

# ARX3A0 IAS Module

## Prototype 1/10.3-inch 0.3 Mp Fast Rolling Shutter

### Advance Information

#### IAS1MOD-ARX3A0CSSM050110-GEVB

The ARX3A0 0.3 MP IAS module is part of the ON Semiconductor IAS family of modules offering standardized connectors, layout configuration and OTPM protocol. The modules are compatible with Evaluations systems and reference designs offered by ON Semiconductor. The modules are offered from ON Semiconductor as prototype modules not meant for customer production shipments. Customer can work with On Semiconductor Distribution partners for equivalent mass production versions of these modules.

Table 1. KEY PERFORMANCE PARAMETERS

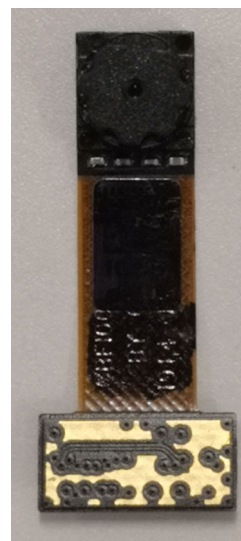
| Parameter                       | Value               |
|---------------------------------|---------------------|
| <b>Sensor</b>                   |                     |
| Sensor Part Number              | ARX3A0CSSM00SMD20   |
| <b>FUNCTIONAL</b>               |                     |
| Output                          | Raw                 |
| CFA                             | Mono                |
| Max. fps                        | 360 fps @ 560 x 560 |
| Interface                       | 2-lane MIPI         |
| <b>MECHANICAL</b>               |                     |
| Module size X*Y*Z(mm)           | 5.4 x 21.95 x 2.53  |
| <b>OPTICAL</b>                  |                     |
| Optical Format                  | 1/10.3"             |
| Image active resolution         | 560 (H) x 560 (V)   |
| Pixel size                      | 2.2 $\mu$ m         |
| Focus Range                     | 10 cm~Inf           |
| Hyperfocal Distance             | 19.8 cm             |
| Effective Focal Length (EFL)    | 1.34 mm             |
| Lens F number                   | 2.0                 |
| Lens Structure                  | 4P                  |
| Diagonal Filed of View (DFOV)   | 65.5°               |
| Vertical Field of View (VFOV)   | 49.0°               |
| Horizontal Field of View (HFOV) | 49.0°               |
| TV distortion                   | ≤1.0%               |



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### EVAL BOARD USER'S MANUAL



#### Applications

- IoT and Low Power Applications
- Machine Vision
- Artificial Intelligence

This document contains information on a new product. Specifications and information herein are subject to change without notice.

**Table 1. KEY PERFORMANCE PARAMETERS**

| Parameter                               | Value   |
|---|---|
| <b>ELECTRICAL</b>                       |   |
| Supply voltages                         | VDDIO: 1.8 V<br>VDD: 1.2 V<br>VAA: 2.7 V  |
| I2C Pull-up Resistor in Module (Note 1) | 1.5k  |
| <b>PROGRAMMABLE STORAGE</b>             |   |
| This module has programmable storage.   | EEPROM/OTPM is programmed per IAS programming specifications. Please refer to the IAS Module EEPROM and OTPM Application note (AND9865/D) for more information. |

1. ON Semiconductor recommends that host sites add a 1.5k pull-up resistor.

**Table 2. ORDERING INFORMATION**

| Part Number                   | Orderable Product Attribute Description                          |
|-------------------------------|--|
| IAS1MOD-ARX3A0CSSM050110-GEVB | ARX3A0 0.3MP 1/10.3" Mono Die in IAS module with 65.5° DFOV Lens |
| IAS1-ADPTR-DM3D1-GEVB         | Adapter Board to Demo3, DevWareX Supported                       |

**Table 3. MODULE CONNECTOR PINOUT**

| Pin Number | Pin Name | Pin Number | Pin Name  |
|------------|----------|------------|-----------|
| 1          | GPIO1    | 34         | GPI3      |
| 2          | GND      | 33         | GND       |
| 3          | GND      | 32         | EXTCLK    |
| 4          | DATA_P   | 31         | GND       |
| 5          | DATA_N   | 30         | DATA_2P   |
| 6          | GND      | 29         | DATA_2N   |
| 7          | CLK_P    | 28         | GND       |
| 8          | CLK_N    | 27         | NC        |
| 9          | GND      | 26         | NC        |
| 10         | NC       | 25         | GND       |
| 11         | NC       | 24         | VDD       |
| 12         | GND      | 23         | VDD       |
| 13         | VDDIO    | 22         | SDATA     |
| 14         | SCLK     | 21         | XSHUTDOWN |
| 15         | GPIO0    | 20         | GPI2      |
| 16         | GND      | 19         | GND       |
| 17         | VAA      | 18         | VAA       |

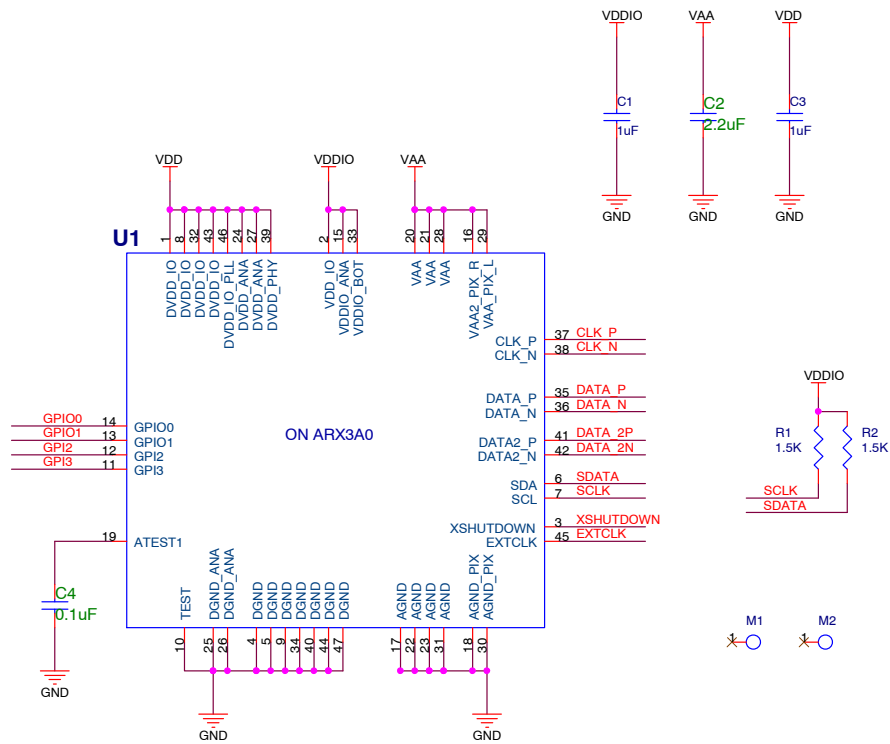


Figure 1. Module Schematic

**MODULE CONNECTOR**

| Part Number              | Connector Type | Pin Numbers | Mated Height | Contact Pitch |
|--------------------------|----------------|-------------|--------------|---------------|
| BM20B(0.8)-34DP-0.4V(51) | Plug           | 34          | 0.8 mm       | 0.4 mm        |

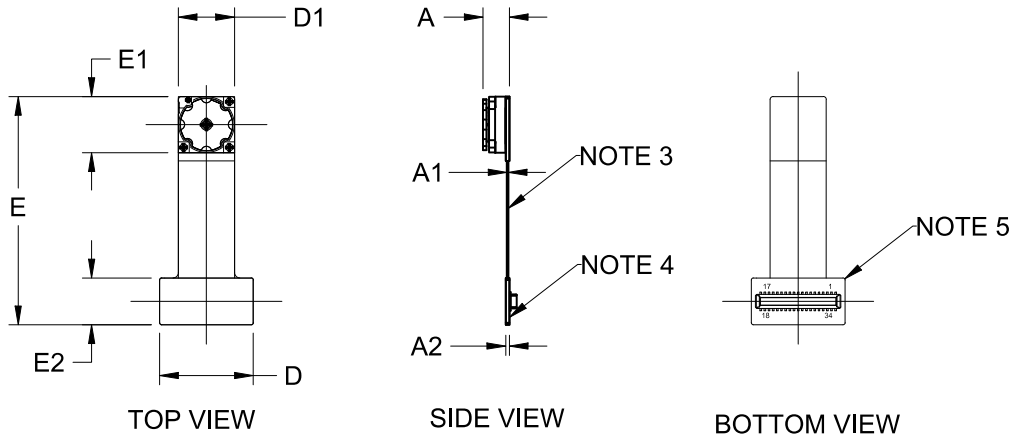
**Figure 2.**

**MECHANICAL DIMENSIONS****USE MODULE IDENTIFIER 9.0x21.95**

CASE MODGY

ISSUE 0

DATE 29 AUG 2019

**NOTES:**

1. DIMENSIONING AND TOLERANCING PER. ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. FLEXIBLE PRINT CIRCUIT  
NO CRACK AND BREAK AFTER BENDING.  
BENDING CONDITION: 10 TIMES, RADIUS 0.6mm AND 180°.
4. FLEXIBLE AND RIGID PRINTED CIRCUIT BOARD.
5. CONNECTOR: HRS BM20B(0.8)-34DP-0.4V(51)

| DIM | MILLIMETERS |       |       |
|-----|-------------|-------|-------|
|     | MIN.        | NOM.  | MAX.  |
| A   | 2.33        | 2.53  | 2.73  |
| A1  | 0.07        | 0.12  | 0.17  |
| A2  | 0.30        | 0.35  | 0.40  |
| D   | 8.90        | 9.00  | 9.10  |
| D1  | 5.25        | 5.40  | 5.55  |
| E   | 21.80       | 21.95 | 22.10 |
| E1  | 5.25        | 5.40  | 5.55  |
| E2  | 4.40        | 4.50  | 4.60  |

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