

**KLT-M3MF-AR1335 PLCC V4.0**

**On Semiconductor Aptina AR1335\_PLCC MIPI Interface Fixed Focus 13MP  
Camera Module**



|                          |                                  |
|--------------------------|----------------------------------|
| <b>Camera Module No.</b> | <b>KLT-M3MF-AR1335 PLCC V4.0</b> |
| <b>Image Sensor</b>      | AR1335_PLCC                      |
| <b>EFL</b>               | 2.3 mm                           |
| <b>F.NO</b>              | 2.4                              |
| <b>Pixel</b>             | 4208 x 3120                      |
| <b>View Angle</b>        | 135°(D) 110°(H) 81°(V)           |
| <b>Lens Type</b>         | 1/3.2 inch                       |
| <b>Lens Dimensions</b>   | 8.50 x 8.50 x 6.12 mm            |
| <b>Module Size</b>       | 19.57 x 8.50 mm                  |
| <b>Module Type</b>       | Fixed Focus                      |
| <b>Interface</b>         | MIPI                             |

**Mating Connector Part No. DF30FC-30DS-0.4V**



Mating Connector On Main Board. Sold Separately.

## KLT-M3MF-AR1335 PLCC V4.0

**On Semiconductor Aptina AR1335\_PLCC MIPI Interface Mise au point fixe 13MP  
Module de caméra**



|                                 |                                  |
|---------------------------------|----------------------------------|
| <b>Module de caméra No.</b>     | <b>KLT-M3MF-AR1335 PLCC V4.0</b> |
| <b>Capteur d'image</b>          | AR1335_PLCC                      |
| <b>EFL</b>                      | 2.3 mm                           |
| <b>F.NO</b>                     | 2.4                              |
| <b>Pixel</b>                    | 4208 x 3120                      |
| <b>Angle de vue</b>             | 135°(D) 110°(H) 81°(V)           |
| <b>Type d'objectif</b>          | 1/3.2 pouce                      |
| <b>Dimensions de l'objectif</b> | 8.50 x 8.50 x 6.12 mm            |
| <b>Taille du module</b>         | 19.57 x 8.50 mm                  |
| <b>Type de module</b>           | Mise au point fixe               |
| <b>Interface</b>                | MIPI                             |

**Référence du connecteur d'accouplement. DF30FC-30DS-0.4V**

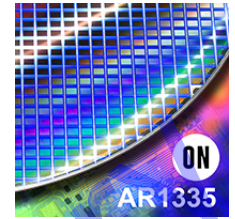


Connecteur d'accouplement sur la carte principale. Vendu séparément.

## Product Overview

### AR1335: 13 MP 1/3" CMOS Image Sensor

For complete documentation, see the data sheet.



The AR1335 is a 1/3.2-inch CMOS active-pixel digital image sensor with a pixel array of 4208H x 3120V. The AR1335 digital image sensor, features breakthrough 1.1  $\mu\text{m}$  pixel technology that delivers superior low-light image quality through leading sensitivity, quantum efficiency and linear full well. This allows image quality that rivals digital still cameras. With a sensor architecture focused on low power and a high Chief Ray Angle (CRA) for low Z-heights, the AR1335 is ideal for smartphone and other mobile device applications. It incorporates sophisticated on-chip camera functions such as windowing, mirroring, column and row skip modes, and snapshot mode. It is programmable through a simple two-wire serial interface. The AR1335 sensor can generate full resolution image at up to 30 frames per second (fps) and supports advanced video modes including 4K 30fps, 1080P 60fps and 720P 120fps.

### Features

- 13MP CMOS sensor with advanced 1.1  $\mu\text{m}$  pixel BSI technology
  - Data interfaces: 2,3 and 4 lane MIPI
  - Bit-depth compression available for MIPI: 10-8 and 10-6 to lower bandwidth
  - 3D synchronization controls to enable stereo video capture
  - 6.8 kbits one time programmable memory (OTPM)
  - Programmable controls: gain, horizontal and vertical blanking, auto black level offset correction, frame size/rate, exposure, left-right and top-bottom image reversal, window size, and panning
  - Two on-die phase-locked loop (PLL) oscillators for super low noise performance
  - On-chip temperature sensor
  - Bayer pattern horizontal down-size scaler
  - Simple two-wire fast-mode+ serial interface
- For more features, see the data sheet

### Applications

- Mobile
- 4K video capture
- High resolution still capture

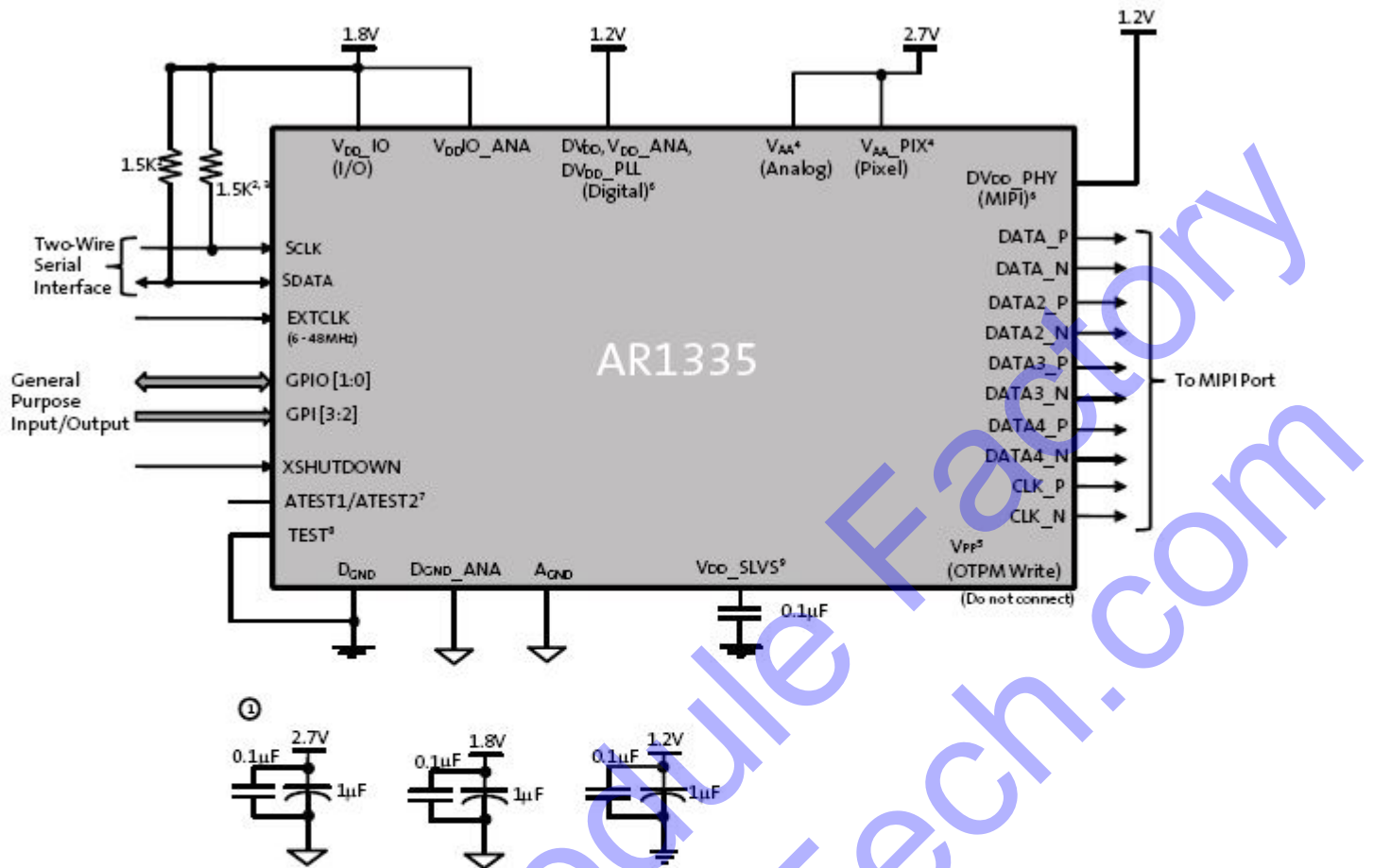
### End Products

- Smart Phone
- Digital Still Camera
- PC Camera
- Consumer devices

### Part Electrical Specifications

| Product              | Compliance             | Status | Type | Megapixels | Frame Rate (fps) | Optical Format | Shutter Type       | Pixel Size ( $\mu\text{m}$ ) | Output Interface | Color | Package Type |
|----------------------|------------------------|--------|------|------------|------------------|----------------|--------------------|------------------------------|------------------|-------|--------------|
| AR1335CSSC11SMD20    | Pb-free<br>Halide free | Active | CMOS | 13         | 30               | 1/3.2 inch     | Electronic Rolling | 1.1 x 1.1                    | MIPI             | RGB   |              |
| AR1335CSSC11SMKA0-CP | Pb-free<br>Halide free | Active | CMOS | 13         | 30               | 1/3.2 inch     | Electronic Rolling | 1.1 x 1.1                    | MIPI             | RGB   | ODCSP-63     |
| AR1335CSSC11SMKA0-CR | Pb-free<br>Halide free | Active | CMOS | 13         | 30               | 1/3.2 inch     | Electronic Rolling | 1.1 x 1.1                    | MIPI             | RGB   | ODCSP-63     |
| AR1335CSSC32SMD20    | Pb-free<br>Halide free | Active | CMOS | 13         | 30               | 1/3.2 inch     | Electronic Rolling | 1.1 x 1.1                    | MIPI             | RGB   |              |
| AR1335CSSM11SMD20    | Pb-free<br>Halide free | Active | CMOS | 13         | 30               | 1/3.2 inch     | Electronic Rolling | 1.1 x 1.1                    | MIPI             | RGB   |              |
| AR1335CSSM32SMD20    | Pb-free<br>Halide free | Active | CMOS | 13         | 30               | 1/3.2 inch     | Electronic Rolling | 1.1 x 1.1                    | MIPI             | RGB   |              |

## Application Diagram



For connectivity above:

- Notes:
- All power supplies should be adequately decoupled; recommended cap values are:
    - 2.7V: 1.0 $\mu$ F and 0.1 $\mu$ F
    - 1.2V: 1.0 $\mu$ F and 0.1 $\mu$ F
    - 1.8V: 1.0 $\mu$ F and 0.1 $\mu$ F
  - Resistor value 1.5k $\Omega$  is recommended, but may be greater for slower two-wire speed.
  - This pull-up resistor is not required if the controller drives a valid logic level on SCLK at all times.
  - VAA and VAA\_PIX must be tied together.
  - Internal charge pump is used for OTPM programming.
  - Digital and MIPI supply can be tied together.
  - ATEST1/AATEST2 must be left floating.
  - TEST pin must be tied to DGND.
  - VDD\_SLVS must be connected to DGND through a bypass cap (0.1 $\mu$ F).

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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