



Final Product/Process Change Notification

Document #:FPCN24140Z

Issue Date:11 Apr 2022

Title of Change:	Addition of onsemi Seremban, Malaysia as an assembly site for iBGA packaging
Proposed Changed Material First Ship Date:	11 Oct 2022 or earlier if approved by customer
Current Material Last Order Date:	31 Aug 2022 <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:	10 Oct 2022 <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 Geethakrishnan.Narasimhan@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.
Sample Availability Date:	06 Apr 2022
PPAP Availability Date:	31 May 2022
Additional Reliability Data:	Contact your local onsemi Sales Office or Amy.Wu@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. The change will be implemented at 'Proposed Change Material First Ship Date' in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements. onsemi will consider this proposed change and it's conditions acceptable, unless an inquiry is made in writing within 45 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com .

Change Category

Category	Type of Change
Equipment	Production from a new equipment/tool which uses the same basic technology (replacement equipment or extension of existing equipment pool) without change of process.
Process - Assembly	Move of all or part of assembly to a different location/site/subcontractor., Die attach material

Description and Purpose:

In order to provide higher and flexible capacity to meet growing demand, onsemi is adding an additional site for wafer backgrind and iBGA assembly at its Seremban internal manufacturing facility. Key material inputs and manufacturing site changes are shown in the table below. Units assembled in Seremban will be tested at KYEC (Taiwan), which is already used to test units assembled at Kingpak and ASEM. There is no change to the final test program. Kingpak and ASEM will continue to test units assembled at their respective sites as well.

	Before Change Description	After Change Description
Assembly Site / Final Test Site	Kingpak (Taiwan) / KYEC (Taiwan) Kingpak / Kingpak ASEM (Malaysia) / ASEM ASEM / KYEC	Kingpak (Taiwan) / KYEC (Taiwan) Kingpak (Taiwan) / Kingpak ASEM (Malaysia) / ASEM ASEM (Malaysia) / KYEC onsemi ISMF (backgrind), onsemi (assembly) / KYEC
Package Substrate	ASEK SCC	ASEK SCC

Die Attach Epoxy	DA Epoxy 2053s	DA Epoxy 2053s
Encapsulation	Nagase T693, Henkel FP4802	Nagase T693, Henkel FP4802
Glass	Crystal Optech BBAR 125mmx125mm	Crystal Optech BBAR 125mmx125mm
Glass Attach Epoxy	EMI 1748-HTG	NAGASE T694
Wire	Tanaka 0.9mils Au wire	Tanaka 0.9mils Au wire

There is a product material change in glass attach epoxy but supplier is same as that for encapsulation.

	Current (Kingpak)	Proposed (ON Semiconductor)
Product marking change		

There are product marking changes as a result of this change as shown above.

Reason / Motivation for Change:	Source/Supply/Capacity Changes
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Anticipated impact on fit, form, function, reliability, product safety or manufacturability:	<p>The device has been qualified and validated based on the same Product Specification. The device has successfully passed the qualification tests. Potential impacts can be identified, but due to testing performed by onsemi in relation to the PCN, associated risks are verified and excluded.</p> <p>No anticipated impacts.</p>
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Sites Affected:	
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onsemi Sites	External Foundry/Subcon Sites
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onsemi Seremban, Malaysia	None
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Marking of Parts/ Traceability of Change:	Date Code Oct 2022
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Reliability Data Summary:

QV DEVICE NAME: ASX340AT

PACKAGE: iBGA

Test	Specification	Condition	Result
HTOL	JESD22-A108	Ta = <u>105</u> °C, 100 % max rated Vcc, 1008hrs	0/231
ELFR	AEC Q100-008	Ta= <u>125</u> °C, 24hrs	0/2400
PC	J-STD-020 JESD-A113	MSL 3 @ 260 °C	0/231
HTSL	JESD22-A103	Ta= <u>150</u> °C, 504hr	0/80
TC	JESD22-A104	Ta= <u>-55</u> °C to <u>+125</u> °C, 1000cyc	0/231
HAST	JESD22-A110	130°C, 85% RH, with bias, 96hrs	0/231
uHAST	JESD22-A118	130°C, 85% RH, unbiased, 96hrs	0/231
WBS	AEC Q100-001 AEC Q003	CPK >1.67	PASS

WBP	MIL-STD883 Method 2011 AEC Q003	CPK >1.67 or 0 Fails after TC (test #A4)	PASS
HBM	AEC Q100-002	0 Fails; 2KV HBM	PASS
CDM	AEC Q100-011	0 Fails: 750V for corner pins, 500V all other pins	PASS
LU	AEC Q100-004	0 Fails	PASS
SD	JSTD002	Ta= 245°C, 10 sec	PASS
SBS	AEC Q100-010	2X IR 245°C	PASS
ED	AEC Q100-009 AEC Q003	Elect. Distribution: (Test @ C/ R/ H)	PASS

Electrical Characteristics Summary:

Electrical characteristics are not impacted and are comparable to current assembly and final test flow. See comparison below. As mentioned earlier, there is no change in final test site or final test program.

Temp	Voltage	Mode	Kingpak			Seremban			Spec Limit (at 25°C)	Units
			Mean	Sig	Cpk	Mean	Sig	Cpk		
25°C	VAA	Analog output is disabled; parallel output is enabled, EXTCLK = 27 MHz	96.32	1.88	7.76	95.95	5.31	25.05	140	mW
	VAA_PIX		2.19	0.06	15.41	2.18	0.22	38.65	5	mW
	VDD		41.88	0.47	21.3	41.86	1.76	51.26	72	mW
	VDD_DAC		2.36	0.26	3.34	2.3	0.93	8.74	5	mW
	VDD_IO		27.01	1.17	6.56	28.66	3.5	18.51	50	mW
	VDD_PLL		19.35	0.16	11.52	19.05	0.64	28.19	25	mW

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](#).

Current Part Number	New Part Number	Qualification Vehicle
ASX340AT2C00XPED0-DPBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-DPBR1	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-DPBR2	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-DRBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-DRBR1	NA	ASX340AT2C00XPED0-DPBR
ASX344ATSC00XUEA0-TRBR	NA	ASX340AT2C00XPED0-DPBR
ASX344ATSC00XUEA0-TPBR	NA	ASX340AT2C00XPED0-DPBR
ASX344ATSC00XUEA0-TB-DPBR	NA	ASX340AT2C00XPED0-DPBR
ASX344ATSC00XUEA0-DRBR1	NA	ASX340AT2C00XPED0-DPBR
ASX344ATSC00XUEA0-DRBR	NA	ASX340AT2C00XPED0-DPBR
ASX344ATSC00XUEA0-DPBR	NA	ASX340AT2C00XPED0-DPBR
ASX342ATSC00XPED0-TR	NA	ASX340AT2C00XPED0-DPBR
ASX342ATSC00XPED0-TP	NA	ASX340AT2C00XPED0-DPBR



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ASX342ATSC00XPED0-DR	NA	ASX340AT2C00XPED0-DPBR
ASX342ATSC00XPED0-DP	NA	ASX340AT2C00XPED0-DPBR
ASX340AT3C00XPED0-TPBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT3C00XPED0-KP-DPBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT3C00XPED0-DRBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT3C00XPED0-DPBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-TRBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-TPBR	NA	ASX340AT2C00XPED0-DPBR
ASX340AT2C00XPED0-KY-DRBR	NA	ASX340AT2C00XPED0-DPBR

Appendix A: Changed Products

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
ASX340AT2C00XPED0-DPBR1		ASX340AT2C00XPED0-DPBR	NA	
ASX340AT2C00XPED0-DPBR2		ASX340AT2C00XPED0-DPBR	NA	
ASX340AT2C00XPED0-DRBR		ASX340AT2C00XPED0-DPBR	NA	