
ArduCam

ArduCam OV5640 Camera Module for Toradex Apalis and Verdin Product Families

OV5640 MIPI Camera Solution for Toradex - Datasheet

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by ARDUCAM TECHNOLOGY CO., LTD

Introduction

The OV5640 is a high-performance CMOS image sensor designed for a wide range of imaging applications. It offers a combination of high resolution, advanced imaging features, and versatility, making it a popular choice for mobile and embedded camera systems..

Arducam has designed the OV5640 camera module and integrated it into **Toradex Verdin** development board series via the MIPI protocol. The camera circuit board, after being improved by the Arducam technical team, has reached a mini size of 24x25mm, which makes it easier for visual projects to be applied in narrow spaces with limited size.

Applications

- Machine Vision
- Robotics
- Environmental Observation
- Dynamics Capture
- IoT Automation
- Edge AI,etc.

Highlight Features

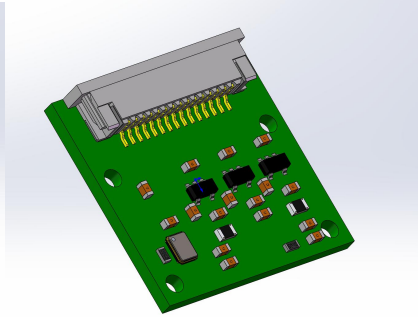
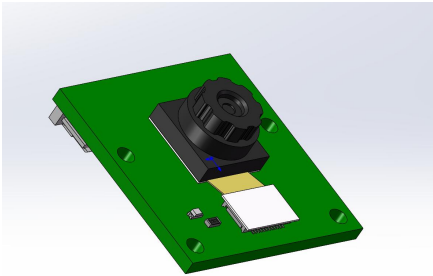
- **High Image Quality:** 5MP advanced imaging high-quality photos and videos.
- **Low Power Consumption:** Extending operational time for portable devices.
- **Excellent ISP:** Features like AF, AE, and AWB contribute to an improved overall user experience by delivering sharp and accurately colored images.

Specifications

Image Sensor	
Sensor	OV5640
Still Resolution	2592x1944
Color Filter Type	Color
Shutter Type	Rolling
Optical Size	1/4"
Output Format	8-/10-bit RGB RAW, RGB, YUV, JPEG
Pixel Size	1.4 μm x 1.4 μm
Sensor Active Area	2592(H) \times 1944(V)
Video Modes	2592x1944@15fps; 640x480/1024x768/1280x720/1920x1080@30fps
Lens	
Focus Type	Fixed Focus
FOV	84.2°(D) \times 71.7°(H) \times 57°(V)
Lens Mount	Stock Lens

Image Sensor	
F.NO	F2.0±5%
E.F.L	4.22mm
Distortion	<1.0%
IR Sensitivity	Integral IR-cut Filter, visible light only
Electrical and Mechanical	
Operating Voltage	3.3V
Operating Temp.	32°F-158°F (0°C to 70°C)
Working Current	Max: 300mA
Camera Board Size	24 × 25 mm

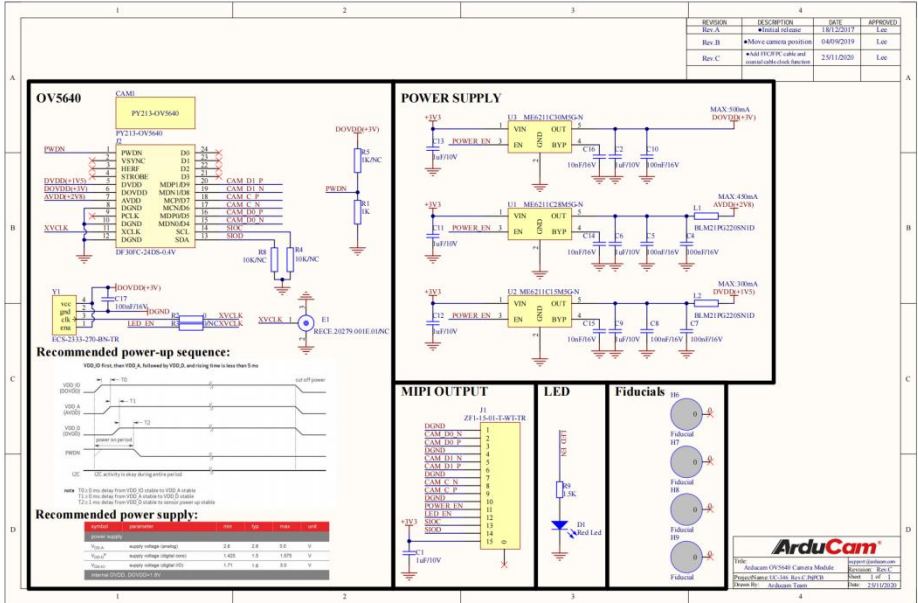
3D Drawing



Product Appearance



Schematic



Pin Definition

Connector Part Number: ZF1-15-01-T-WT-TR

Pin No.	PIN NAME	TYPE	DESCRIPTION	Level
1	DGND	Ground	Power ground	GND
2	MDN0	Output	Pixel Data Lane0 Negative	1.35V
3	MDP0	Output	Pixel Data Lane0 Positive	1.35V
4	DGND	Ground	Power ground	GND
5	MDN1	Output	Pixel Data Lane1 Negative	1.35V
6	MDP1	Output	Pixel Data Lane1 Positive	1.35V
7	DGND	Ground	Power ground	GND
8	MCN	Output	Pixel Clock Output Form Sensor Negative	1.35V
9	MCP	Output	Pixel Clock Output Form Sensor Positive	1.35V
10	DGND	Ground	Power ground	GND
11	POWER-EN	Input	Power Enable	3.3V/1.8V
12	NC	I/O	NC/XCLK	NC
13	SCL	Input	SCCB serial interface clock input	3.3V
14	SDA	I/O	SCCB serial interface data I/O	3.3V
15	VCC	Power	3.3V Power supply	POWER