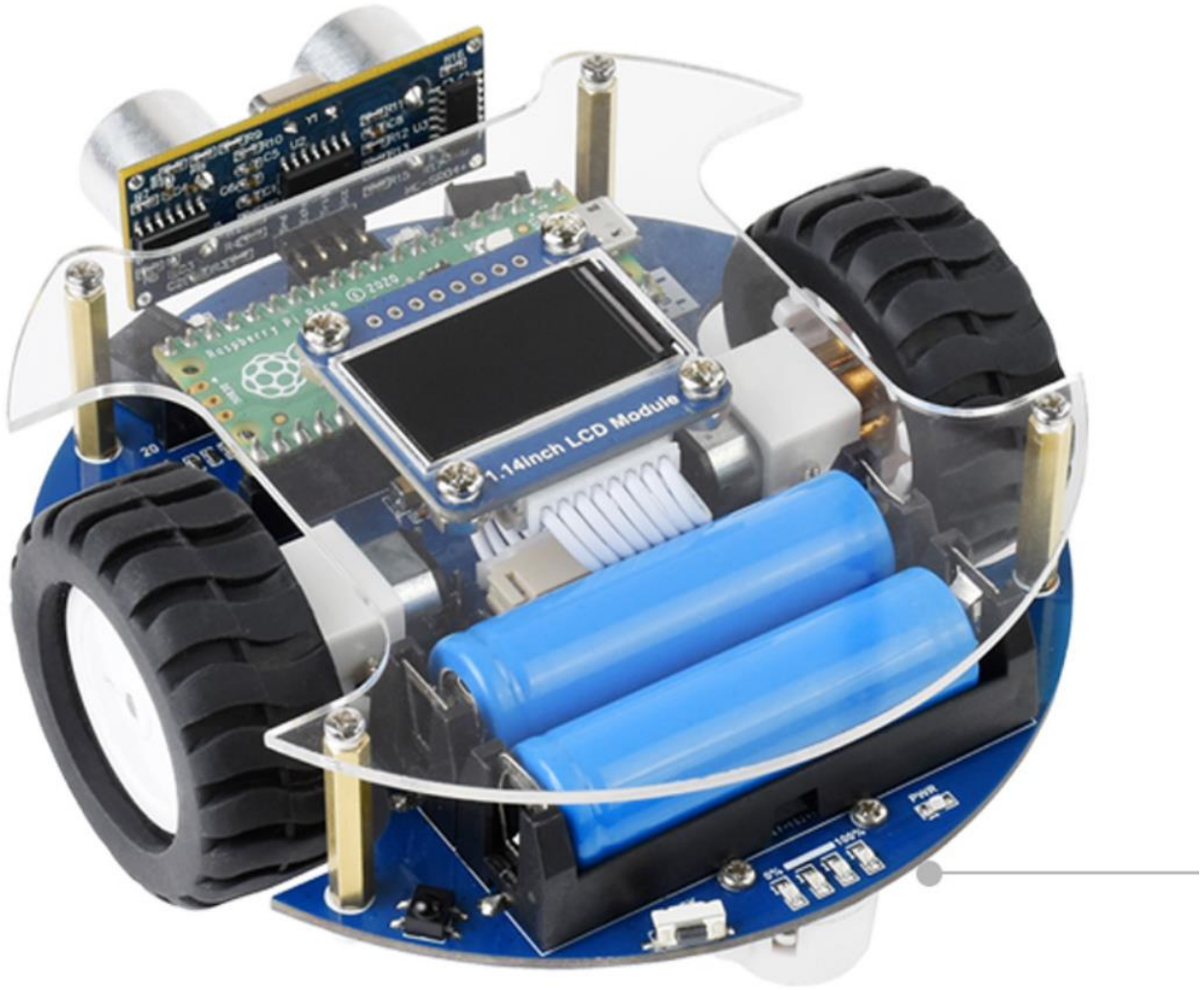
PicoGo 모바일 로봇 키트

- https://ko.aliexpress.com/item/1005003065889814.html

PICO 를 이용한 마우스



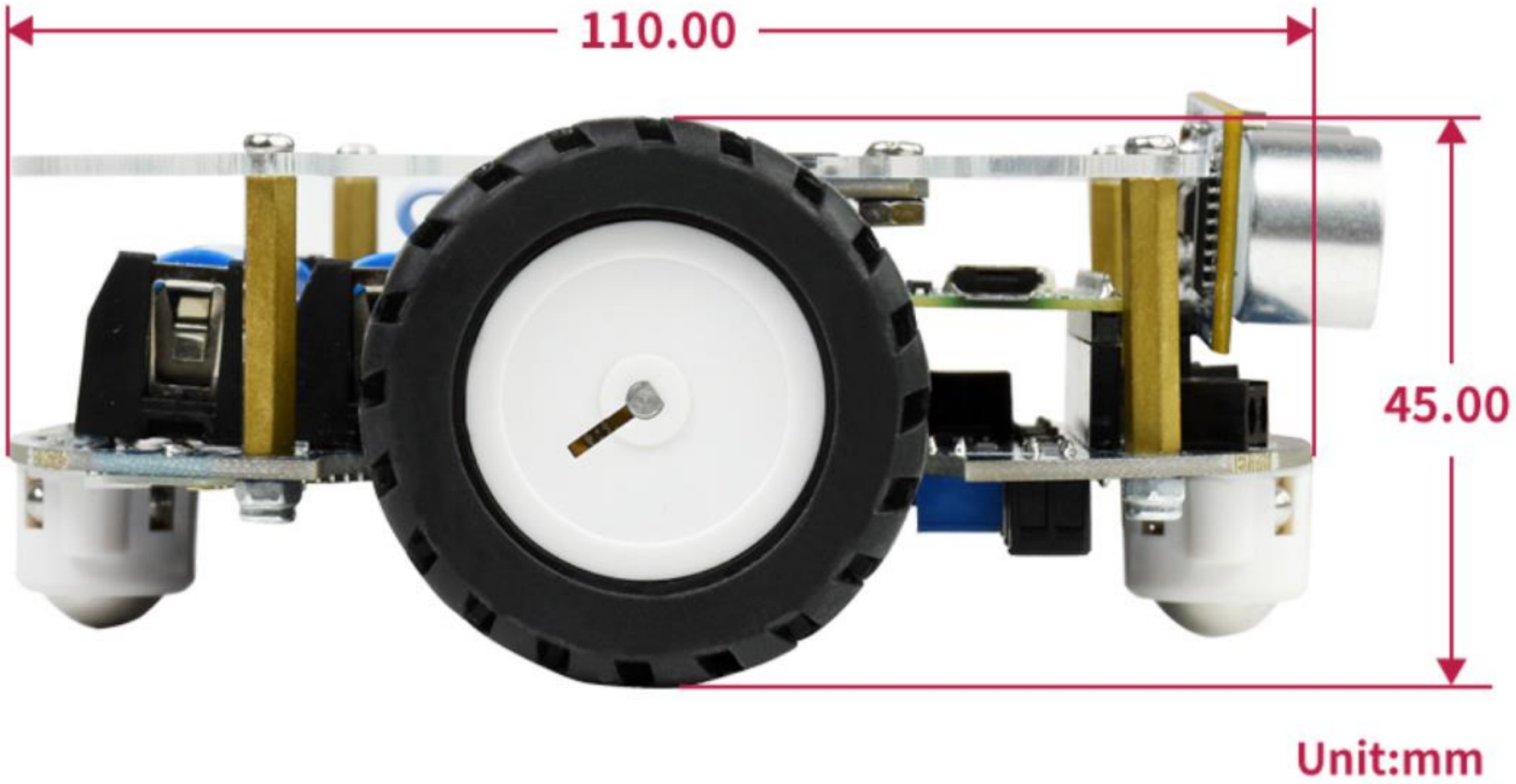
윗면

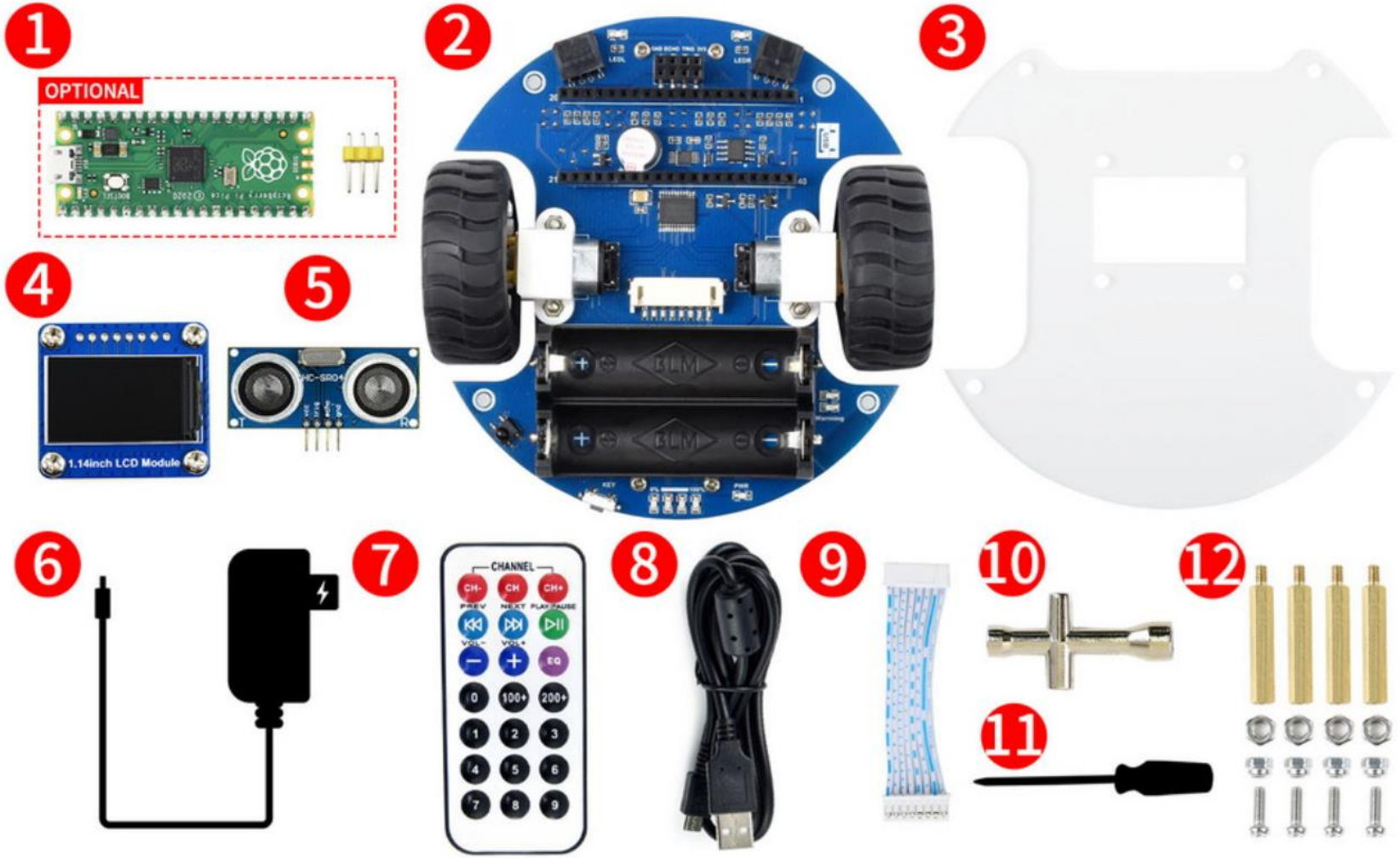


부품구성

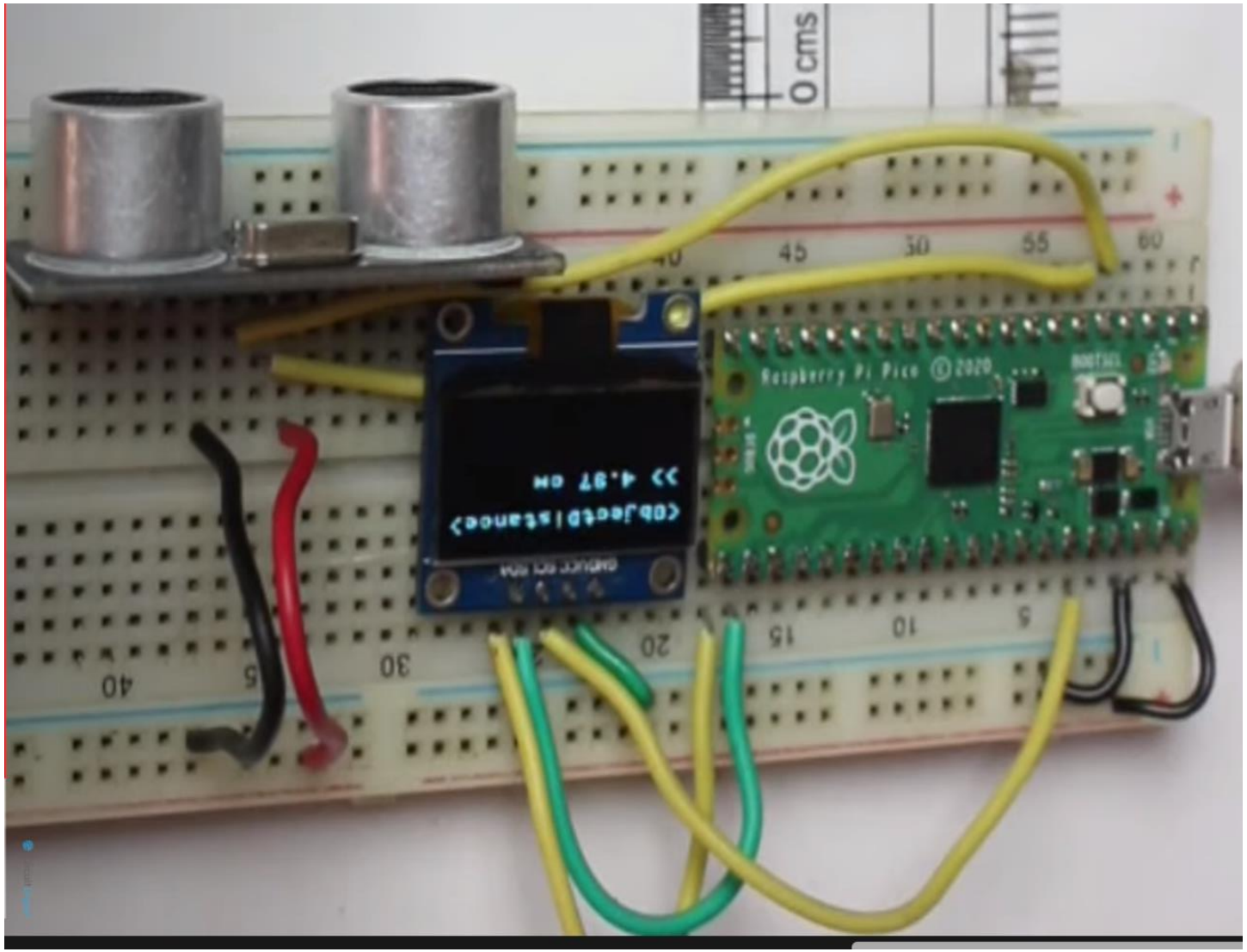

IR4
Line Following
Obstacle Avoidance
HC-SR04
Ultrasonic
1.44inch LCD Module
LCD Display
LED1
LED2
Bluetooth Module
LED4
LED3
RGB LED
Motor/Wheel

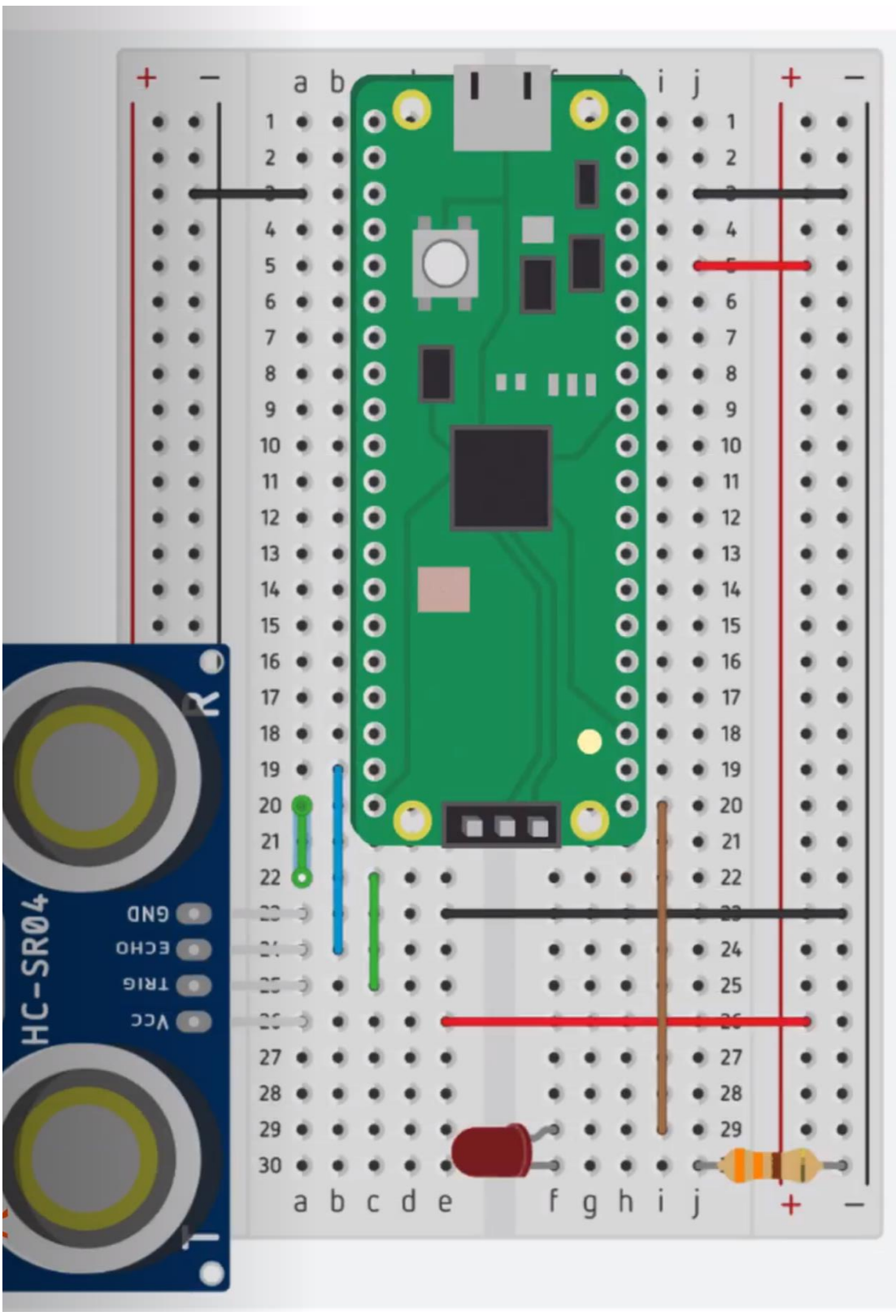

1.14inch LCD Module
LED: 开
状态

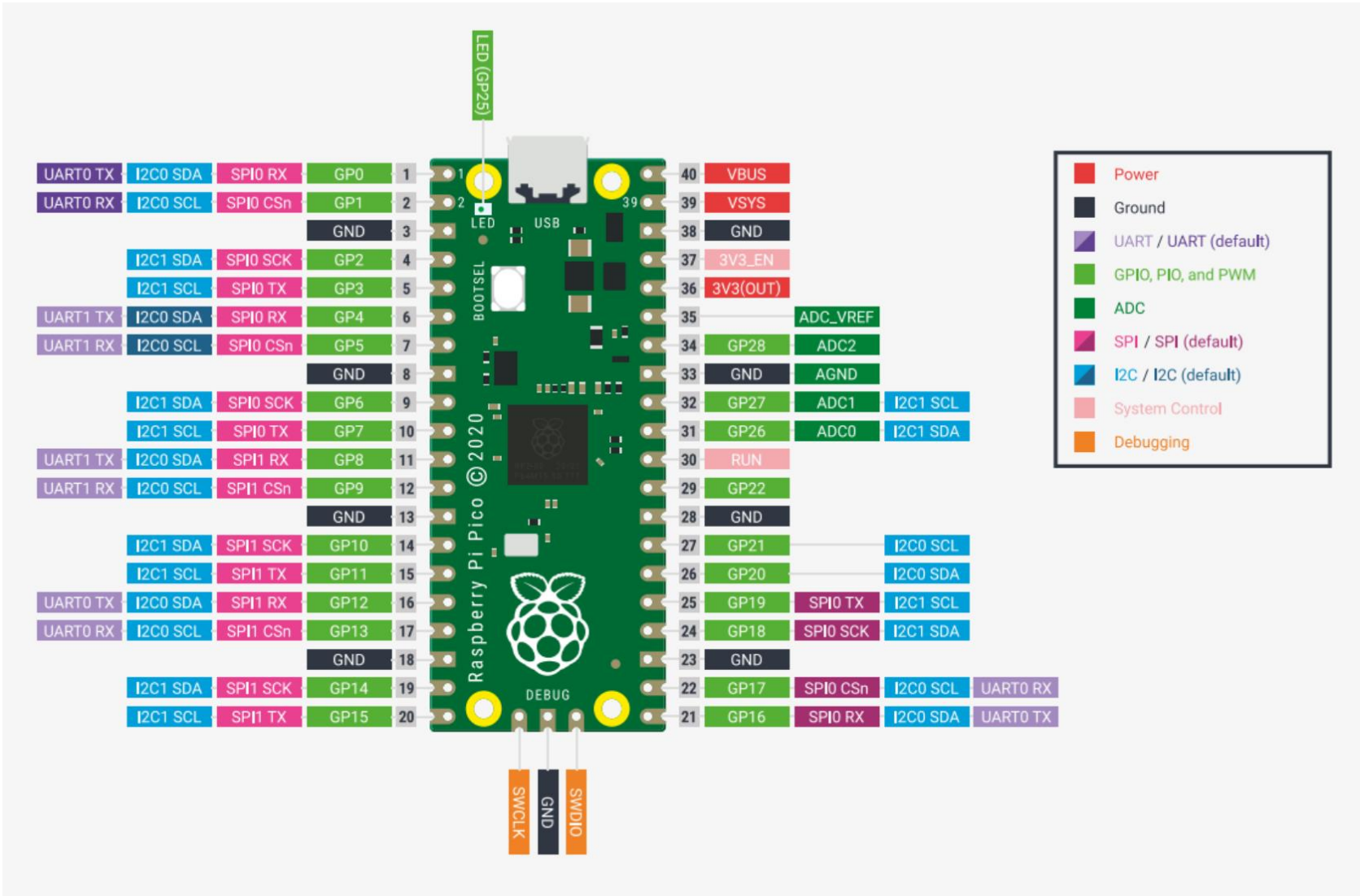

110.00
45.00
Unit:mm


1
OPTIONAL
2
3
4
1.14inch LCD Module
5
6
7
CHANNEL
CH-
CH
CH+
PREV
NEXT
PLAY/PAUSE
VOL-
VOL+
EQ
100+
200+
8
9
10
11
12

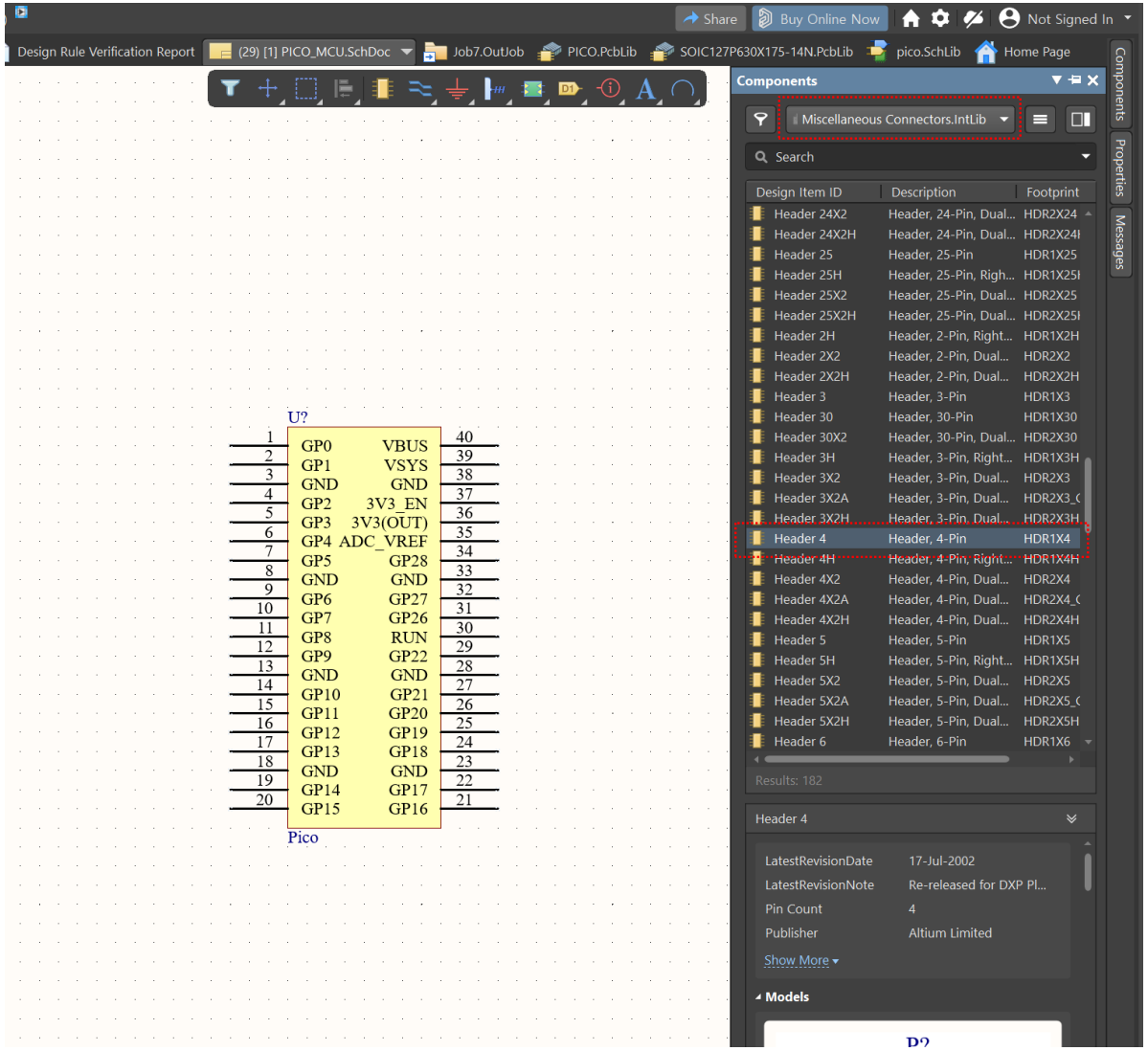

PICOGO
PWR SWITCH

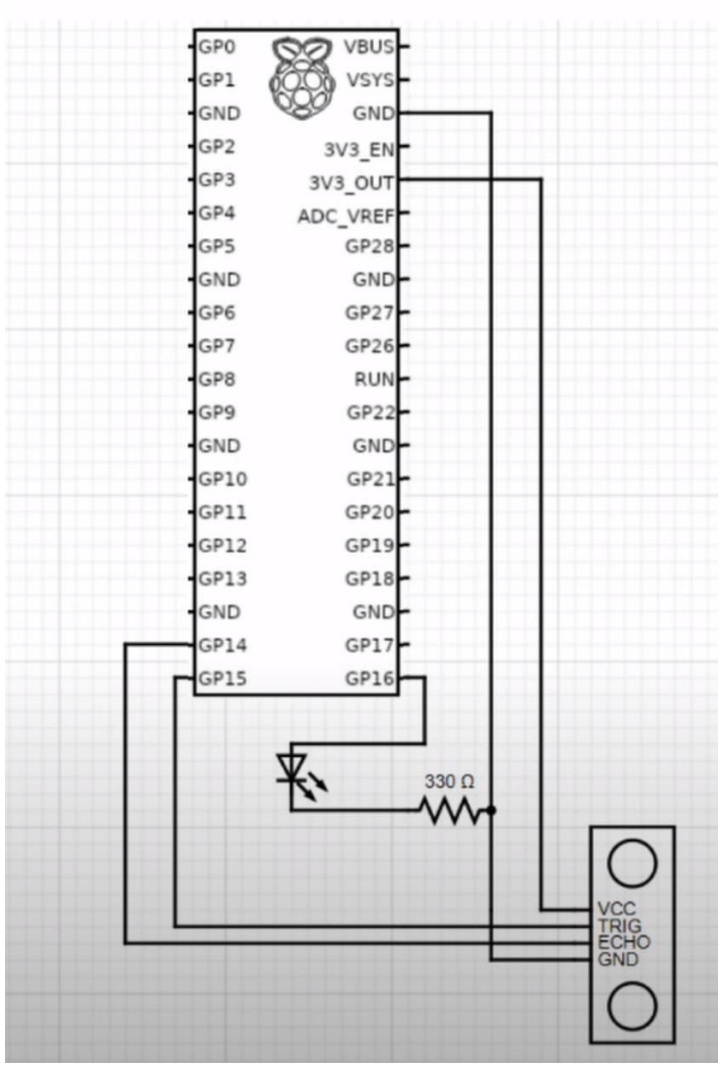

0 cms
Raspberry Pi Pico ©2020


HC-SR04
GND
ECHO
TRIG
VCC

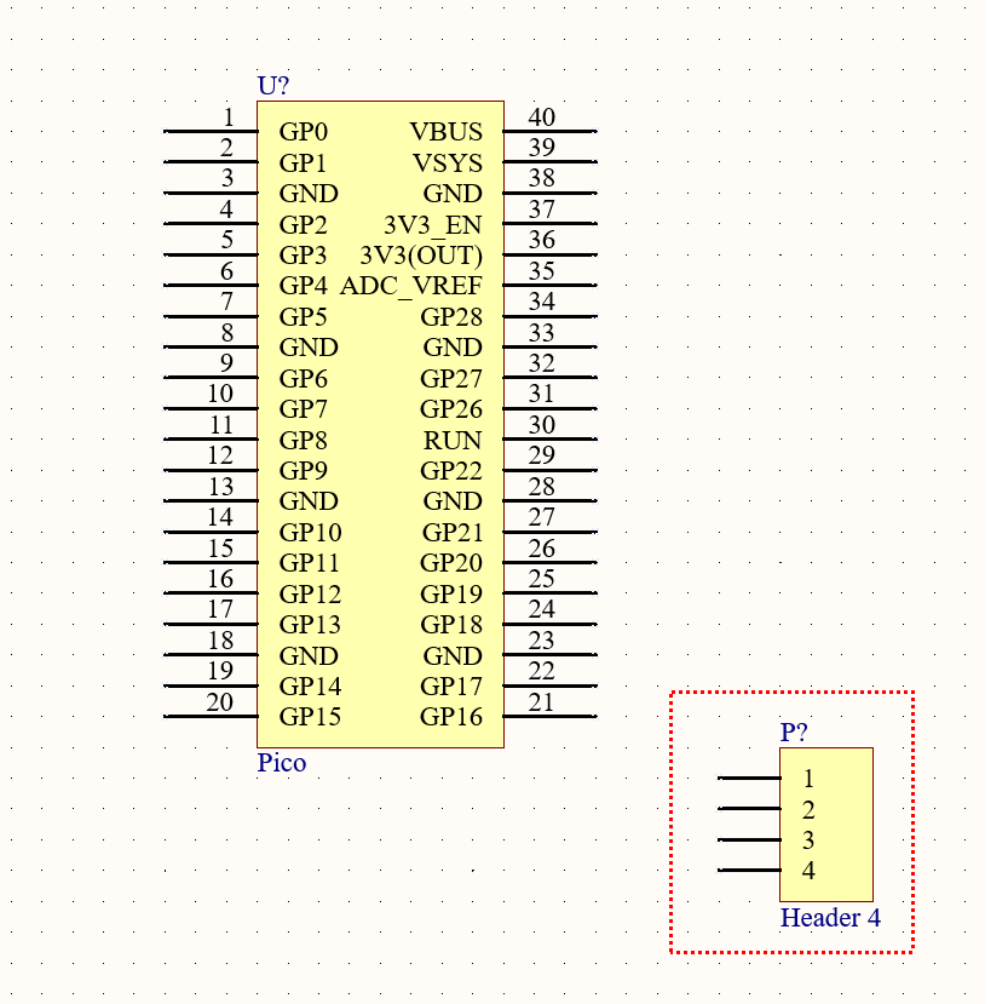

LED (GP25)
LED
USB
BOOTSEL
DEBUG
Raspberry Pi Pico ©2020
SWCLK
GND
SWDIO
UART0 TX I2C0 SDA SPI0 RX GP0 1
UART0 RX I2C0 SCL SPI0 CSn GP1 2
GND 3
I2C1 SDA SPI0 SCK GP2 4
I2C1 SCL SPI0 TX GP3 5
UART1 TX I2C0 SDA SPI0 RX GP4 6
UART1 RX I2C0 SCL SPI0 CSn GP5 7
GND 8
I2C1 SDA SPI0 SCK GP6 9
I2C1 SCL SPI0 TX GP7 10
UART1 TX I2C0 SDA SPI1 RX GP8 11
UART1 RX I2C0 SCL SPI1 CSn GP9 12
GND 13
I2C1 SDA SPI1 SCK GP10 14
I2C1 SCL SPI1 TX GP11 15
UART0 TX I2C0 SDA SPI1 RX GP12 16
UART0 RX I2C0 SCL SPI1 CSn GP13 17
GND 18
I2C1 SDA SPI1 SCK GP14 19
I2C1 SCL SPI1 TX GP15 20
40 VBUS
39 VSYS
38 GND
37 3V3_EN
36 3V3(OUT)
35 ADC_VREF
34 GP28 ADC2
33 GND AGND
32 GP27 ADC1 I2C1 SCL
31 GP26 ADC0 I2C1 SDA
30 RUN
29 GP22
28 GND
27 GP21 I2C0 SCL
26 GP20 I2C0 SDA
25 GP19 SPI0 TX I2C1 SCL
24 GP18 SPI0 SCK I2C1 SDA
23 GND
22 GP17 SPI0 CSn I2C0 SCL UART0 RX
21 GP16 SPI0 RX I2C0 SDA UART0 TX
Power
Ground
UART / UART (default)
GPIO, PIO, and PWM
ADC
SPI / SPI (default)
I2C / I2C (default)
System Control
Debugging

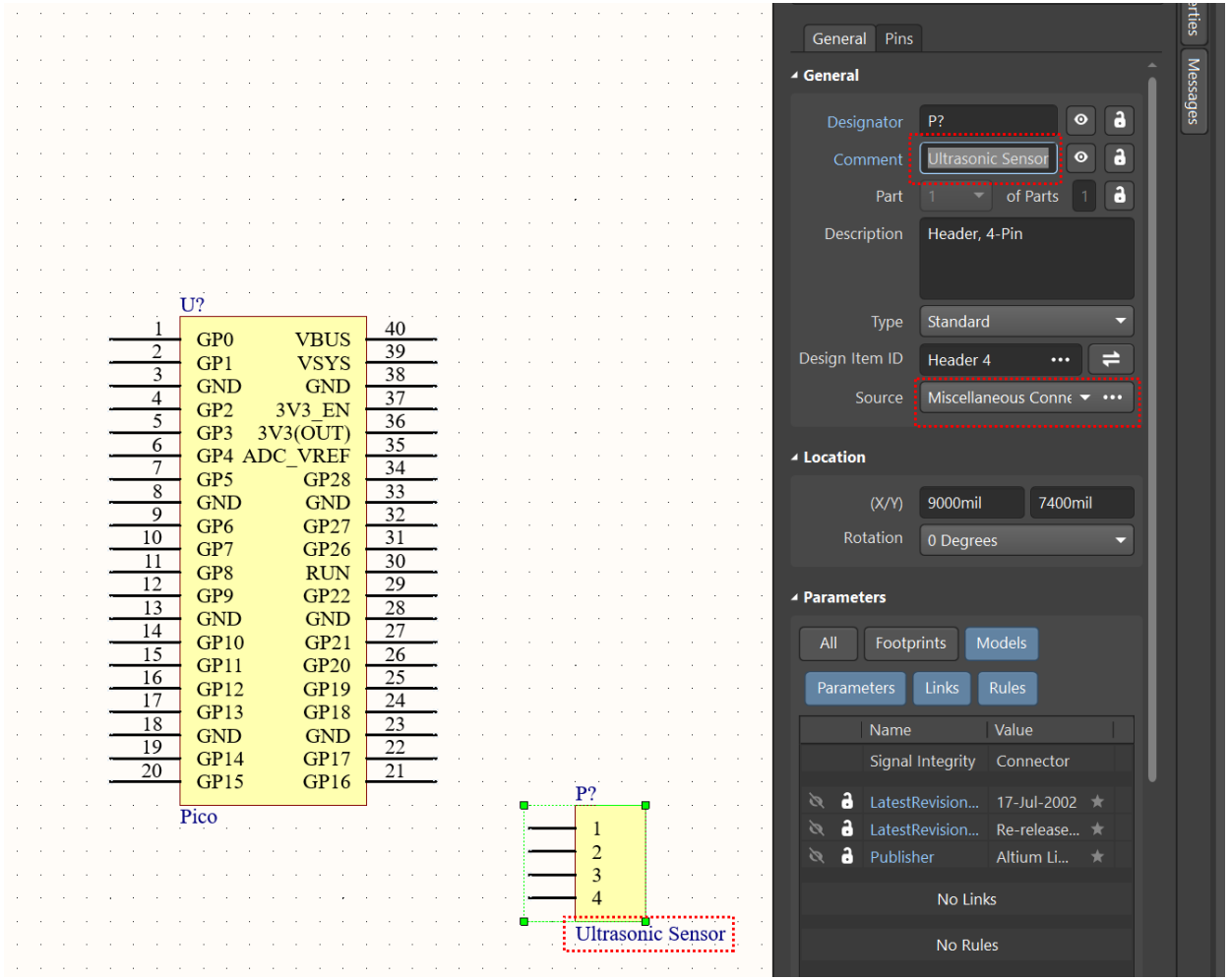
Ultrasonic Sensor를 Header 4-pin 을 활용 배치



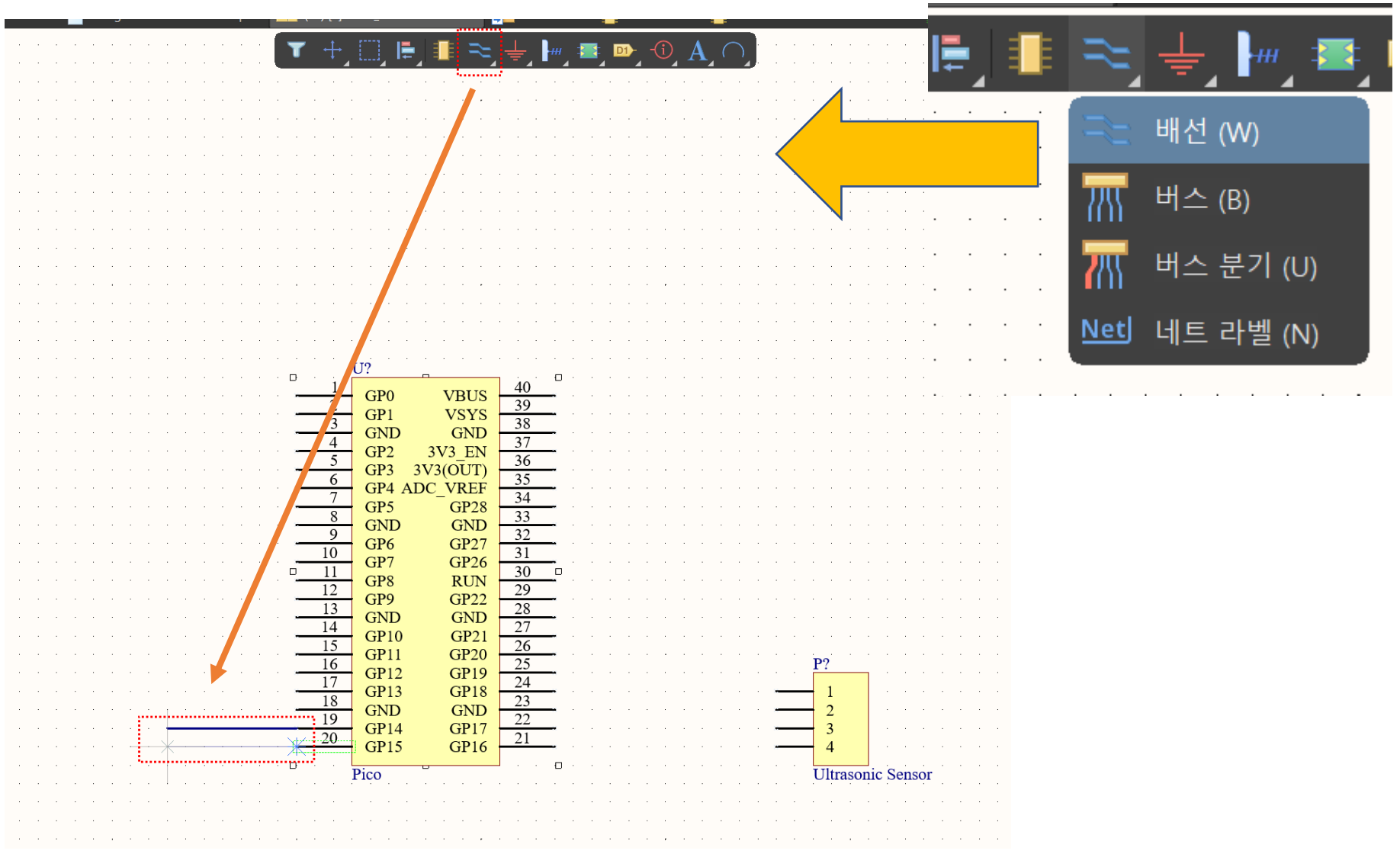


Header 4 이름을 Ultrasonic Sensor 으로 수정한다.

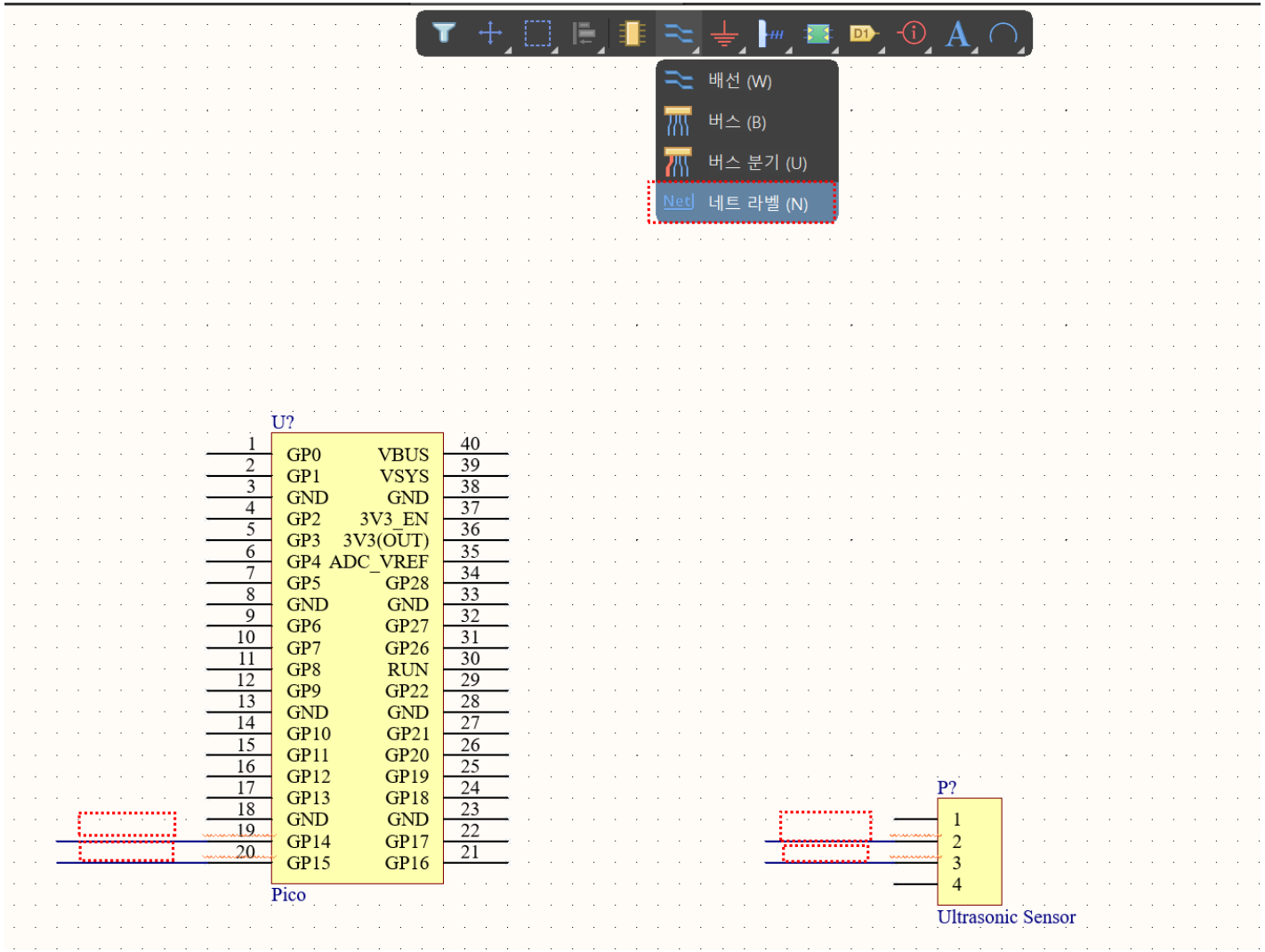




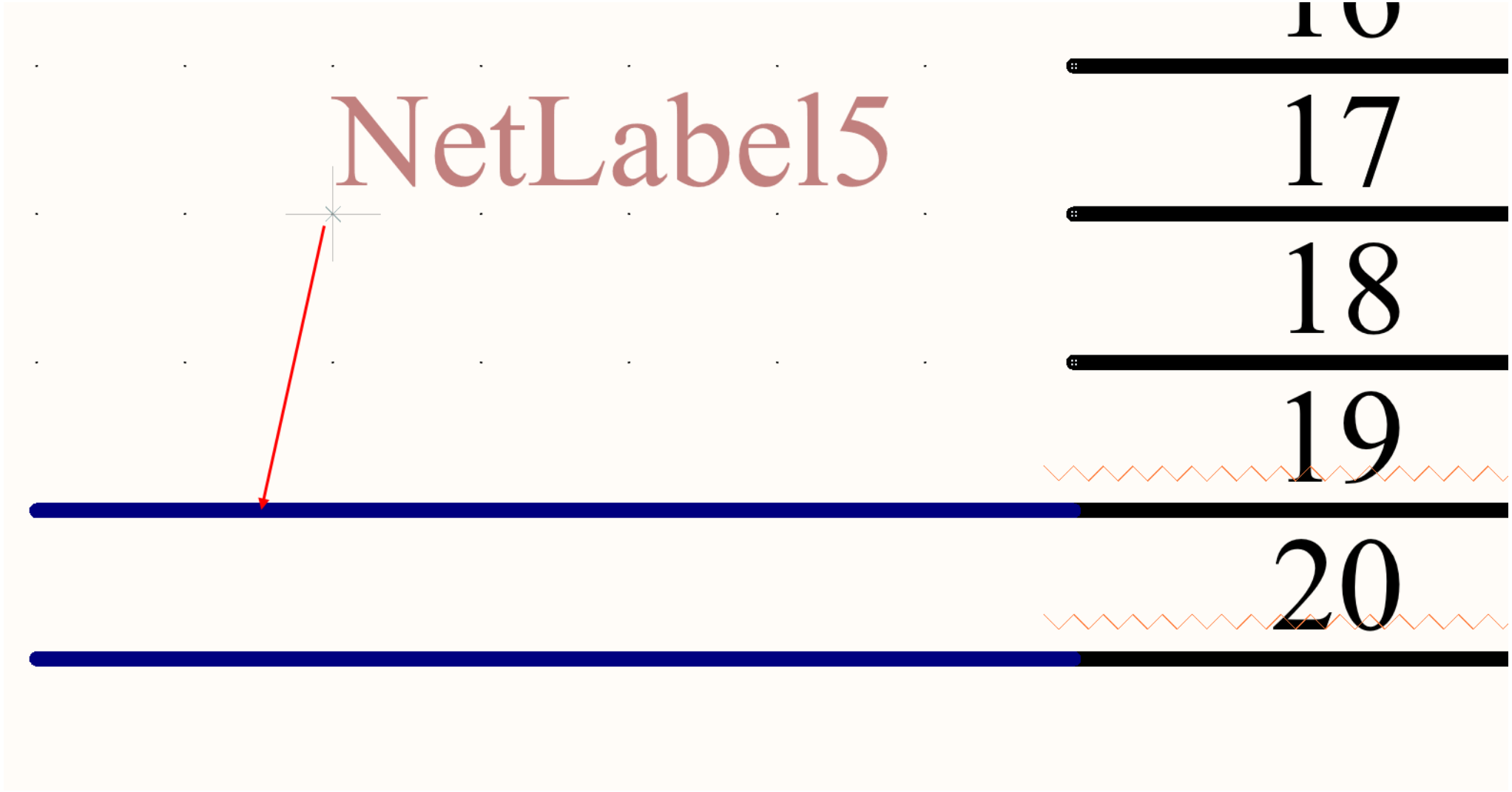
배선 배치


배선 (W)
버스 (B)
버스 분기 (U)
Net
네트 라벨 (N)
U?
GP0 1
GP1 2
GND 3
GP2 4
GP3 5
GP4 6
GP5 7
GND 8
GP6 9
GP7 10
GP8 11
GP9 12
GND 13
GP10 14
GP11 15
GP12 16
GP13 17
GND 18
GP14 19
GP15 20
VBUS 40
VSYS 39
GND 38
3V3_EN 37
3V3(OUT) 36
ADC_VREF 35
GP28 34
GND 33
GP27 32
GP26 31
RUN 30
GP22 29
GND 28
GP21 27
GP20 26
GP19 25
GP18 24
GND 23
GP17 22
GP16 21
Pico
P?
1
2
3
4
Ultrasonic Sensor

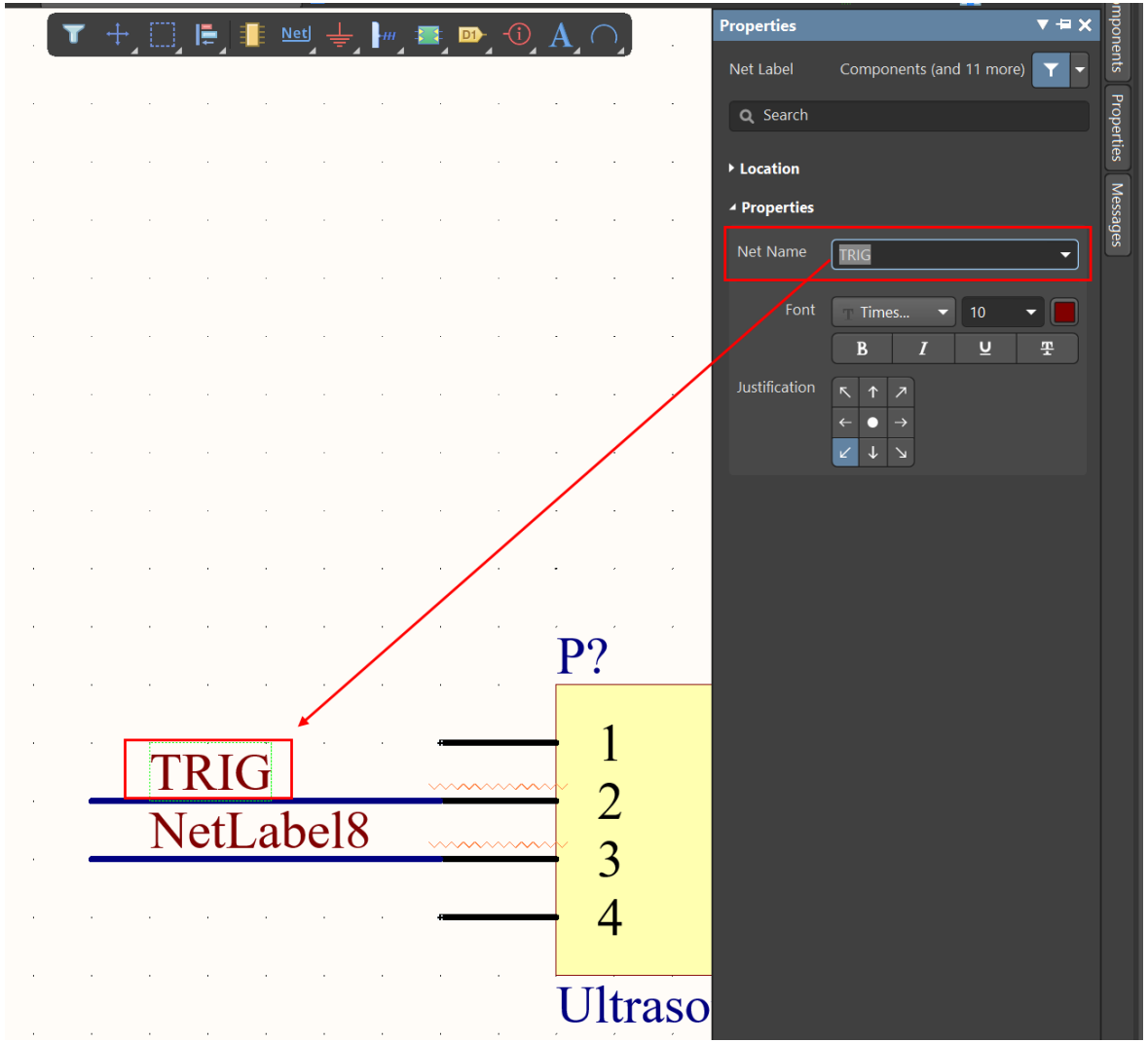
네트 라벨을 점선사각형위치에 배치한다.



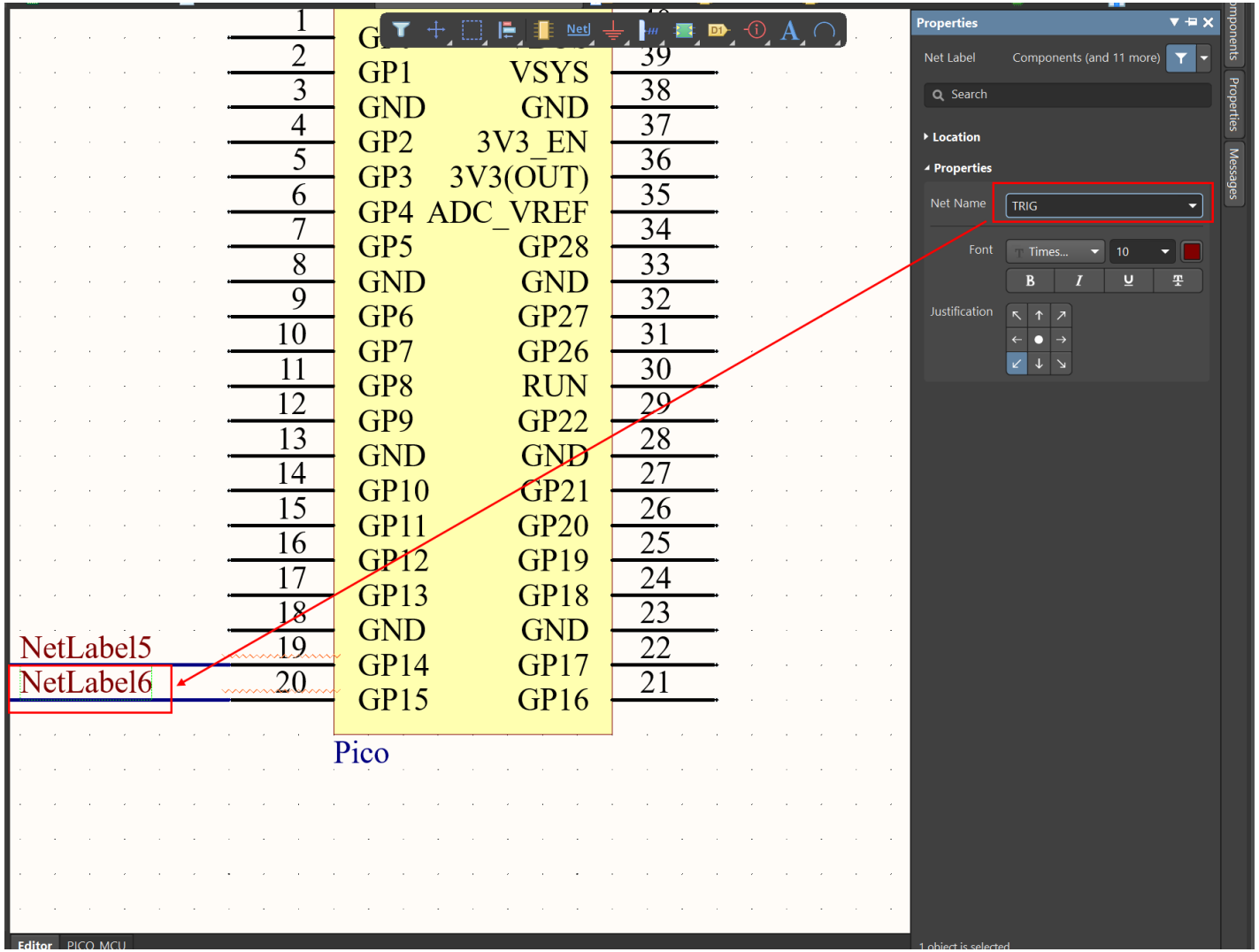
네트라벨 + 그림이 화살표가 가리키는 라인에 위치하도록 배치한다.



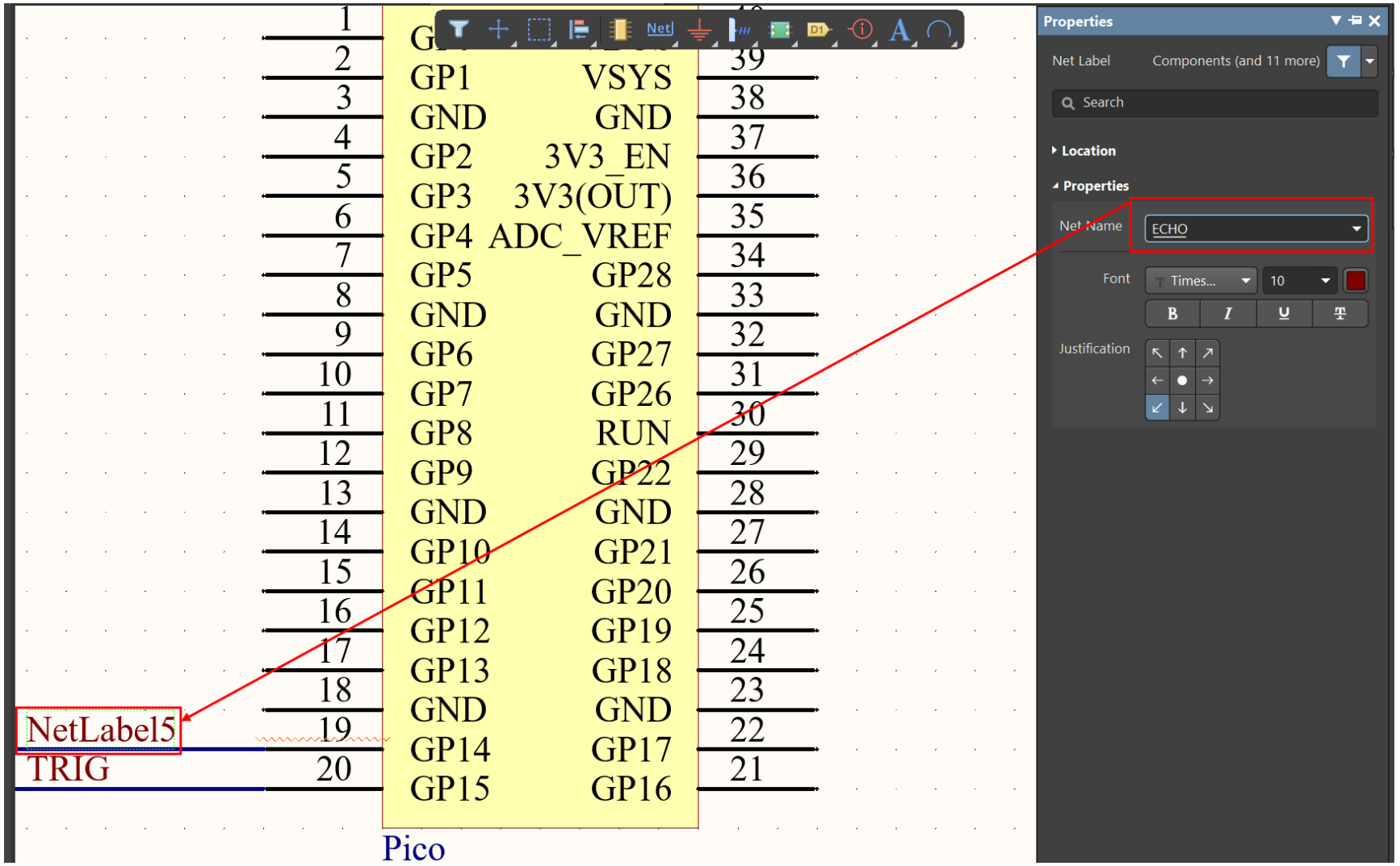
Ultrasonic Sensor의 네트 라벨을 클릭하여 Net Name을 입력한다.



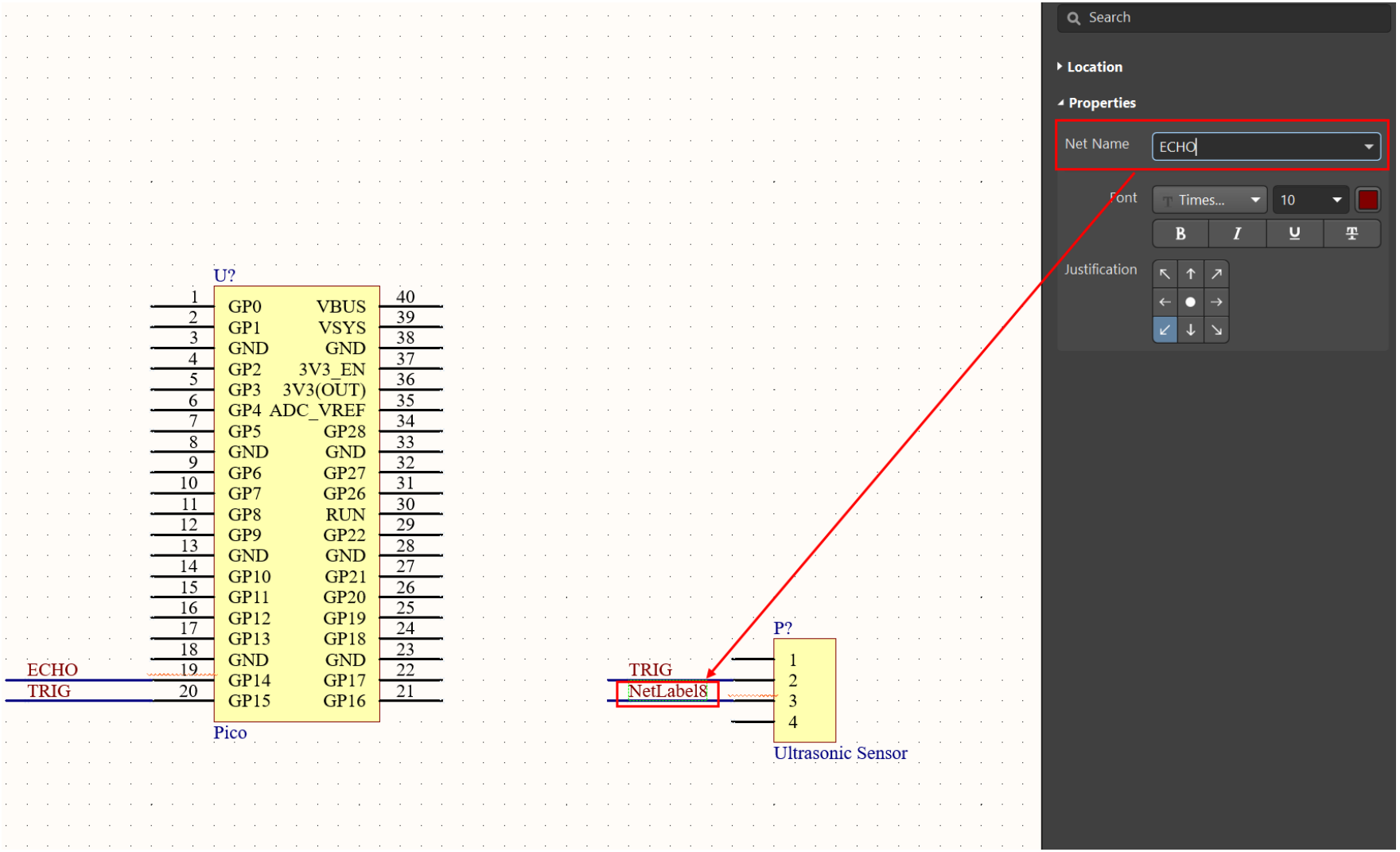
PICO 20 반핀의 네트 라벨을 클릭하여 TRIG 이름을 입력한다.



19번핀의 네트라벨을 ECHO 이름으로 입력한다.

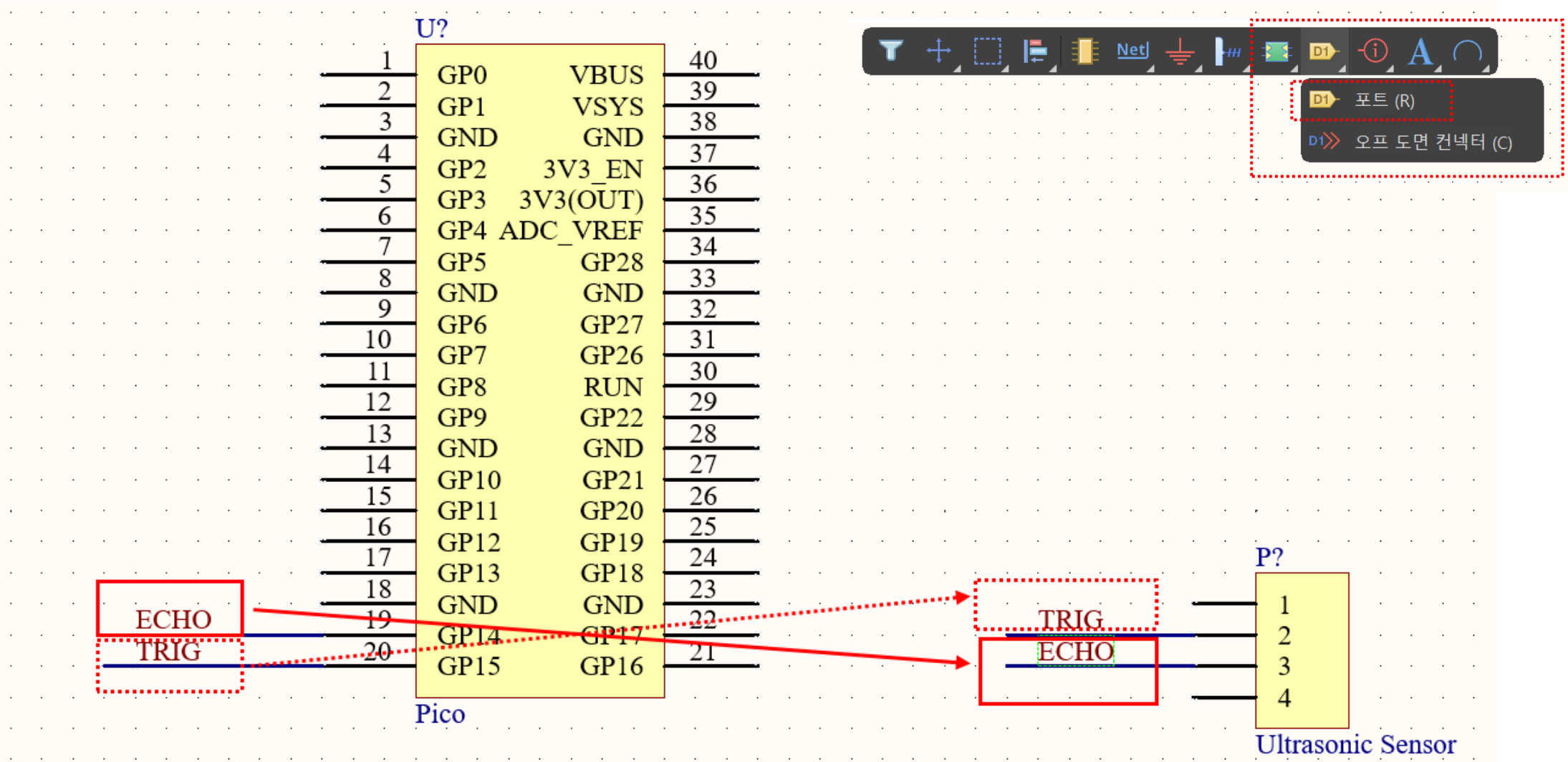


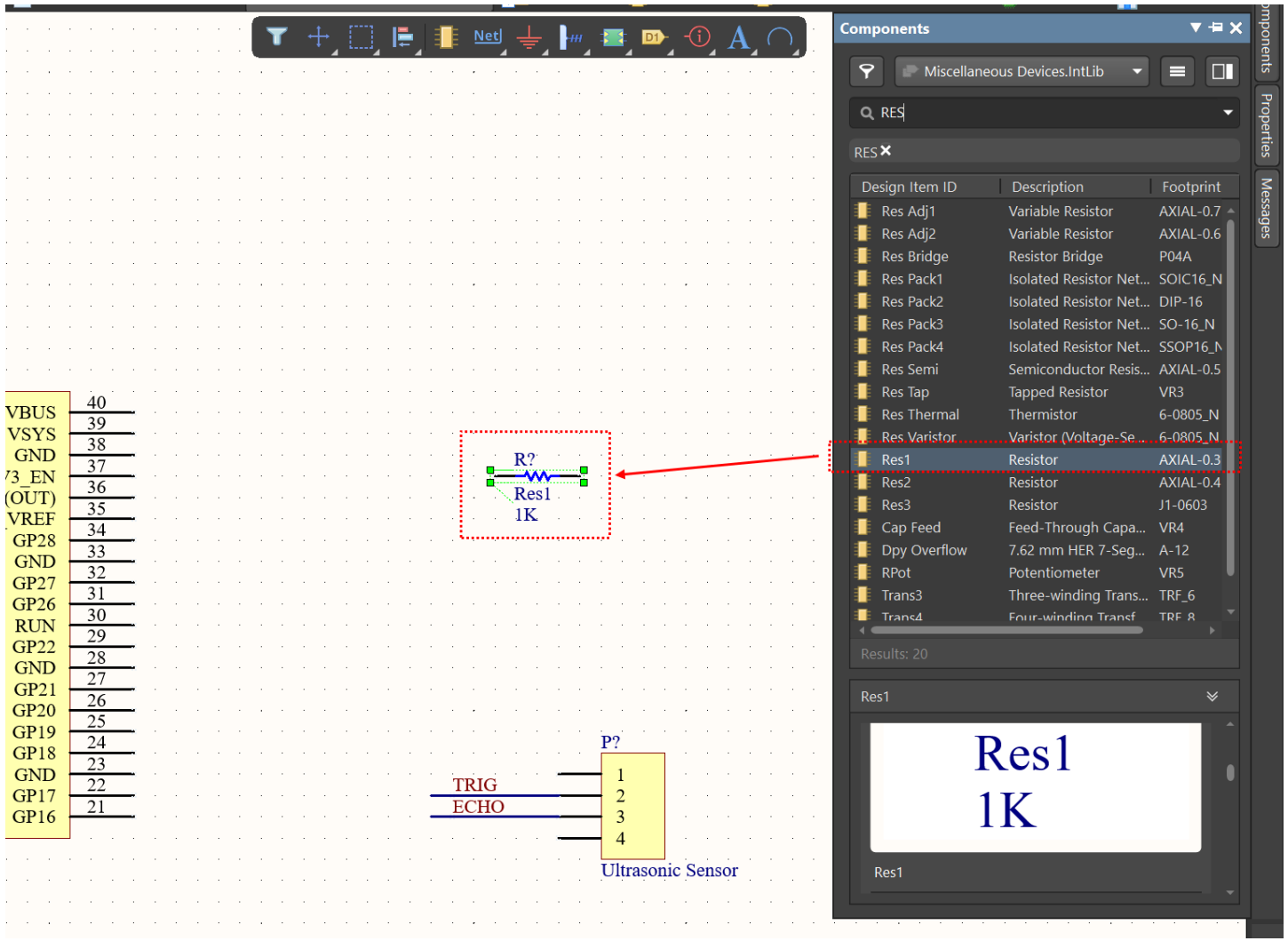
Ultrasonic Sensor 3번핀 네트 라벨 이름을 ECHO로 입력한다.



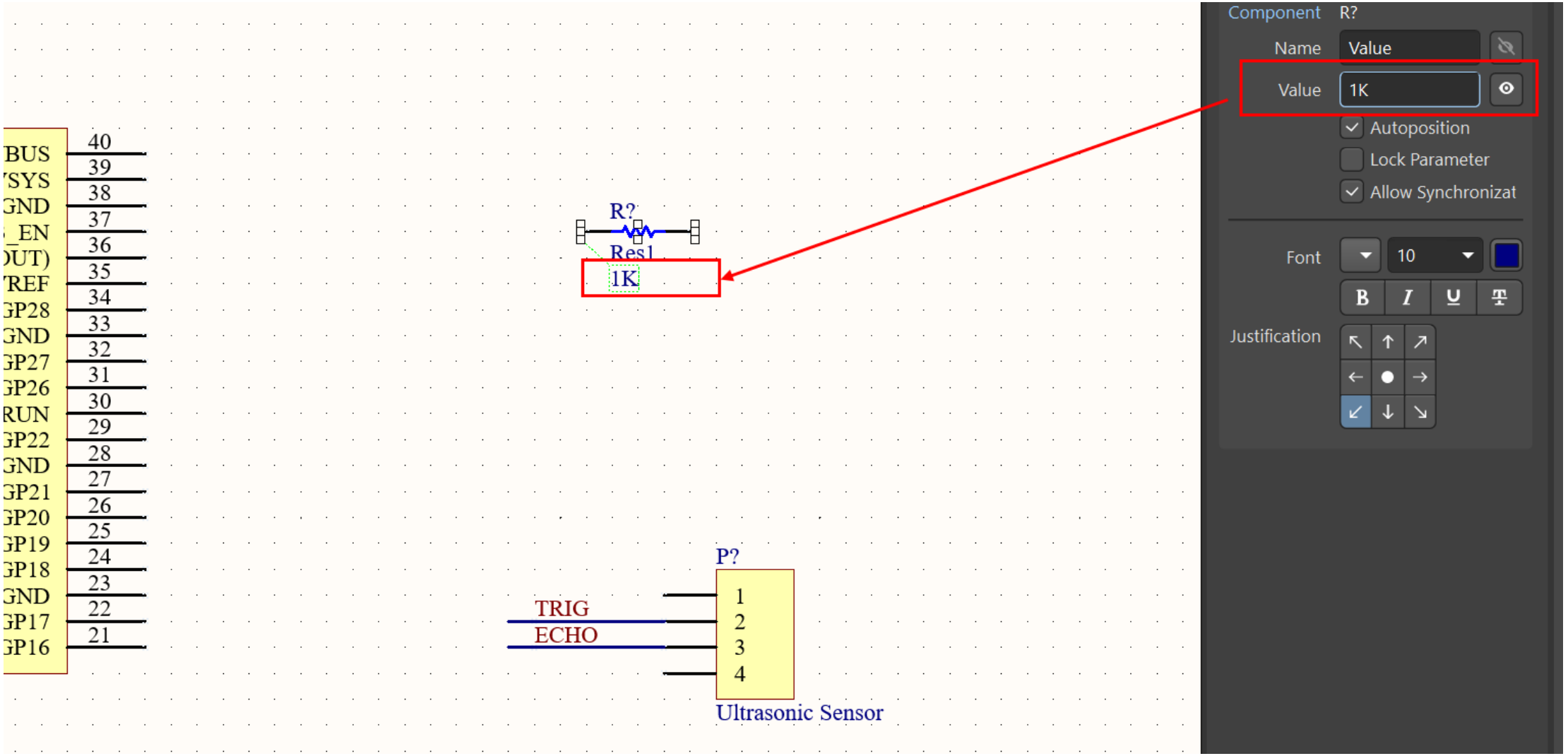
네트라벨 이름이 시트 내에서 이름이 같으면 네트가 연결된다.

- 시트가 다를 경우에는 네트 라벨을 사용하지 않고 포트를 사용한다.

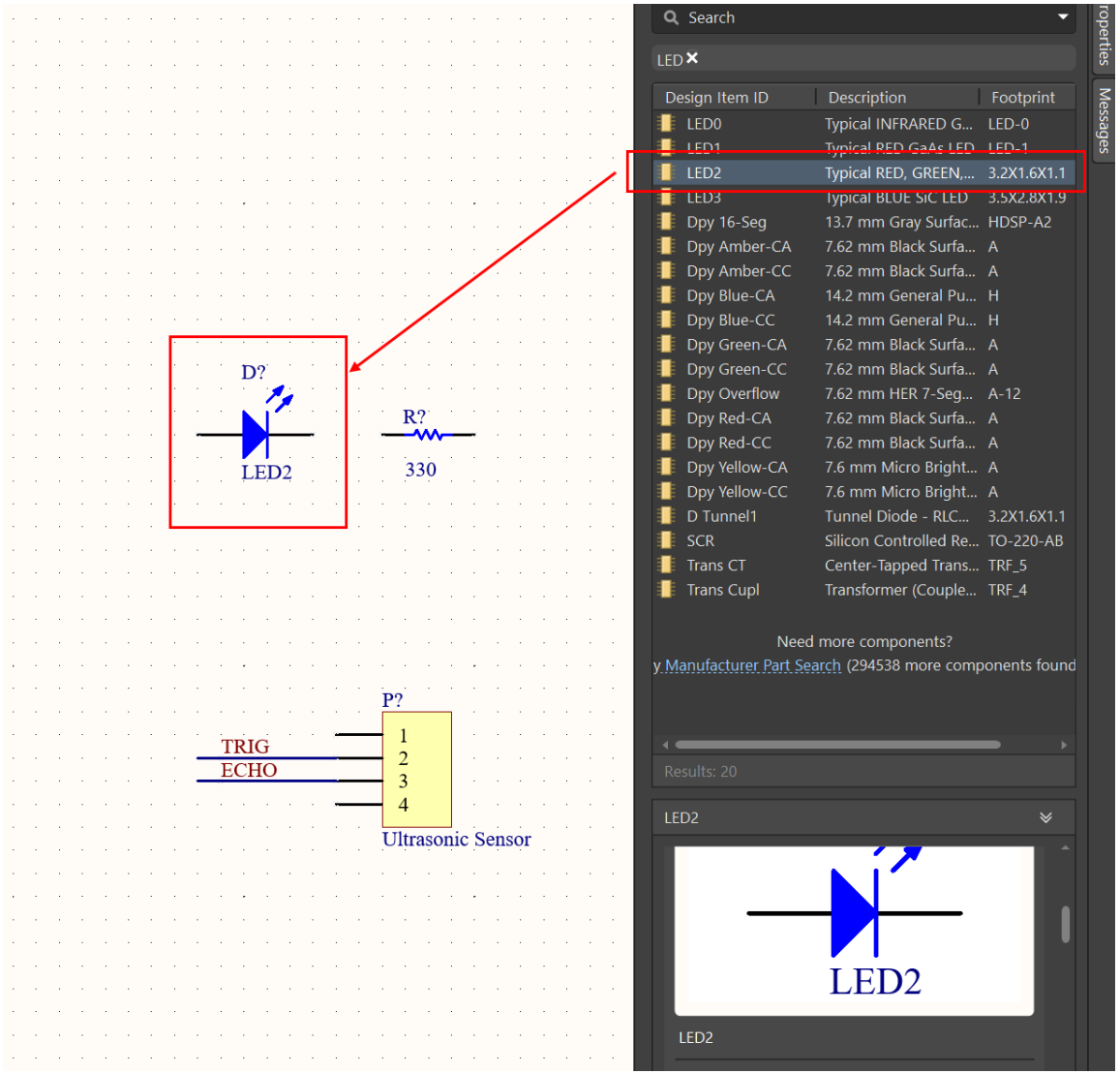



Components
Miscellaneous Devices.IntLib
RES
Design Item ID
Description
Footprint
Res Adj1
Variable Resistor
AXIAL-0.7
Res Adj2
Variable Resistor
AXIAL-0.6
Res Bridge
Resistor Bridge
P04A
Res Pack1
Isolated Resistor Net...
SOIC16_N
Res Pack2
Isolated Resistor Net...
DIP-16
Res Pack3
Isolated Resistor Net...
SO-16_N
Res Pack4
Isolated Resistor Net...
SSOP16_N
Res Semi
Semiconductor Resis...
AXIAL-0.5
Res Tap
Tapped Resistor
VR3
Res Thermal
Thermistor
6-0805_N
Res Varistor
Varistor (Voltage-Se...
6-0805_N
Res1
Resistor
AXIAL-0.3
Res2
Resistor
AXIAL-0.4
Res3
Resistor
J1-0603
Cap Feed
Feed-Through Capa...
VR4
Dpy Overflow
7.62 mm HER 7-Seg...
A-12
RPot
Potentiometer
VR5
Trans3
Three-winding Trans...
TRF_6
Results: 20
Res1
1K
R?
Res1
1K
VBUS
VSYS
GND
3_EN
(OUT)
VREF
GP28
GND
GP27
GP26
RUN
GP22
GND
GP21
GP20
GP19
GP18
GND
GP17
GP16
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
P?
TRIG
ECHO
1
2
3
4
Ultrasonic Sensor

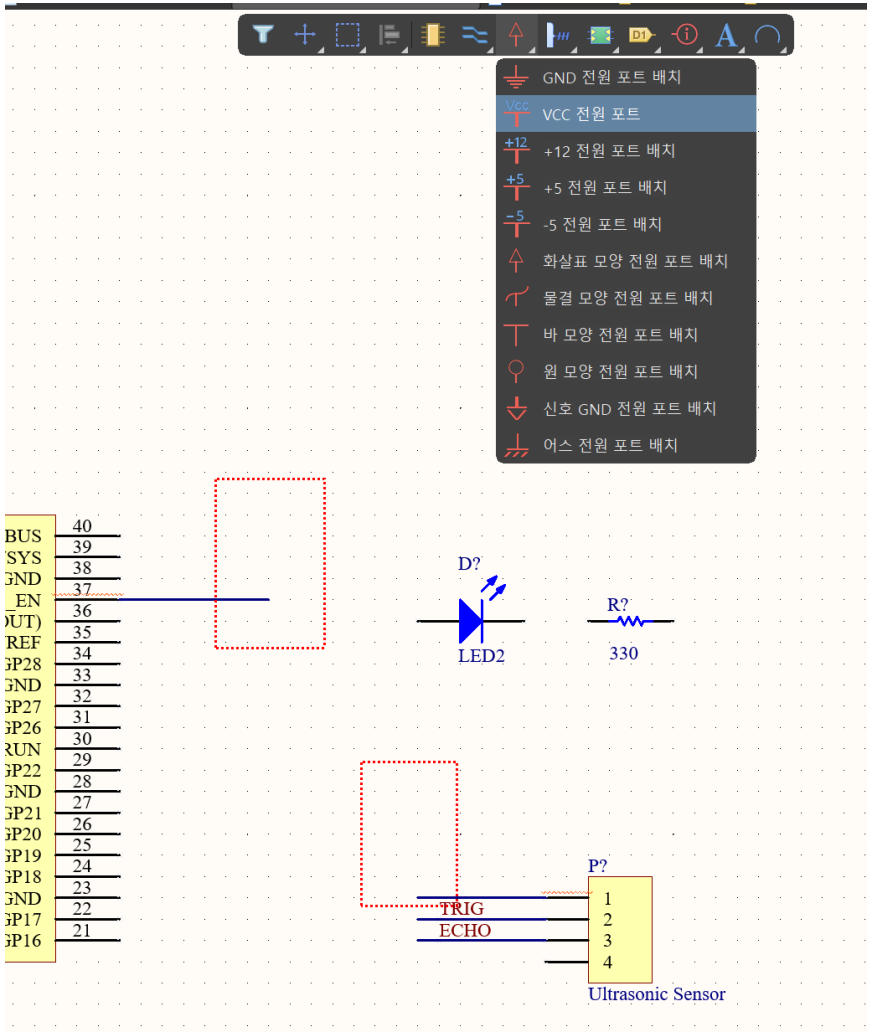
330옴을 입력한다.

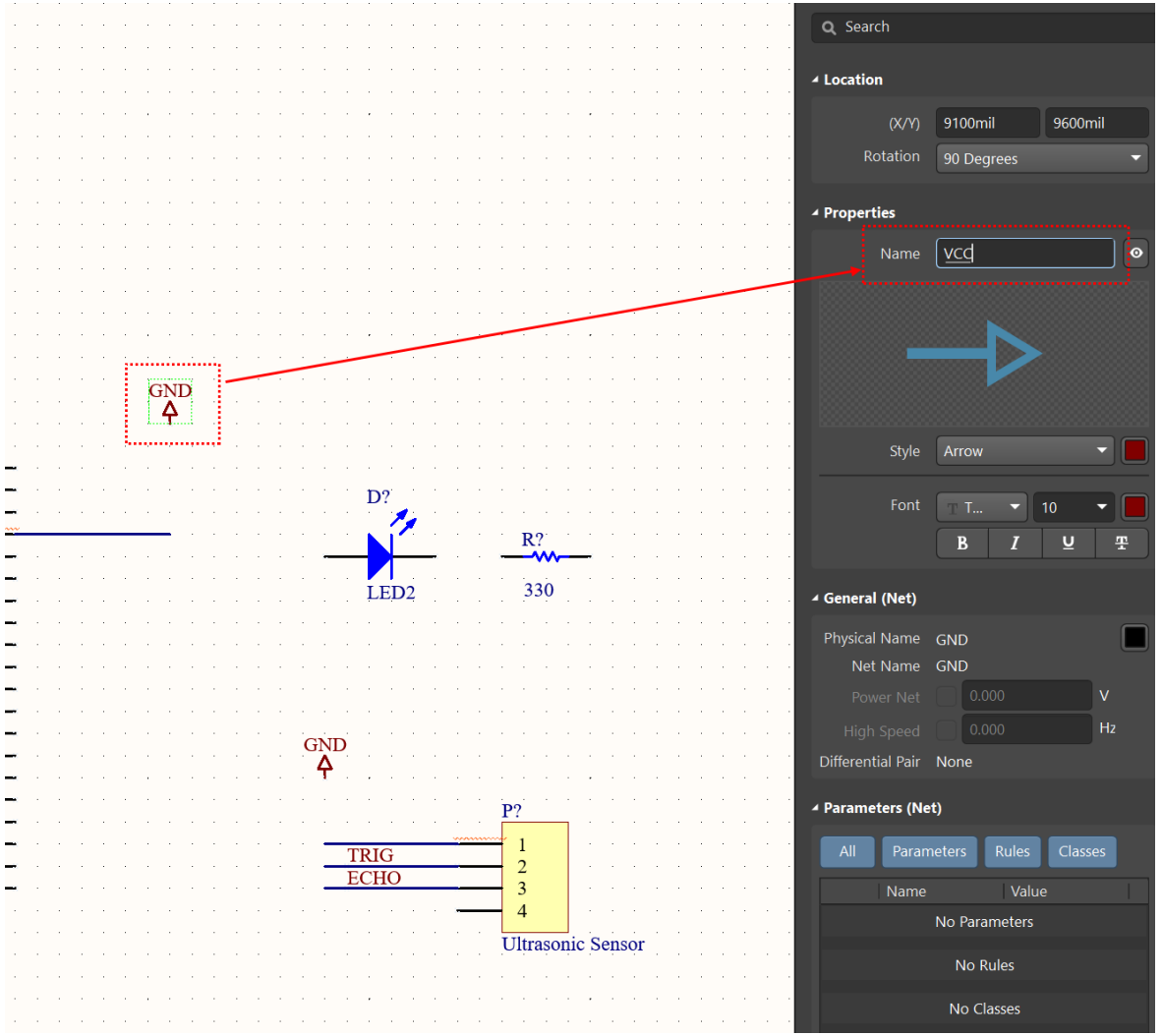

BUS 40
SYS 39
GND 38
_EN 37
UT) 36
REF 35
GP28 34
GND 33
GP27 32
GP26 31
RUN 30
GP22 29
GND 28
GP21 27
GP20 26
GP19 25
GP18 24
GND 23
GP17 22
GP16 21
R?
Res1
1K
P?
TRIG
ECHO
1
2
3
4
Ultrasonic Sensor
Component R?
Name Value
Value 1K
Autoposition
Lock Parameter
Allow Synchronizat
Font 10
Justification

LED 를 다음과 같이 배치한다.

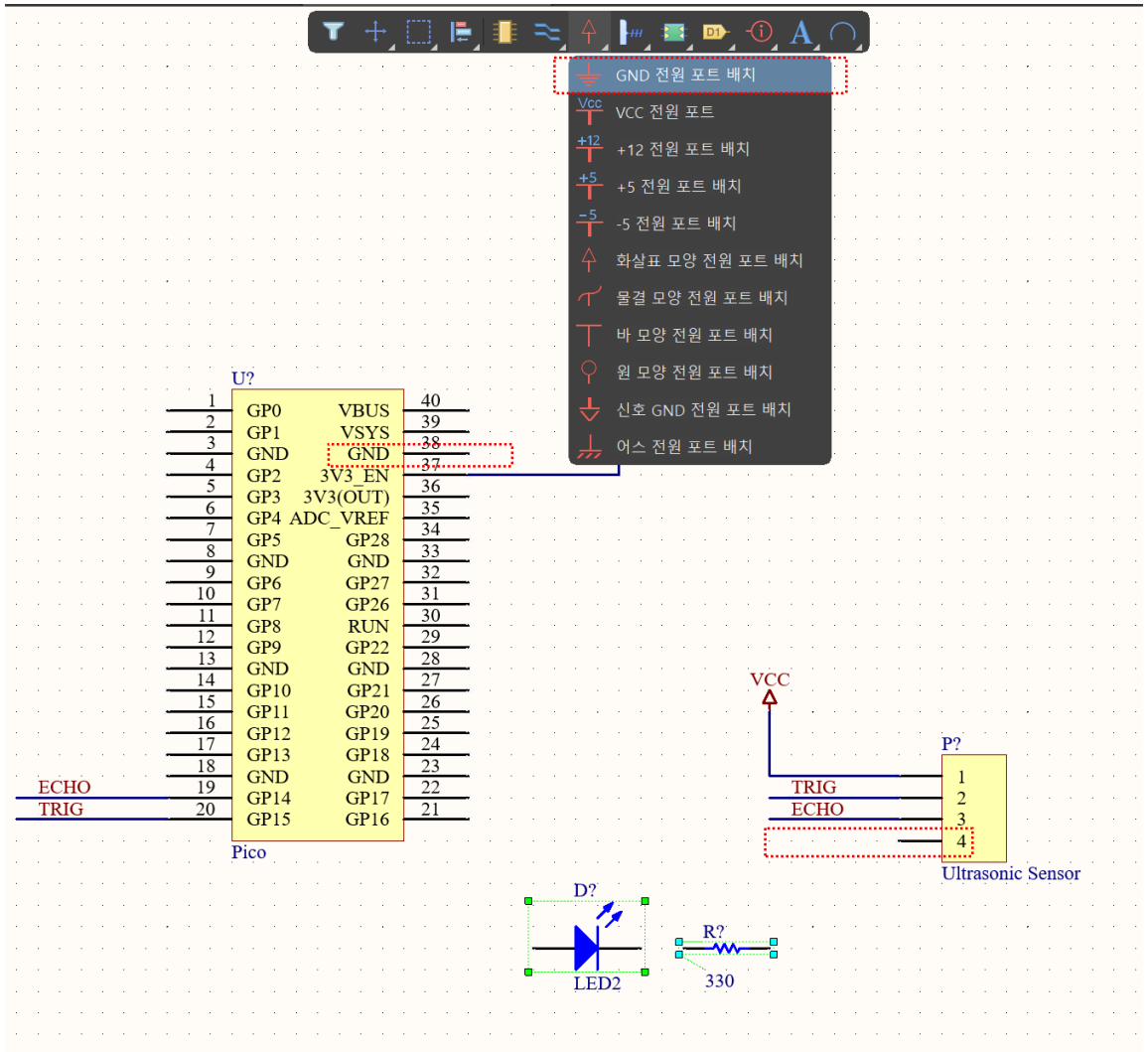


두 점선 사각형 내에 3.3V 전원을 배치하면 자동으로 연결된다.





다음과 같이 메뉴에서 GND를 선택하여 배치한다.



PICO 와 Ultrasonic Sensor 회로도

- https://www.youtube.com/watch?v=GkfznA8SCQc