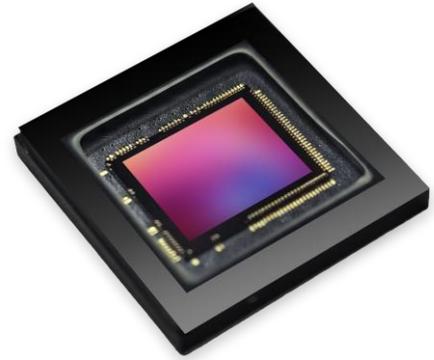# MAT331

MetaSilicon MAT Series CMOS Image Sensor
For Automotive Applications

CMOS IMAGE SENSOR

MAT331是一款面向车载视觉应用的具备超高动态范围、高帧率特点的车规级CMOS图像传感器产品。产品同时还具备片上ISP二合一以及LED闪烁抑制功能，能够为包括全景环视、ADAS周视、自动泊车、电子后视镜（CMS）等应用提供高质量的影像支持。

MAT331采用BSI工艺，遵循AEC-Q100 Grade 2 及 ISO 26262 ASIL-B功能安全标准设计，在元视芯自研的优化LOFIC技术及MTHDR®技术支持下，能够实现超130dB的超高动态范围。此外，产品支持 RAW 格式输出，提供iBGA 和COB两种封装形式。

MAT Series: MAT331

Item	Parameters
Resolution	3.0MP
Process	BSI
Pixel Size	3.0μm × 3.0μm
Pixel Array	1920H × 1536V
Optical Format	1/2.4 inch
Max Frame Rate	30fps @1920 × 1536
Max S/N Ratio	48.5dB
Output Format	RAW
Output Interface	CSI-2 MIPI: MIPI 4-Lane, Max 1.0GHz
CRA	21.8°
Dynamic Range	Up to 130dB
Operation Temperature	-40℃ ~ +105℃
Power Supply	Analog: 2.8V @AVDD Digital: 1.2V @DVDD IO: 1.8V @DOVDD
Package	iBGA / COB

Features

- 符合AEC-Q100 Grade 2
- 符合ISO 26262功能安全 ASIL-B
- 车规级 RISC-V MCU（ASIL-B）
- 超130dB高动态范围
- 30fps @1920×1536高帧率影像输出
- 片上ISP二合一，内置图像处理算法
- 具备LFM（LED闪烁抑制）功能
- 支持外部帧同步控制
- 高灵敏度

Applications
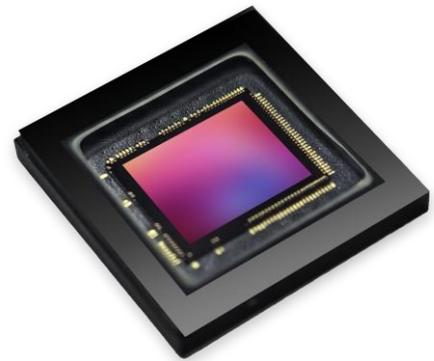
- 车载全景环视应用
- ADAS周视应用
- 自动泊车应用
- 电子后视镜（CMS）应用

MAT331

MetaSilicon MAT Series CMOS Image Sensor
For Automotive Applications

MAT331 is an automotive grade CMOS image sensor product with ultra-high dynamic range and high frame rate for automotive vision applications. The product also has on-chip ISP and LED flicker suppression functions, which can provide high-quality image support for applications including panoramic view, ADAS surround view, automatic parking, CMS and other applications.

MAT331 adopts BSI process and is designed follow AEC-Q100 Grade 2 and ISO 26262 ASIL-B functional safety standards. With the support of MetaSilicon's self-developed optimized LOFIC technology and MTHDR® technology, it can achieve an ultra-high dynamic range of up to 130dB. In addition, the product supports RAW output format and provides iBGA and COB packaging forms.

CMOS IMAGE SENSOR

MAT Series: MAT331

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Power Supply	Analog: 2.8V @AVDD Digital: 1.2V @DVDD IO: 1.8V @DOVDD
Package	iBGA / COB

Features

- AEC-Q100 Grade 2
- ISO 26262 ASIL-B
- Automotive grade RISC-V MCU (ASIL-B)
- Up to 130dB high dynamic range
- 30fps @1920×1536 high frame rate video output
- On-chip ISP, built-in image processing algorithm
- LED flicker suppression
- High sensitivity

Applications

- Car panoramic view application
- ADAS surround view
- Automatic parking
- CMS