



Initial Product/Process Change Notification

Document #: IPCN25277Z

Issue Date: 17 May 2023

Title of Change:	Transfer AS0149 Rev 1.0 from TSMC Fab 12 to Fab 14	
Proposed Changed Material First Ship Date:	01 Apr 2024 or earlier if approved by customer	
Current Material Last Order Date:	01 Nov 2023 <i>Orders received after the Current Material Last Order Date expiration are to be considered as orders for new changed material as described in this PCN. Orders for current (unchanged) material after this date will be per mutual agreement and current material inventory availability.</i>	
Current Material Last Delivery Date:	31 Mar 2024 <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i>	
Product Category:	Active components – Integrated circuits	
Contact information:	Contact your local onsemi Sales Office or Mike.Webster@onsemi.com	
PCN Samples Contact:	Contact your local onsemi Sales Office to place sample order. Sample requests are to be submitted no later than 45 days after publication of this change notification. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.	
Additional Reliability Data:	Contact your local onsemi Sales Office or Mike.Webster@onsemi.com	
Type of Notification:	This is an Initial Product/Process Change Notification (IPCN) sent to customers. An IPCN is an advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan. The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN). This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 6 months prior to implementation of the change. In case of questions, contact < PCN.Support@onsemi.com >.	
Change Category		
Category	Type of Change	
Process - Wafer Production	Move of all or part of wafer fab to a different location/site/subcontractor	
Description and Purpose:		
<p>onsemi currently manufactures the Rev 1.0 AS0149 front-end CMOS process at the TSMC Fab 12 facility; once product completes this process in Fab 12, it is then delivered to TSMC Fab 14 for the backside Imager process. Both Fab 12 and Fab 14 are located in Taiwan, but at separate locations. As part of the overall capacity strategy at TSMC, we are moving all Imager manufacturing out of FAB 12 and into FAB 14. We have qualified other products from the same family at Fab 14 already, including the AR0147 and AS0149 Rev 1.1 products. This qualification will leverage qual by similarity from the previous qualification. The new TSMC Fab 14 facility is fully automotive certified and is currently running the same generation of product/process for onsemi. These facilities use the same equipment and manufacturing processes. There are no product material changes as a result of this change.</p>		
Change	From	To
Front End Fabrication Facility	TSMC Fab 12	TSMC Fab 14
There is no product marking change as a result of this change.		

Reason / Motivation for Change:	Source/Supply/Capacity Changes		
Anticipated impact on fit, form, function, reliability, product safety or manufacturability:	The device will be qualified and validated based on the same Product Specification. No anticipated impacts.		
Sites Affected:			
onsemi Sites		External Foundry/Subcon Sites	
None		TSMC Semiconductor, Taiwan	
Marking of Parts/ Traceability of Change:	Date Code		
Reliability Data Summary: QV DEVICE NAME: AR0147ATSC00XUEA5-DRBR PACKAGE: 8mmx7mm iBGA			
Test	Specification	Condition	Interval
HTOL	JESD22-A108	Ta= <u>125</u> °C Tj, 100 % max rated Vcc	1008 hrs
ELFR	AEC Q100-008	Ta= <u>125</u> °C	24 hrs
PC	J-STD-020 JESD-A113	MSL 3 @ 260 °C	
HTSL	JESD22-A103	Ta= <u>150</u> °C	1008 hrs
TC	JESD22-A104	Ta= <u>-55</u> °C to <u>+125</u> °C	1000 cyc
HAST	JESD22-A110	110°C, 85% RH, with bias	264 hrs
uHAST	JESD22-A118	110°C, 85% RH, unbiased	264 hrs
WBS	AEC Q100-001 AEC Q003	CPK >1.67	
WBP	MIL-STD883 Method 2011 AEC Q003	CPK >1.67, 0 Fails after TC (test #A4)	
HBM	AEC Q100-002	0 Fails; 2KV HBM	
CDM	AEC Q100-011	0 Fails: 750V for corner pins, 500V all other pins	
LU	AEC Q100-004	0 Fails	
ED	AEC Q100-009 AEC Q003	Elect. Distribution: (Test @ C/ R/ H)	
Estimated date of Qualification Completion: 10/10/2023			
Electrical Characteristics Summary: Electrical characteristics are not impacted. Full electrical performance will be supplied upon FPCN.			



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List of 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](#).

Current Part Number	New Part Number	Qualification Vehicle
AS0149ATSC00XUEA0-TRBR	NA	AS0149ATSC00XUEA0-TRBR