



## Final Product/Process Change Notification

Document #:FPCN22880X

Issue Date:29 Oct 2019

<b>Title of Change:</b>	Process change fix for AR0521 to prevent static induced defects.							
<b>Proposed First Ship date:</b>	05 Feb 2020 or earlier if approved by customer							
<b>Contact Information:</b>	Contact your local ON Semiconductor Sales Office or <Geethakrishnan.Narasimhan@onsemi.com>							
<b>PCN Samples Contact:</b>	Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com>. Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.							
<b>Additional Reliability Data:</b>	Contact your local ON Semiconductor Sales Office or Amy.Wu@onsemi.com							
<b>Type of Notification:</b>	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com							
<b>Marking of Parts/ Traceability of Change:</b>	Date code beginning 1st week of Feb 2020							
<b>Change Category:</b>	Wafer Fab Change							
<b>Change Sub-Category(s):</b>	Manufacturing Process Change							
<b>Sites Affected:</b>								
<b>ON Semiconductor Sites</b>	<b>External Foundry/Subcon Sites</b>							
None	TSMC Semiconductor, Taiwan							
<b>Description and Purpose:</b>								
<p>The anti-reflective dielectric film above the image sensor array is being changed to a higher dielectric constant foundry proprietary film along with a UV cure. The purpose is to prevent any damage to the sensor array from static charges during subsequent processing in assembly or install in a module.</p> <p>There is no change to BOM, form, fit or function of the product. There is no product marking change as a result of this change.</p> <p>Units with the proposed process change will be identified with a date code beginning 1<sup>st</sup> week of Feb 2020.</p> <table border="1"> <thead> <tr> <th></th> <th>Before Change Description</th> <th>After Change Description</th> </tr> </thead> <tbody> <tr> <td><b>Other Changes</b></td> <td>Anti-reflective Dielectric Film above image sensor array</td> <td>Foundry proprietary anti-reflective higher dielectric constant film and UV curing</td> </tr> </tbody> </table> <p>There are no product marking changes as a result of this change.</p>				Before Change Description	After Change Description	<b>Other Changes</b>	Anti-reflective Dielectric Film above image sensor array	Foundry proprietary anti-reflective higher dielectric constant film and UV curing
	Before Change Description	After Change Description						
<b>Other Changes</b>	Anti-reflective Dielectric Film above image sensor array	Foundry proprietary anti-reflective higher dielectric constant film and UV curing						

**Reliability Data Summary:****QV DEVICE NAME: AR0522****PACKAGE : mPLCC**

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=105°C, 100 % max rated Vcc	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/80
TC	JESD22-A104	Ta= -55°C to +125°C	1000 cyc	0/120
THB	JESD22-A101D	85°C/ 85% RH, with bias	1008 hrs	0/80
PC	J-STD-020 JESD-A113	MSL 4 @ 260 °C		Pass
HBM	JESD22-A114	HBM 2KV		0/3
CDM	JESD22-C101	CDM 500V		0/3
LU	JESD78	LU 1.5Vcc		0/6
SD	JSTD002	Method S1		0/45

**Electrical Characteristics Summary:****Electrical Characteristics are not impacted. All parameters are within spec and comparable to current baseline. See Table below.**

30 samples per lot		Lot1						Lot2						Lot3						Unit
Temp: 60C (as per DS)		Avg (POR)	Avg (New)	Sig (POR)	Sig (New)	CPK (POR)	CPK (New)	Avg (POR)	Avg (New)	Sig (POR)	Sig (New)	CPK (POR)	CPK (New)	Avg (POR)	Avg (New)	Sig (POR)	Sig (New)	CPK (POR)	CPK (New)	
SoftStby (clkON)	IDD-IO:	0.052	0.051	0.001	0.001	7.97	6.59	0.052	0.051	0.001	0.001	9.99	8.80	0.053	0.052	0.001	0.001	8.58	8.94	mA
	IDD:	2.178	2.207	0.043	0.060	11.67	8.36	2.189	2.205	0.029	0.056	17.13	8.93	2.210	2.154	0.049	0.043	10.16	12.07	mA
	IAA:	0.066	0.066	0.001	0.001	12.21	12.70	0.066	0.066	0.001	0.002	13.14	10.72	0.066	0.066	0.002	0.001	10.27	13.42	mA
SoftStby (clkOFF)	IDD-IO:	0.028	0.028	0.002	0.002	1.31	1.35	0.028	0.028	0.002	0.002	1.45	1.52	0.028	0.028	0.002	0.002	1.34	1.38	mA
	IDD:	0.235	0.261	0.032	0.045	5.83	4.01	0.245	0.266	0.027	0.032	6.74	5.51	0.285	0.230	0.040	0.031	4.31	6.16	mA
	IAA:	0.064	0.064	0.001	0.001	13.05	13.51	0.064	0.064	0.001	0.002	13.91	11.64	0.064	0.064	0.002	0.001	11.10	14.60	mA
HardStby (clkON)	IDD-IO:	0.054	0.054	0.001	0.002	4.13	3.55	0.054	0.054	0.001	0.001	5.15	4.70	0.056	0.055	0.001	0.001	4.33	4.73	mA
	IDD:	0.574	0.604	0.037	0.053	10.21	6.89	0.585	0.608	0.030	0.040	12.47	9.04	0.627	0.564	0.046	0.036	7.70	10.50	mA
	IAA:	0.005	0.004	0.001	0.001	3.18	3.69	0.005	0.005	0.001	0.001	3.18	3.24	0.004	0.005	0.001	0.001	3.25	3.35	mA
HardStby (clkOFF)	IDD-IO:	0.036	0.035	0.002	0.002	5.22	4.87	0.035	0.035	0.002	0.002	5.45	5.54	0.036	0.035	0.002	0.002	5.27	5.07	mA
	IDD:	0.247	0.274	0.034	0.048	5.39	3.67	0.257	0.279	0.029	0.034	6.20	5.04	0.300	0.241	0.042	0.033	3.94	5.68	mA
	IAA:	0.002	0.002	0.000	0.000	8.97	10.23	0.002	0.002	0.000	0.000	9.29	9.31	0.002	0.002	0.000	0.000	9.15	9.98	mA
Operating current 5M full resolution 12 bit Linear 30fps	IDD-IO:	0.057	0.057	0.004	0.005	5.74	4.36	0.056	0.055	0.004	0.004	5.81	5.59	0.057	0.057	0.003	0.004	6.17	5.64	mA
	IDD:	93.33	93.23	1.70	1.45	5.05	5.94	93.07	93.13	1.86	1.58	4.64	5.47	91.58	92.40	1.74	1.78	5.26	4.99	mA
	IAA:	69.32	68.46	3.34	3.39	3.36	3.40	69.46	68.72	3.65	2.94	3.06	3.88	68.39	69.24	3.45	3.50	3.34	3.22	mA

**List of Affected Parts:**

**Note:** Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal**.

Part Number	Qualification Vehicle
AR0521SR2M09SURA0-DR1	AR0521SR2C09SURA0-DP
AR0521SR2M09SURA0-DR	AR0521SR2C09SURA0-DP
AR0521SR2M09SURA0-DP1	AR0521SR2C09SURA0-DP
AR0521SR2M09SURA0-DP	AR0521SR2C09SURA0-DP
AR0521SR2C09SURA0-DR1	AR0521SR2C09SURA0-DP
AR0521SR2C09SURA0-DR	AR0521SR2C09SURA0-DP
AR0521SR2C09SURA0-DP1	AR0521SR2C09SURA0-DP
AR0521SR2C09SURA0-DP	AR0521SR2C09SURA0-DP