

Agilent CMOS Image Sensor Package Comparison Summary (CLCC Package vs. PQFP-J Lead Package)

Agilent ADCS-2021 vs. HDCS-2020

Agilent ADCS-1021 vs. HDCS-1020

Agilent ADCS-2121 vs. ADCS-2120

Agilent ADCS-1121 vs. ADCS-1120

Selection Guide

Introduction

The new Agilent ADCS-2021, ADCS-1021, ADCS-2121 and ADCS-1121 CMOS image sensors have the same digital features that are present in the Agilent HDCS-2020, HDCS-1020,

ADCS-2120 and ADCS-1120 CMOS image sensors respectively. The differences between these two groups of CMOS image sensors are in their package mechanical dimensions, summarized in the following sections.

Specification Comparison

Specifications	HDCS-2020 & ADCS-2120	HDCS-1020 & ADCS-1120	ADCS-2021 & ADCS-2121	ADCS-1021 & ADCS-1121
Package Type	J-lead	J-lead	CLCC	CLCC
Pin Count	32	32	32	32
Package Footprint	13.36 x 14.80 mm	13.36 x 14.80 mm	10.66 x 10.66 mm	10.66 x 10.66 mm
Lead width	0.48 mm	0.48 mm	0.51 mm	0.51 mm
Lead pitch	1.27 mm	1.27 mm	1.02 mm	1.02 mm
Package height	3.80 mm	3.80 mm	1.65 mm	1.65 mm
Optical center for X-axis*	6.08 mm	6.08 mm	5.33 mm	5.33 mm
Optical center for Y-axis*	5.75 mm	6.01 mm	4.38 mm	4.38 mm
Pixel Size	7.4 μm x 7.4 μm	7.4 μm x 7.4 μm	7.4 μm x 7.4 μm	7.4 μm x 7.4 μm
Resolution	VGA	CIF	VGA	CIF
Color Filter Array	HDCS-2020 (Color Bayer Pattern) ADCS-2120 (Mono)	HDCS-1020 (Color Bayer Pattern) ADCS-1120 (Mono)	ADCS-2021 (Color Bayer Pattern) ADCS-2121 (Mono)	ADCS-1021 (Color Bayer Pattern) ADCS-1121 (Mono)

* For further details, please refer to the package drawings in the next few pages.

Please refer to the respective datasheets for ADCS-2021 & ADCS-1021, as well as ADCS-2121 & ADCS-1121, for additional product specifications.

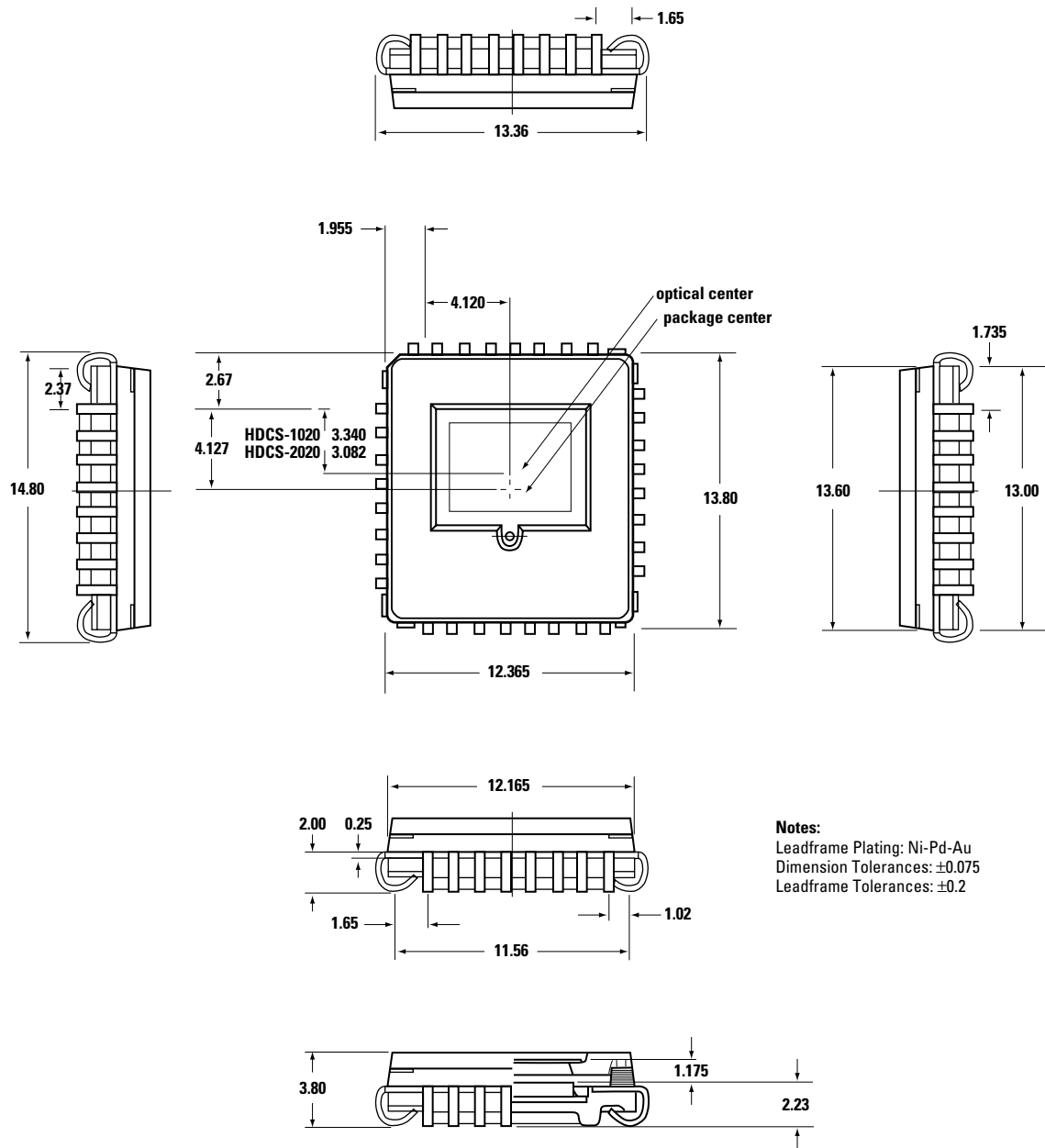
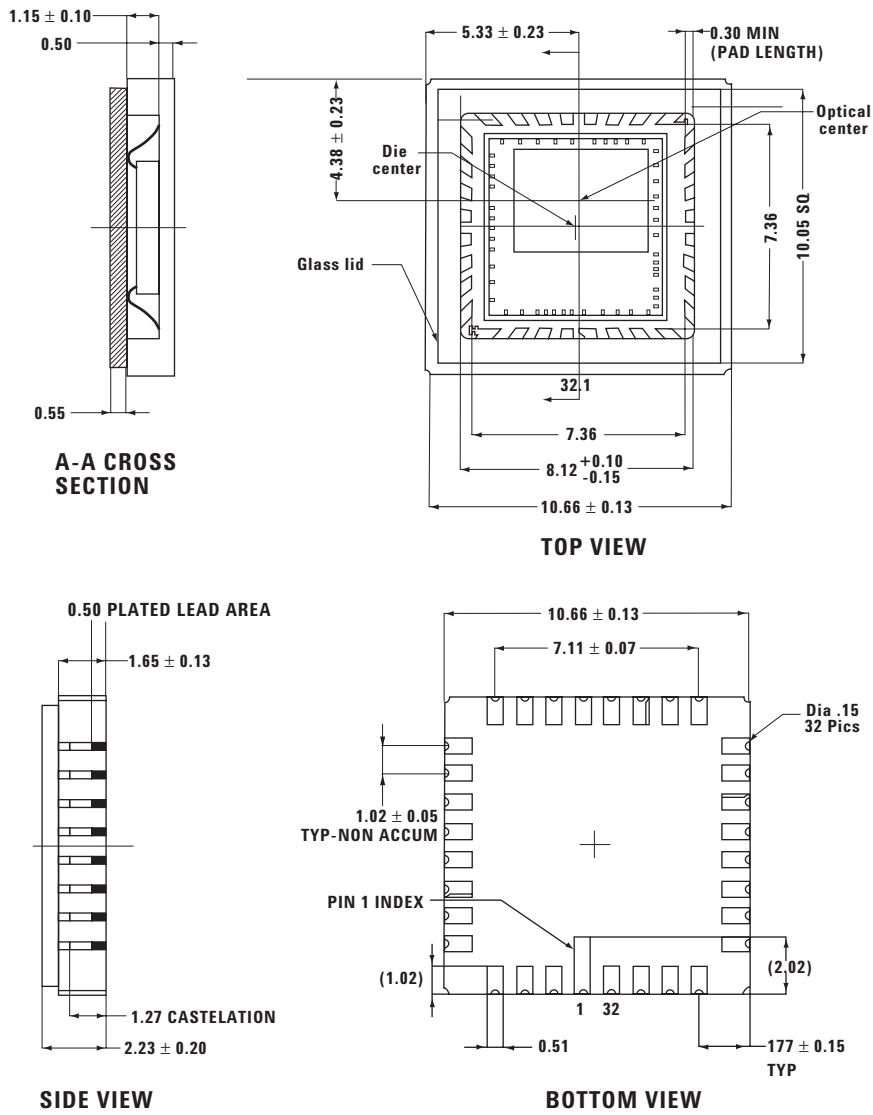


Figure 1. Dimensions of PQFP J-lead package for Agilent HDCS-2020, ADCS-2120, HDCS-1020 and ADCS-1120 CMOS image sensors.



Note: This packaging complies with JEDEC Moisture Sensitivity Level 3.

Figure 2. Dimensions of the CLCC package for Agilent ADCS-2021, ADCS-2121, ADCS-1021 and ADCS-1121 CMOS image sensors.

Pinout Comparison

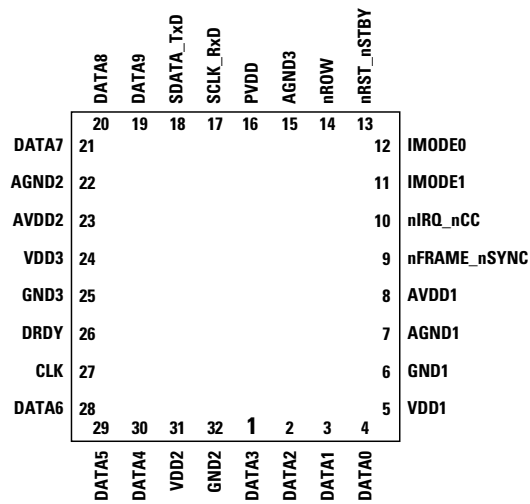


Figure 3. Pinout diagram of ADCS-2021 & ADCS-2121 (live-bug view)

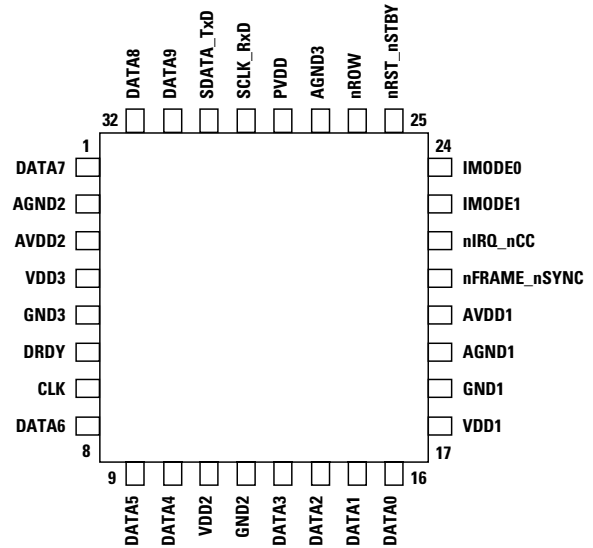


Figure 4. Pinout diagram of HDCS-2020 & ADCS-2120 (live-bug view)

Pinout Differences Between ADCS-2021/ADCS-2121 and HDCS-2020/ADCS-2120 CMOS Image Sensors

ADCS-2021 & ADCS-2121 Pkg Pin Numbers	HDCS-2020 & ADCS-2120 Pkg Pin Numbers	Signal Name	Type	Description
11	23	IMODE1	Input	If = 1, Half duplex UART slave interface mode If = 0, Synchronous serial slave interface mode
12	24	IMODE0	Input	Always = 0
27	7	CLK	Input	System Clock
13	25	nRST_nSTBY	Input	Active low system reset input and stand-by mode input
19, 20, 21, 28, 29, 30, 1, 2, 3, 4	31, 32, 1, 8, 9, 10, 13, 14, 15, 16	Data 9, Data 8, ... Data 1, Data 0	Output	Parallel digitized pixel data out
26	6	DRDY	Output	Data valid for parallel digitized pixel data out
18	30	SDATA_TxD	Input/output open drain	Serial output data
17	29	SCLK_RxD	Input	Transfer clock/serial data input
9	21	nFRAME_nSYNC	Output	Signals end of frame
14	26	nROW	Output	Signals end of row
10	22	nIRQ_nCC	Output	Programmable interrupt request
5, 31, 24	17, 11, 4	VDD	VDD	Digital power supply
6, 32, 35	18, 12, 5	GND	GND	Digital ground
16	28	PVDD	PVDD	Array power supply
8, 23	20, 3	AVDD	AVDD	Analog power supply
7, 22, 1	19, 2, 27	AGND	AGND	Analog, array, and substrate ground

Pinout Comparison

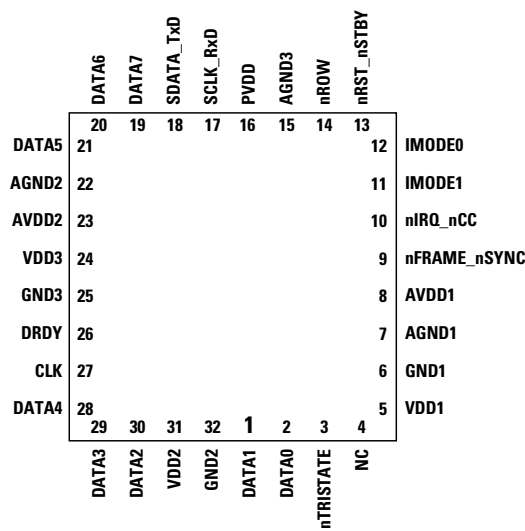


Figure 5. Pinout diagram of ADCS-1021 & ADCS-1121 (live-bug view)

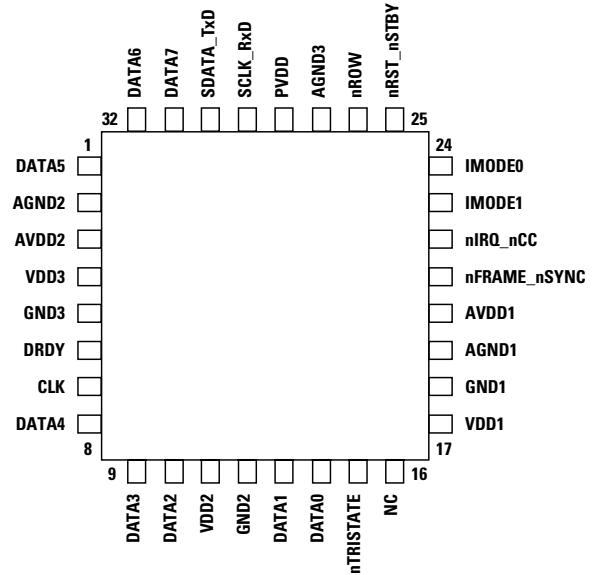
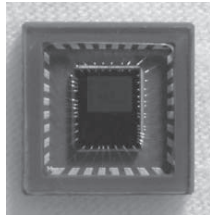


Figure 6. Pinout diagram of HDCS-1020 & ADCS-1120 (live-bug view)

Pinout Differences Between ADCS-1021/ADCS-1121 and HDCS-1020/ADCS-1120 CMOS Image Sensors

ADCS-1021 & ADCS-1121 Pkg Pin Numbers	HDCS-1020 & ADCS-1120 Pkg Pin Numbers	Signal Name	Type	Description
11	23	IMODE1	Input	If = 1, Half duplex UART slave interface mode If = 0, Synchronous serial slave interface mode
12	24	IMODE0	Input	Always = 0
27	7	CLK	Input	System Clock
13	25	nRST_nSTBY	Input	Active low system reset input and stand-by mode input
19, 20, 21, 28, 29, 30, 1, 2	31, 32, 1, 8, 9, 10, 13, 14	Data 7, Data 6, ... Data 1, Data 0	Output	Parallel digitized pixel data out
26	6	DRDY	Output	Data valid for parallel digitized pixel data out
18	30	SDATA_TxD	Input/output open drain	Serial output data
17	29	SCLK_RxD	Input	Transfer clock/serial data input
9	21	nFRAME_nSYNC	Output	Signals end of frame
14	26	nROW	Output	Signals end of row
10	22	nIRQ_nCC	Output	Programmable interrupt request
5, 31, 24	17, 11, 4	VDD	VDD	Digital power supply
6, 32, 25	18, 12, 5	GND	GND	Digital ground
16	28	PVDD	PVDD	Array power supply
8, 23	20, 3	AVDD	AVDD	Analog power supply
7, 22, 15	19, 2, 27	AGND	AGND	Analog, array, and substrate ground
3	15	nTRISTATE	Input	Disables sensor tristate mode
4	16	NC	NC	No connect

Visual differences between ADCS-1021/ADCS-1121 and HDCS-1020/ADCS-1120 CMOS Image Sensors



**Figure 7. ADCS-1021 & ADCS-1121:
Live-bug view of the CLCC package.**

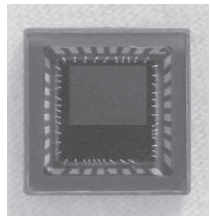


**Figure 8. ADCS-1021 & ADCS-1121:
Dead-bug view of the CLCC package.**

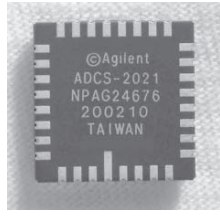


**Figure 9. HDCS-1020 & ADCS-1120:
Live-bug view of the PQFP-J lead package.**

Visual differences between ADCS-2021/ADCS-2121 and HDCS-2020/ADCS-2120 CMOS Image Sensors



**Figure 10. ADCS-2021 & ADCS-2121:
Live-bug view of the CLCC package.**



**Figure 11. ADCS-2021 & ADCS-2121:
Dead-bug view of the CLCC package.**



**Figure 12. HDCS-2020 & ADCS-2120:
Live-bug view of the PQFP-J lead package.**

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