oToBrite
driving easier and safer

Datasheet

oToBrite Electronics, Inc

oToCAM231-H52T

Revision	Description	Release Date
1.0	First Release	Dec,16, 2020

1. General Description

The oToCAM231-H52T is an automotive grade camera for the application of autonomous driving and CMS. It uses high sensitive CMOS sensor to perform good image quality for the detection purpose of the system product.

2. Product specification

No.	Item	Specification
1	Image sensor	CMOS (Sony IMX 224)
2	Pixel Size	3.75µm (H) × 3.75µm (V)
3	ISP chip	CXD5700
4	View angle(H/V)	HFOV：52° ; VHOV: 28°
5	Camera Number of pixels (default)	1M (1280 (H) × 720 (V))
6	Resolution(Center)	Center TV line ≧ 500
7	Color filter array	RGGB
8	Output Interface	FPD-Link III with POC
9	Output Formats	Parallel 8-bit YCbCr data (CbYCrY)
10	Lens structure	6G
11	Lens F No.	F1.6
12	Power source (POC)	DC6~12V
13	Startup time of power in	Within 1000ms
14	Frame rate (default)	25 fps (Depends on ISP code version)
15	Exposure Control	DOL3(Depends on ISP code version)
16	Serializer	TI DS90UB913A-Q1
17	Camera Current Consumption	≦ 147mA @6V
18	Operating Temperature	-40℃ ~ +85℃
19	Storage temperature Range	-40℃ ~ +95℃
20	Waterproof	IP 67
21	Dimension(mm)	44*28*27.5 mm (exclude FAKRA connector)
22	Weight	32.5g

3. Outline Drawing

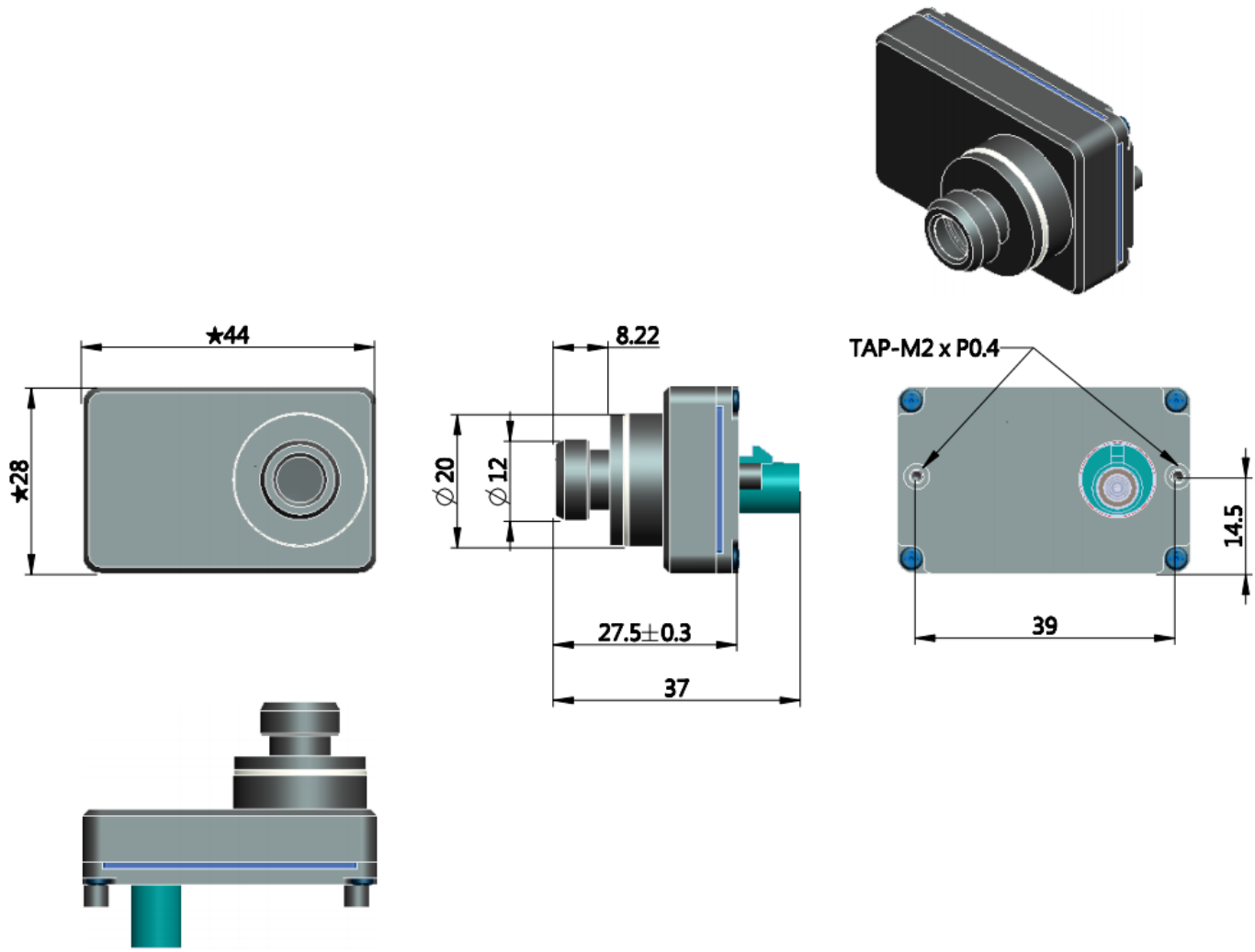

Figure 1. oToCAM231-H52T Diagram (the bracket is optional and different for different car models)

4. Interface, Cables and Connectors (Male and Female)

4.1 Connectors of camera

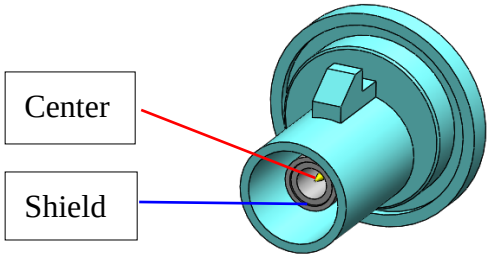

Figure 2.1 Amphenol FK1251ZW-034-TT5GP-50

4.2 Recommended counterpart FAKRA connector

Connector type: Amphenol 3FA1-NZSJ-C01E0

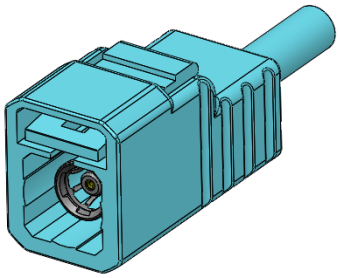

Figure 2.2 Amphenol 3FA1-NZSJ-C01E0

Pin definition:

Pin No.	Signal Name	Operation Voltage and Current
Center	DOUT	Min. 0.32V, Max. 0.412V
	PWR	Typ. 133mA @6V / 25℃
Shield	Shield GND	

5. Applications

5.1. Deserializer (TI 914A) Settings

1. DS90UB914A, Set Mode and OSS Select (OEN_OSS Override:1, OEN Select:1, OSS Select:1, MODE_OVERRIDE:1, MODE_10–bit mode:1)
2. DS90UB914A, Selects the FPD-III serial input channel

5.2. Serializer (TI 913A) Settings

1. HW Initial Default Mode: PCLK from Imager Mode.
2. I2C ID:0xb0(8b).
3. No additional register settings.

5.3. Sensor (IMX224) Register Settings

Sensor setting will be loaded from on-board SPI flash automatically after power up.

6. Special Note

oToCAM231-H52T is System On Module ,includes an Image sensor and ISP (Image Signal Processor). Image are captured and transmitted with 8-bit YCbCr data from camera through coax cable. Usually, Gamma curve is applied to get 8-bit image to improve dynamic range for application.

7. System Configuration (TBD)

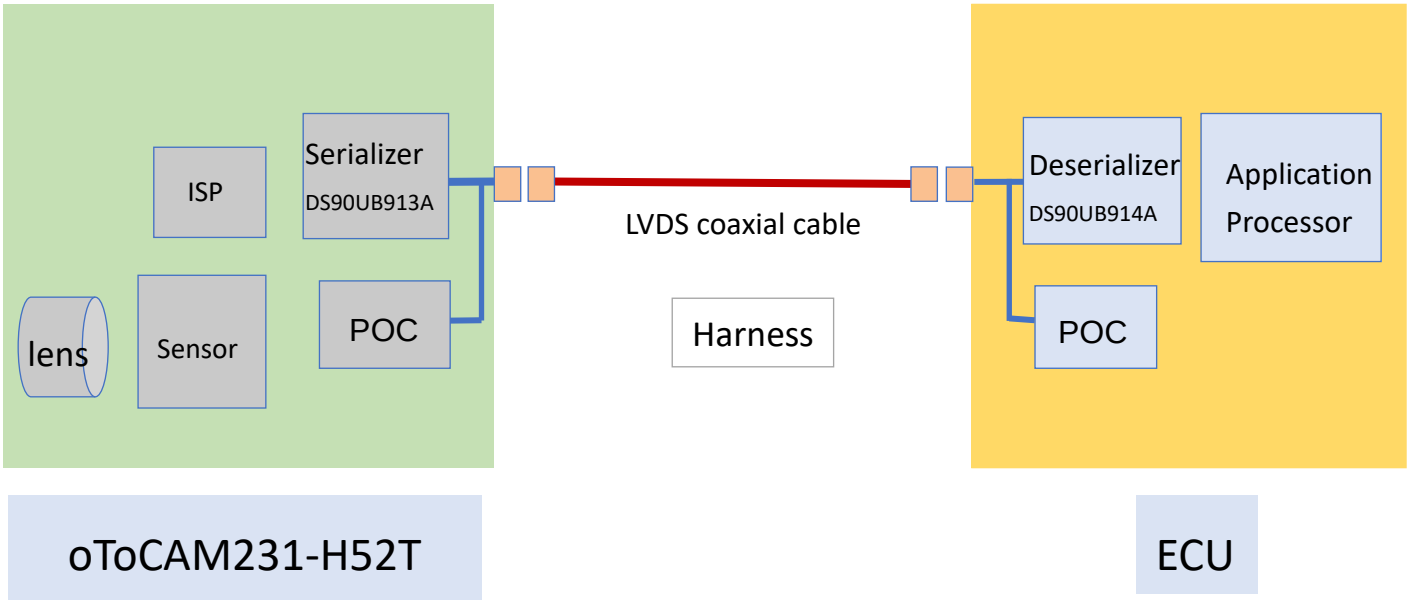

Figure 3. System Configuration

TI FPD-Link III Deserializer must be used as receiver in ECU for connecting oToCAM231-H52T.