

AR0235CS PRISM Module

Prototype 1/2.8-inch 2 MP Module

Preliminary Document

PRISM1M-AR0235CSSM130110-GEVB

The AR0235CS 2.0 MP Premier Reference Image Sensor Module (PRISM) module is part of the **onsemi** PRISM family of modules offering standardized connectors, layout configuration and OTPM protocol. The modules are compatible with Evaluations systems and reference designs offered by **onsemi**. The modules are offered from **onsemi** as prototype modules not meant for customer production shipments. Customer can work with **onsemi** Distribution partners for equivalent mass production versions of these modules.

Table 1. KEY PERFORMANCE PARAMETERS

Parameter	Value
SENSOR	
Sensor Part Number	AR0235CSSM28SMD20-E
FUNCTIONAL	
Output	Raw
CFA	Monochrome
Max. fps	120 fps @ 1920 x 1200
Interface	4-lane MIPI D-PHY
MECHANICAL	
Module size X*Y*Z(mm)	17 x 30 x 15.76
Module Weight	≈4 g
OPTICAL	
Optical Format	1/2.8"
Image active resolution	1920 x 1200
Pixel size	2.8 μm
CRA	20° (MAX)
Focus	Fixed
Focus Range	0.23 m~infinite.
Hyperfocal Distance	0.47 m
Effective Focal Length (EFL)	2.3 mm
Lens F number	2.0
Lens Structure	1MG5G
Diagonal Field of View (DFOV)	160.4°
Vertical Field of View (VFOV)	83.8°
Horizontal Field of View (HFOV)	134.3°
F-theta Distortion	<1.28%



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Applications

- Bar Code Scanner
- Gesture Recognition
- 3D Scanning
- Positional Tracking
- Iris Scanning
- Augmented Reality
- Virtual Reality
- Biometrics
- Machine Vision

Table 1. KEY PERFORMANCE PARAMETERS (continued)

Parameter	Value
ELECTRICAL	
Supply voltages	VDDIO: 1.8 V (1.7 V < Vsupply < 1.9 V) VDD: 1.25 V (1.2 V < Vsupply < 1.3 V) VAA: 2.8 V (2.6 < Vsupply < 3.0 V)
I2C Pull-up Resistor in Module (Note 1)	No pull-up resistor in module
PROGRAMMABLE STORAGE	
This module has programmable storage.	AR0235 PRISM module has EEPROM programmed per PRISM programing specifications. EEPROM is used to store module information.

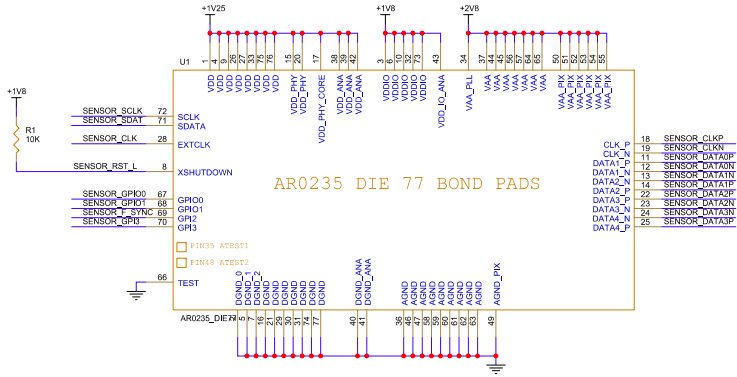
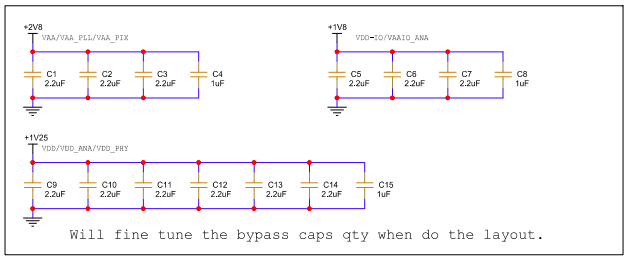
1. **onsemi** recommends that host sites add a 1.5k pull-up resistor.

Table 2. ORDERING INFORMATION

Part Number	Orderable Product Attribute Description
PRISM1M-AR0235CSSM130110-GEVB	AR0235CS 1 MP 1/2.8" Mono 28° CRA COB module with recon die in PRISM module with 160.4° DFOV Lens
PRISM1-ADPTR-DM3D1-GEVB	Adapter Board to Demo3, DevWareX Supported

Table 3. MODULE CONNECTOR PINOUT

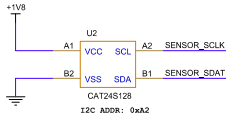
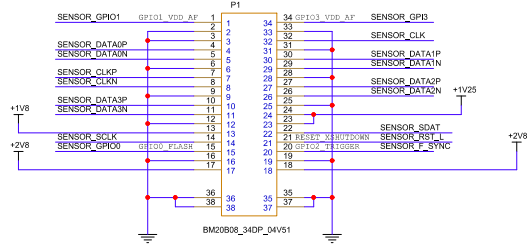
Pin Number	Pin Name	Pin Number	Pin Name
1	GPIO1	34	GPI3
2	DGND	33	DGND
3	DGND	32	EXTCLK
4	DATA0_P	31	DGND
5	DATA0_N	30	DATA1_P
6	DGND	29	DATA1_N
7	CLK_P	28	DGND
8	CLK_N	27	DATA2_P
9	DGND	26	DATA2_N
10	DATA3_P	25	DGND
11	DATA3_N	24	VDD
12	DGND	23	VDD
13	VDDIO	22	SDATA
14	SCLK	21	RESET_N
15	GPIO0	20	GPI2
16	DGND	19	AGND
17	VAA	18	VAA



I2C ADDR: 0x6C/6D

SIGNAL	GPIO FUNCTION OPTIONS
GPIO0	a. Flash output (default) b. All options in GPIO2 (if use as input)
GPIO1	a. Shutter output (default) b. 3D daisy chain communication output c. All options in GPIO2 (if use as input)
GPIO2	a. SADDR, second I2C device address b. Trigger signal for Slave Mode c. Standby
GPIO3	a. 3D daisy chain communication input b. All options in GPIO2

PRISM INTERFACE



MECHANICALS

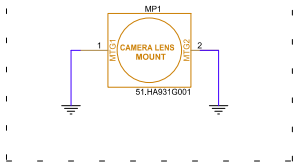


Figure 1. Typical Connections

MODULE CONNECTOR

Part Number	Number of Pins	A	B	C
BM20B(0.8)-34DP-0.4V(51)	Plug	34	0.8 mm	0.4 mm



Figure 2.

REVISION HISTORY

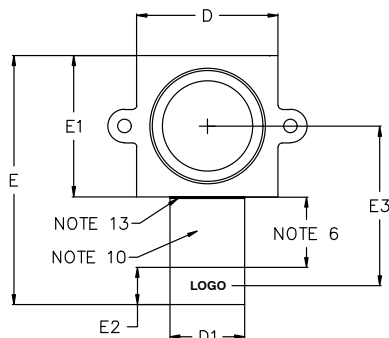
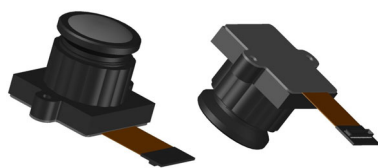
Revision	Description of Changes	Date
P1	Updated Module size X*Y*Z(mm) in Table 1.	1/13/2026
P2	Added module weight to Table 1.	3/24/2026

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

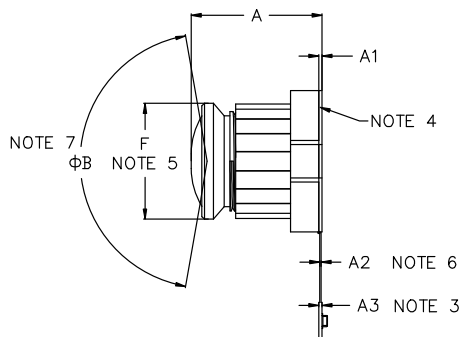
MECHANICAL DIMENSIONS

MODULE-34 17.00x30.00x15.76
CASE MODJB
ISSUE A

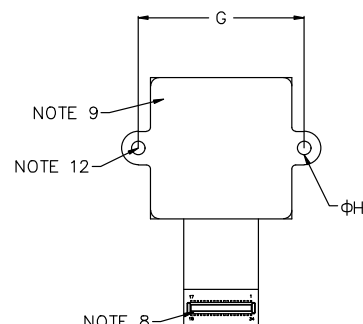
DATE 02 DEC 2025



TOP VIEW



SIDE VIEW



BOTTOM VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. RIGID PCB AREA.
4. RIGID PCB AND HOLDER.
5. LENS DIAMETER.
6. FLEXIBLE PRINTED CIRCUIT.
7. OPTICAL FIELD OF VIEW AT ΦB .
8. CONNECTOR: BM20B(0.8)-34DP-0.4V(51), 34PINS.
9. BACKSIDE GROUNDED.
10. MARK/LABEL AREA 4mm x 4mm.
11. OBJECT ORIENTATION IS DEFINED BY THE IMAGE SHOWN.
12. HOLDER HAS 2 PIN HOLES FOR ASSEMBLY ALIGN WITH PCB.
13. DISPENSE GLUE IN THIS AREA TO AVOID BENDING.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	15.61	15.76	15.91
A1	0.35	0.40	0.45
A2	0.10	0.15	0.20
A3	0.35	0.40	0.45
D	16.85	17.00	17.15
D1	8.80	9.00	9.20
E	29.80	30.00	30.20
E1	16.85	17.00	17.15
E2	4.30	4.50	4.70
E3	19.20 (REF)		
F	14.00 (REF)		
ΦB	160.40° (REF)		
G	20.00		
ΦH	1.60		

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