ON Semiconductor®

Product Bulletin

Document # :PB22267Z
Issue Date: 25 April 2018

Title of Change:	AR0143AT Datasheet Modification.
Effective date:	25 April 2018
Contact information:	Contact your local ON Semiconductor Sales Office.
Type of notification:	This Product Bulletin is for notification purposes only. ON Semiconductor will proceed with implementation of this change upon publication of this Product Bulletin.
Change category:	☐ Wafer Fab Change ☐ Assembly Change ☐ Test Change ☒ Other _____

Change Sub-Category(s):

☐ Manufacturing Site Change/Addition
☐ Manufacturing Process Change
☐ Material Change
☐ Product specific change
☒ Datasheet/Product Doc change
☐ Shipping/Packaging/Marking
☐ Other: _____

Sites Affected:	ON Semiconductor Sites:	External Foundry/Subcon Sites:
	None	None

Description and Purpose:

1. **There was a typo in one of the power consumption tables in Table 16. The maximum analog operating current should read as 70mA in this table.**

AR0143 DS Rev 0 Table 16 Typo:

Table 16. OPERATING CURRENT CONSUMPTION IN PARALLEL 12-BIT 3-EXPOSURE HDR

Current Type	Condition	Symbol	Voltage	Min	Typ	Max	Unit
Analog Operating Current	Streaming Full Res	I_{AA}	2.8	–	50	50	mA
Digital Operating Current	Streaming Full Res	I_{DD}	1.2	–	125	200	mA
PHY Supply Current	Streaming Full Res	I_{DD_PHY}	1.2	–	3	10	mA
Pixel Supply Current	Streaming Full Res	I_{AA_PIX}	2.8	–	10	13	mA
SLVS Supply Current	Streaming Full Res	I_{DD_SLVS}	1.2	–	0	0	mA

NOTE: Operating currents measured under the following conditions:
a. VAA and VAA_PIX are tied together
b. VDD_IO_PHY and VDD_IO are dependent on system design and environment, therefore not listed.
c. PLL enabled and PIXCLK set to 78MHz
d. 3-exposure 12-bit Parallel mode at 30fps
e. Ta=55°C

2. **Changed Max Analog Operating Current (page 22)**

Old

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Table 16. OPERATING CURRENT CONSUMPTION IN PARALLEL 12-BIT 3-EXPOSURE HDR

Current Type	Condition	Symbol	Voltage	Min	Typ	Max	Unit
Analog Operating Current	Streaming Full Res	I_{AA}	2.8	–	50	50	mA
Digital Operating Current	Streaming Full Res	I_{DD}	1.2	–	125	200	mA
PHY Supply Current	Streaming Full Res	I_{DD_PHY}	1.2	–	3	10	mA
Pixel Supply Current	Streaming Full Res	I_{AA_PIX}	2.8	–	10	13	mA
SLVS Supply Current	Streaming Full Res	I_{DD_SLVS}	1.2	–	0	0	mA

NOTE: Operating currents measured under the following conditions:
a. VAA and VAA_PIX are tied together
b. VDD_IO_PHY and VDD_IO are dependent on system design and environment, therefore not listed.
c. PLL enabled and PIXCLK set to 78MHz
d. 3-exposure 12-bit Parallel mode at 30fps
e. Ta=55°C

New

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Table 16. OPERATING CURRENT CONSUMPTION IN PARALLEL 12−BIT 3−EXPOSURE HDR

Current Type	Condition	Symbol	Voltage	Min	Typ	Max	Unit
Analog Operating Current	Streaming Full Res	I_{AA}	2.8	−	50	70	mA
Digital Operating Current	Streaming Full Res	I_{DD}	1.2	−	125	200	mA
PHY Supply Current	Streaming Full Res	I_{DD_PHY}	1.2	−	3	10	mA
Pixel Supply Current	Streaming Full Res	I_{AA_PIX}	2.8	−	10	13	mA
SLVS Supply Current	Streaming Full Res	I_{DD_SLVS}	1.2	−	0	0	mA

NOTE: Operating currents measured under the following conditions:
a. VAA and VAA_PIX are tied together
b. VDD_IO_PHY and VDD_IO are dependent on system design and environment, therefore not listed.
c. PLL enabled and PIXCLK set to 78MHz
d. 3−exposure 12−bit Parallel mode at 30fps
e. Ta=55°C

3. **Ordering Information Table, Product Description shows that it is a 1.4" sensor instead of 1/4" sensor. The rest of the Datasheet (including the OPN) shows that AR0143 is a 1/4" sensor, no impact to customers.**

AR0143 DS Rev 1 Table 2 Changes:

Table 2. ORDERING INFORMATION

Part Number	Product Description
AR0143ATSC00XUEA0-DPBR	1.3 MP, 1.4", 0deg 9x9 iBGA, Dry pack with PF
AR0143ATSC00XUEA0-DRBR	1.3 MP, 1.4", 0deg 9x9 iBGA, Dry pack without PF
AR0143ATSC00XUEA0-TPBR	1.3 MP, 1.4", 0deg 9x9 iBGA, Tape & reel with PF
AR0143ATSC00XUEA0-TRBR	1.3 MP, 1.4", 0deg 9x9 iBGA, Tape & reel without PF
AR0143ATSC00XUEAH3-GEVB	1.3 MP, 1.4", 0deg 9x9 iBGA, Parallel/MIPI, HB
MARS1−AR0143ATS−GEVB	1.3 MP, 1.4", 0deg 9x9 iBGA, MARS Parallel
MARS1−AR0143ATSCS−GEVB	1.3 MP, 1.4", 0deg 9x9 iBGA, MARS MIPI

NOTE: Contact the ON Semiconductor sales or marketing representative to discuss your specific requirements.

All 7 highlighted values need to change from 1.4" to 1/4"

4. **I/O Timing tables require an update to the $t_{Data\_Invalid}$ maximum values (and associated max t_{PFH}, t_{PLH}, t_{PFL}, and t_{PLL} values). The max values need to change from 12.3ns to 10.3ns.**

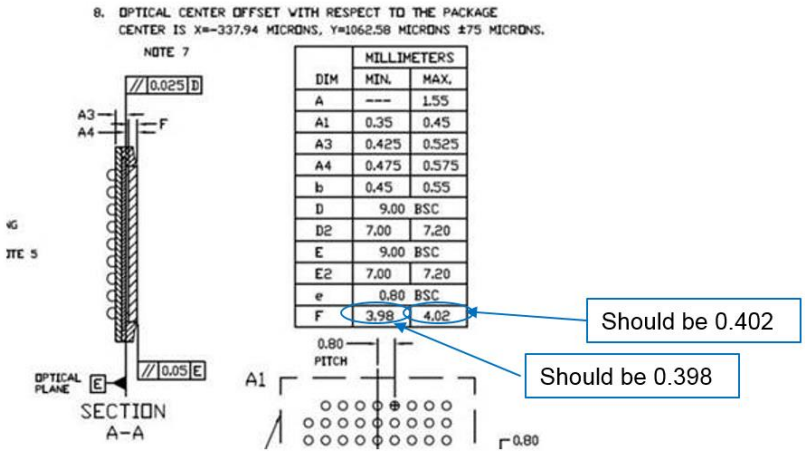
AR0143 DS Rev 1 Table 6 and Table 7 Changes:

f_{PIXCLK}	PIXCLK frequency	Default, Nominal Voltages	6	−	78	MHz
$t_{Data\_Invalid}$	PIXCLK to data not valid	PIXCLK slew rate = 7 Data slew rate = 7	2	−	12.3	ns
t_{PFH}	PIXCLK to FV HIGH	PIXCLK slew rate = 7 Data slew rate = 7	2	−	12.3	ns
t_{PLH}	PIXCLK to LV HIGH	PIXCLK slew rate = 7 Data slew rate = 7	2	−	12.3	ns
t_{PFL}	PIXCLK to FV LOW	PIXCLK slew rate = 7 Data slew rate = 7	2	−	12.3	ns
t_{PLL}	PIXCLK to LV LOW	PIXCLK slew rate = 7 Data slew rate = 7	2	−	12.3	ns

All 5 highlighted values need to change from 12.3 to 10.3

5. Package dimensions has a typo in the dimension F (package glass thickness).

AR0143 DS Rev 1 Package Dimensions Changes:



DIM	MILLIMETERS MIN.	MAX.
A	---	1.55
A1	0.35	0.45
A3	0.425	0.525
A4	0.475	0.575
b	0.45	0.55
D	9.00 BSC	
D2	7.00	7.20
E	9.00 BSC	
E2	7.00	7.20
e	0.80 BSC	
F	3.98	4.02

List of Affected Standard Parts:

AR0143ATSC00XUEA0-DPBR
AR0143ATSC00XUEA0-DPBR1
AR0143ATSC00XUEA0-DRBR
AR0143ATSC00XUEA0-DRBR1
AR0143ATSC00XUEA0-TPBR
AR0143ATSC00XUEA0-TRBR

Appendix A: Changed Products

D

Product	Customer Part Number
AR0143ATSC00XUEA0-DPBR	
AR0143ATSC00XUEA0-DPBR1	
AR0143ATSC00XUEA0-DRBR	
AR0143ATSC00XUEA0-DRBR1	
AR0143ATSC00XUEA0-TPBR	
AR0143ATSC00XUEA0-TRBR	