

LI-OV13850-MIPI-AF SPECIFICATION

**Rev 1.2
Leopard Imaging Inc.**

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Version History

| Version | Description | Release Date |
|---------|---------------------------------------|---------------|
| 1.0 | First Release. | 3. Jan. 2015 |
| 1.1 | Updated OV13850 module to V1.1. | 10. Feb. 2016 |
| 1.2 | Deleted info quoted from sensor spec. | 23. May. 2022 |



LI-OV13850-MIPI-AF SPECIFICATION

Key Information

| Module Part# | | LI-OV13850-MIPI-AF |
|--------------------------|--------------|--|
| Module Size | | 27.75 (L) x 8.50 (W) x 5.70 (H) mm |
| Sensor Type | | OV13850 |
| Array Size | | 4224 (H) x 3136 (V) |
| Power Supply | Core | 1.14 ~ 1.26V (1.2V nominal) |
| | Analog | 2.6 ~ 3.0V (2.8V nominal) |
| | I/O | 1.7 ~ 3.0 V (1.8V or 2.8V nominal) |
| Lens Size | | 1/3.06" |
| Focus (F.NO) | | 2.2 |
| FOV (D) | | 70° |
| Focal Length | | 3.81 mm |
| Focusing Range | | 10 cm to Infinity |
| TV Distortion | | < 1.5 % |
| Sensitivity | | TBD |
| Pixel size | | 1.12 x 1.12 μm |
| IR Filter | | 650 nm IR cut filter |
| Sensor Temperature Range | Operating | -30°C to +85°C |
| | Stable Image | 0°C to +60°C |
| Output Formats | | 10-bit RAW RGB data |
| Support Image Sizes | | 13.2MP (4224 x 3136); 10M (16:9 – 4224 x 2376); 4K2K (3840 x 2160); EIS 1080P (2112 x 1188); EIS 720P (1408 x 792); and more |
| Dynamic Range | | TBD |
| Max S/N Ratio | | TBD |
| Power Requirement | Active | 199 mW (13MP @ 30 fps, ISP OFF) |
| | Standby | 300 μW |
| | XSHUTDOWN | 1 μW |
| Image Area | | 4815 x 3678.3 μm |
| Dark Current | | TBD |
| Die Dimensions | | 6210 x 5517 μm (COB), 6260 x 5567 μm (RW) |



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Pin Assignment

| No. | Name | Pin Type | Description |
|-----|----------------|----------|---|
| 1 | SDA | I/O | SCCB data |
| 2 | SCL | Input | SCCB input clock |
| 3 | DOVDD1.8V/2.8V | Power | Power for I/O circuit |
| 4 | MCP | Output | MIPI clock positive output |
| 5 | MCN | Output | MIPI clock negative output |
| 6 | GND | Ground | |
| 7 | MDP1 | Output | MIPI data positive output |
| 8 | MDN1 | Output | MIPI data negative output |
| 9 | GND | Ground | |
| 10 | MDP2 | Output | MIPI data positive output |
| 11 | MDN2 | Output | MIPI data negative output |
| 12 | GND | Ground | |
| 13 | MDP3 | Output | MIPI data positive output |
| 14 | MDN3 | Output | MIPI data negative output |
| 15 | GND | Ground | |
| 16 | MDP4 | Output | MIPI data positive output |
| 17 | MDN4 | Output | MIPI data negative output |
| 18 | DVDD1.2V | Power | Power for digital core |
| 19 | XCLK | Input | System input clock |
| 20 | PWDN | Input | Power down (active high with internal pull-down resistor) |
| 21 | RESET | Input | Reset (active low with internal pull-up resistor) |
| 22 | AVDD2.8 | Power | Analog power |
| 23 | AF-VCC2.8V | Power | Power for analog circuit |
| 24 | AF-AGND | Ground | Ground for analog circuit |



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Mechanical Diagram

