Unit ToF

SKU:U010




Description

Unit ToF is a laser ranging unit. It integrates the VL53L0X laser ranging module, which calculates the distance between the emission point and the detected object by measuring the round-trip time of the laser signal. Unlike traditional ranging methods, it can provide accurate distance measurement data regardless of the reflectivity of the target. It emits a 940nm wavelength laser and can measure a maximum absolute distance of 2 meters in less than 30ms.

Features

- Maximum measurement distance: 2 meters
- Measurement accuracy: ±3%
- Laser wavelength: 940nm
- 2 x LEGO-compatible holes
- Development Platform
  - UiFlow1
  - UiFlow2
  - Arduino IDE

Includes

- 1 x Unit ToF
- 1 x HY2.0-4P Grove cable (20cm)

Applications

- Laser ranging
- 3D structured light imaging (3D sensing)
- Camera assistance (ultra-fast autofocus and depth map)

Specifications

Specification	Parameter
Sensor	VL53L0X
Measurement Range	3-200cm
Measurement Accuracy	±3%
Product Size	32.0 x 24.0 x 8.0mm
Product Weight	4.1g
Package Size	138.0 x 93.0 x 9.0mm
Gross Weight	9.4g

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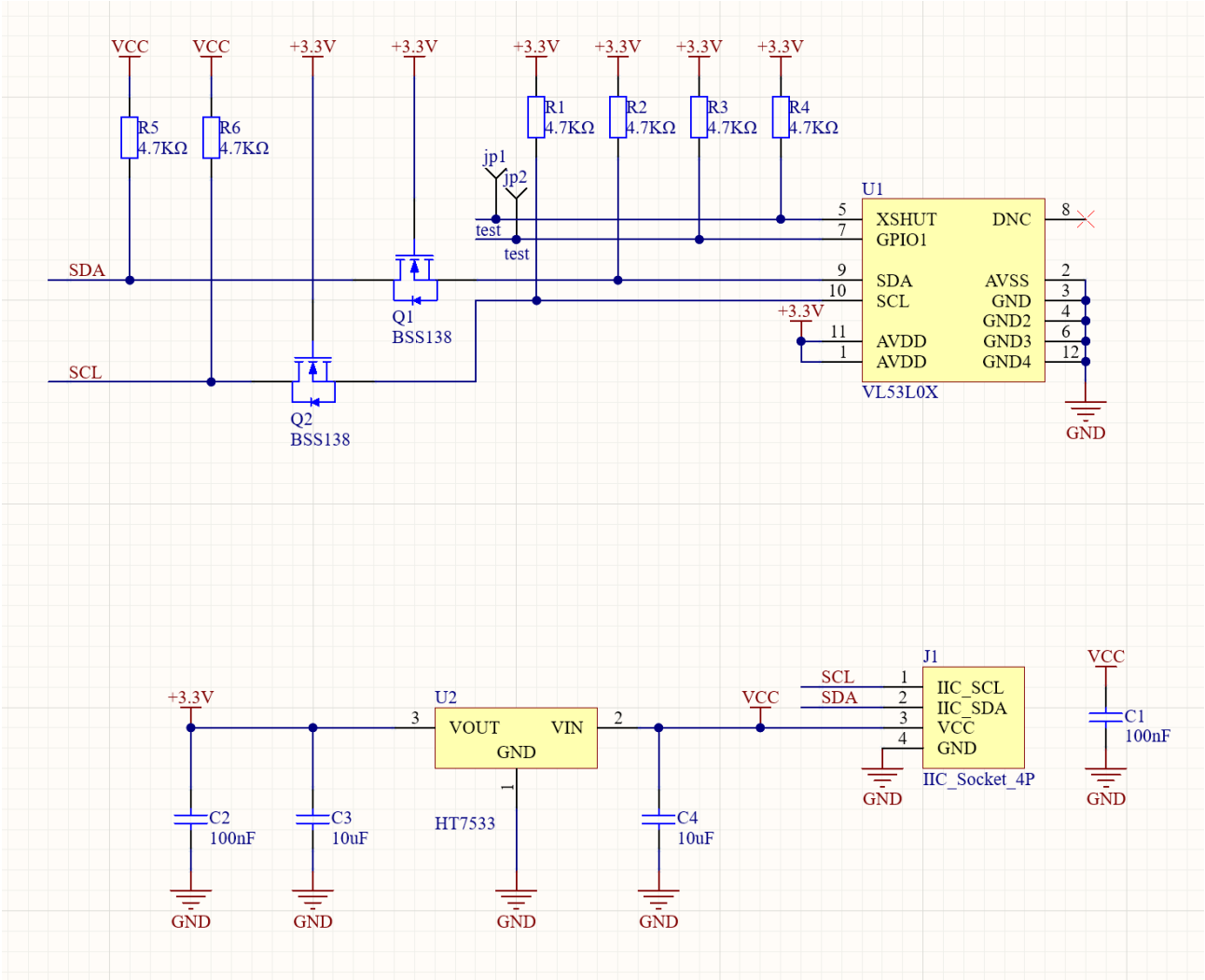
Measurement Range

Under normal conditions, the maximum testing distance is 120 cm. If the testing distance needs to reach 200 cm, the Long Range mode must be enabled, and the environment must be dark without infrared interference.

Schematics

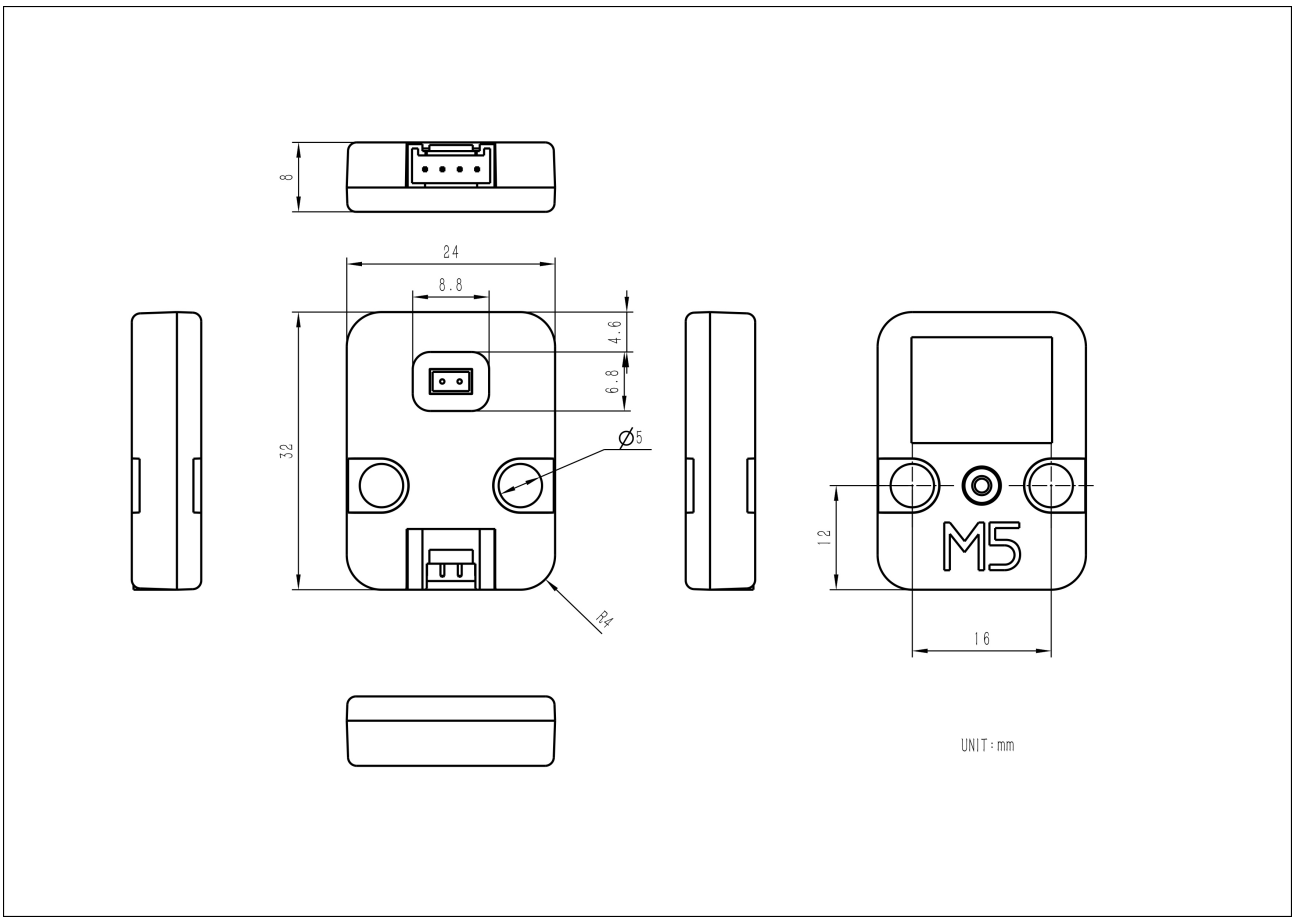


PinMap

Unit ToF

HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	SDA	SCL

Model Size



Datasheets

- VL53L0X Datasheet

Softwares

Arduino

- Unit ToF Test Example

UiFlow1

- Unit ToF UiFlow1 Docs

UiFlow2

- Unit ToF UiFlow2 Docs

EasyLoader

Easyloader	Download Link	Remarks
Unit ToF Test Example Easyloader	download	/

Video

- Unit TOF Example

ToF_UNIT.mp4

Product Comparison

Product Compare		
	Unit-ToF4M	**Unit-TOF**
Chip	VL53L1X	VL53L0X
Maximum Range	4 meters	2 meters
Typical Accuracy	±1-2%	±3%
Field of View (FoV)	27° (adjustable)	25°
Adjustable Field of View	YES	NO

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