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**INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION # 20601**

Generic Copy

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**Issue Date:** 21-Aug-2014

**TITLE:** Manufacturing of Large body Clip QFN products at Amkor Technology Philippines

**PROPOSED FIRST SHIP DATE:** 21-Dec-2014

**AFFECTED CHANGE CATEGORY(S):** ON Semiconductor Manufacturing Assembly and Test

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local ON Semiconductor Sales Office or Rob Prestoza <[rob.prestoza@onsemi.com](mailto:rob.prestoza@onsemi.com)>

**NOTIFICATION TYPE:**

Initial Product/Process Change Notification (IPCN)

First change notification sent to customers. IPCNs are issued at least 120 days prior to implementation of the change. An IPCN is 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 90 days prior to implementation of the change.

**DESCRIPTION AND PURPOSE:**

This is an Initial Product/Process Change Notification to alert customers of the qualification of Amkor Technology Philippines to assemble and test products in Large body Clip QFN package listed in this notification. Amkor Technology Philippines will provide additional capacity to supplement ON Semiconductor's current Assembly and Test in Seremban, Malaysia and Carmona, Philippines, respectively.

A full Reliability Qualification and Electrical Characterization will be performed to ensure device functionality and meet electrical specifications per Datasheet requirement.



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**QUALIFICATION PLAN:**

Estimated Date for Qualification Completion: 09/30/2014  
 Samples should be available after completion of Qualification.

**NCP5369MNR2G – CLIP QFN-40 6x6**

Test #	Test	Ref	Test Conditions	End Point Requirements	Sample Size	# of Lots	Total Units	Comments	Qual Site
<i>Package Qual</i>									
1	Electrical Test	ON Data Sheet	ON Product Specification	See Below	All Devices	N/A	N/A	BOAC device – Wire bond process characterization is required before qual lot build. 3 Qual + 1 Control Lot	OSPI
2	HTOL	JA108	Ta = 125°C for 504hrs	Test @ Room	80	1	80	Info readpoint - 1008hrs	OSPI
3	HTSL	JA103	150°C for 1008hrs	Test @ Room	90	3+1	400	CDPA - Post HTSL 1008hrs – AEC Q101 and IMC check - 2 units/lot. Extended readpoint – 2016hrs	OSPI
4	SAT	12MSB17722C	MSL 3 @260°C	Per 12MSB17722C	10	3+1	40	MSL 3 @260°C	OSPI
5	PC	J-Std-020 JA113	Moisture Pre-conditioning for TC, HAST & UHAST	SMD Only, Test @ Room	All prior to TC, HAST & UHAST	All	All	MSL 3 @260°C	OSPI
6	PC-TC	JA104	-55°C to +150°C for 500 cycles	Test @ Room	90	3+1	360	CDPA - Post TC500cycles – AEC Q101 - 2 units/lot. WPS – 5units/lot. Info readpoint – 1000cycles	OSPI
7	PC-UHAST	JA118	131°C/85%RH/ 18.8 psig. No bias for 96 hrs	Test @ Room	80	3+1	320	Info readpoint – 192hrs	OSPI
8	PC-HAST	JA110	131°C/85%RH/ 18.8 psig. bias for 96 hrs	Test @ Room	90	3+1	360	CDPA - Post HAST96hrs – AEC Q101 - 2 units/lot. WPS – 5units/lot. Info readpoint – 192hrs	OSPI
9	RSH	JESD22 B106	Resistance to Solder Heat	Test @ Room Unless temp meas. required.	30	3+1	120		OSPI



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10	SD	JB102	Steam Aging + Dip& look	>95% solder coverage	15	3+1	60		OSPI
<b>HS FET Qual – Z03F</b>									
1	Electrical Test	ON Data Sheet	ON Product Specification	See Below	All Devices	N/A	N/A	Special wirebond for HS FET. 3 Qual + 1 Control Lot	SBN
2	HTGB	JA108	TA = 150°C, V=100% rated, for 504hrs	Test @ Room	80	3+1	320	Info readpoint - 1008hrs	SBN
3	HTRB	JA108	TA = 150°C, V=80% rated, for 504hrs	Test @ Room	80	3+1	320	Info readpoint - 1008hrs	SBN
4	PC	J-Std-020 JA113	Moisture Pre-conditioning for TC, HAST & UHAST	SMD Only, Test @ Room	All prior to TC, HAST & UHAST	All	All	MSL 3 @260°C	SBN
5	PC-IOL	MIL STD750, M1037	Ta=+25°C, delta Tj=100°C 2mins On/off for 7500 cycs	Test @ Room	80	3+1	320	Info readpoint – 15000cycs	SBN
6	PC-TC	JA104	-55°C to +150°C for 500 cycles	Test @ Room	90	3+1	360	Info readpoint – 1000cycs	SBN
7	PC-UHAST	JA118	131°C/85%RH/ 18.8 psig, No bias for 96 hrs	Test @ Room	80	3+1	320	Info readpoint – 192hrs	SBN
8	PC-HAST	JA110	131°C/85%RH/ 18.8 psig, V=80% rated for 96 hrs	Test @ Room	80	3+1	320	Info readpoint – 192hrs	SBN
<b>LS FET Qual – Z04G</b>									
1	Electrical Test	ON Data Sheet	ON Product Specification	See Below	All Devices	N/A	N/A	Special wirebond for LS FET. 3 Qual + 1 Control Lot	SBN
2	HTGB	JA108	TA = 150°C, V=100% rated, for 504hrs	Test @ Room	80	3+1	320	Info readpoint - 1008hrs	SBN
3	HTRB	JA108	TA = 90°C, V=80% rated, for 504hrs	Test @ Room	80	3+1	320	TA = 90°C Info readpoint - 1008hrs	SBN
4	PC	J-Std-020 JA113	Moisture Pre-conditioning for TC, HAST & UHAST	SMD Only, Test @ Room	All prior to TC, HAST & UHAST	All	All	MSL 3 @260°C	SBN
5	PC-IOL	MIL STD750, M1037	Ta=+25°C, delta Tj=100°C 2mins On/off for 7500 cycs	Test @ Room	80	3+1	320	Info readpoint – 15000cycs	SBN
6	PC-TC	JA104	-55°C to +150°C for 500 cycles	Test @ Room	90	3+1	360	Info readpoint – 1000cycs	SBN
7	PC-UHAST	JA118	131°C/85%RH/ 18.8 psig, No bias for 96 hrs	Test @ Room	80	3+1	320	Info readpoint – 192hrs	SBN
8	PC-H3TRB	JA101	85°C/85%RH, V=80% rated for 504 hrs	Test @ Room	80	3+1	320	Info readpoint – 1008hrs	SBN
1	BPS	M883 Method 2011	Wire Bond Pull Strength, Condition C or D	3gm Pull Force Min Cpk ≥ 1.67	30 bonds from 5 units	3	15		ATP3
2	BS	AEC-Q100-001	Bond Shear Test	Cpk ≥ 1.67	30 bonds from 5 units	3	15		ATP3
3	PD	JB100	Per case outline	Ppk>=1.66 Cpk>1.33	30	3	90		ATP3
4	ED	ON Data Sheet	Electrical Distributions	Room, Hot and Cold Cpk ≥ 1.67	30	1+1	60		OSPI



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**List of affected General Parts:**

NCP5369MNR2G  
NCP5369MNTWG  
NCP5369NMNTXG  
NCP81081MNR2G  
NCP81081MNTWG  
NCP5338MNR2G