



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #20286

Generic Copy

Issue Date: 30-Oct-2013

TITLE: NCP347, NCP348 & Other DFN/ QFN Devices (Gold Wire) Qualification at ASE-SH and AMKOR-Philippines Assembly Facilities.

PROPOSED FIRST SHIP DATE: 30-Jan-2014

AFFECTED CHANGE CATEGORY(S): Assembly Site

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact your local ON Semiconductor Sales Office or Todd Manes <shilpa.rao@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Office or Ken Fergus <ken.fergus@onsemi.com>

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

This is to notify customers ON Semiconductor's that NCP347x, NCP348x and other devices built in DFN packages (largest size is WDFN 2 x 2.5 x 0.8mm) with Gold Wire are now qualified at ASE (Shanghai, China) and Amkor, Philippines.

The affected devices listed on this PCN are currently assembled at the ON Semiconductor Seremban, Malaysia facility and/ or UTAC Thailand Assembly facilities. At the expiration of this PCN, these devices may be processed at these locations or the newly qualified ASES and Amkor facilities.

The package outline and electrical performance of the part from the two new assembly sites fully meet datasheet specifications.



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RELIABILITY DATA SUMMARY:

Reliability Test Results:

All qualification requirements were successfully met.

Qual Vehicles

- NCP347MTAHTBG – WDFN 2x2.5x.8mm

Amkor Philippines

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A	Lot B	Lot C	Control
						(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)
1	Prep	Sample preparation and initial part testing	various	---	Initial Electrical	Done	Done	Done	Done
2	HTOL	High Temp Op Life	TA = 125°C Tj=150°C	c = 0, Room	504 hrs	0/80			0/80
					1008 hrs	0/80			0/80
3	HTSL	High Temperature Storage Life	TA = 150°C	c = 0, Room	504 hrs 1008 hrs	0/80 0/80	0/80 0/80	0/80 0/80	0/80 0/80
4	RSH	Resistance to solder Heat	260C	c = 0, Room		0/30	0/30	0/30	0/30
5	PC	Moisture Preconditioning	MSL 1 @ 260°C	c = 0, Room	After PC	0/240	0/240	0/240	0/240
6	UHAST-PC	Precond. Autoclave	TA= +130°C, RH = 85%, PSIG= 18.8, No bias	c = 0, Room	96 hrs	0/80	0/80	0/80	0/80
7	TC-PC	Precond. Temp Cycle	-65/+150°C air to air	c = 0, Room	500 cy	0/80	0/80	0/80	0/80
8	HAST-PC	Precond. HAST	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room	96 hrs	0/80	0/80	0/80	0/80



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Amkor Philippines (contd)

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A	Lot B	Lot C	Control
						(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)
1	Prep	Sample preparation and initial part testing	various	---	Initial Electrical	Done	Done	Done	Done
9	BS	Bond Shear test	Cpk 1.33	30 bonds from 5 units	Results	Pass	Pass	Pass	
10	WBPS	Wire Bond Pull Strength	3 gm Pull Force min Cpk>1.67	30 bonds from 5 units	Results	Pass	Pass	Pass	
11	ED	Electrical Distribution	3T° -40/Room/85°C	Cpk >1.67 Critical parameters	Results	Pass			Pass

ASESH

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A	Lot B	Lot C	Control
						(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)
1	Prep	Sample preparation and initial part testing	various	---	Initial Electrical	Done	Done	Done	Done
2	HTOL	High Temp Op Life	TA = 125°C Tj=125°C	c = 0, Room	504 hrs	0/80			0/80
					1008 hrs	0/80			0/80
3	HTSL	High Temperature Storage Life	TA = 150°C	c = 0, Room	504 hrs	0/80	0/80	0/80	0/80
					1008 hrs	0/80	0/80	0/80	0/80
4	RSH	Resistance to Solder Heat	260°C	C=0		0/30	0/30	0/30	0/30
5	PC	Moisture Preconditioning	MSL 1 @ 260°C	c = 0, Room	After PC	0/240	0/240	0/240	0/240



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ASESH (contd)

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A	Lot B	Lot C	Control
						(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)
1	Prep	Sample preparation and initial part testing	various	---	Initial Electrical	Done	Done	Done	Done
6	UHAST-PC	Precond. Autoclave	TA= +130°C, RH = 85%, PSIG= 18.8, No bias	c = 0, Room	96 hrs	0/80	0/80	0/80	0/80
7	TC-PC	Precond. Temp Cycle	-65/+150°C air to air	c = 0, Room	500 cy	0/80	0/80	0/80	0/80
8	HAST-PC	Precond. HAST	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room	96 hrs	0/80	0/80	0/80	0/80
9	BS	Bond Shear test	Cpk 1.33	30 bonds from 5 units	Results	Pass	Pass	Pass	
10	BPS	Wire Bond Pull Strength	3 gm Pull Force min Cpk>1.67	30 bonds from 5 units	Results	Pass	Pass	Pass	
11	ED	Electrical Distribution	3T° -40/Room/85°C	Cpk >1.67 Critical parameters	Results	Pass			

ELECTRICAL CHARACTERISTIC SUMMARY:

Electrical characteristic meet device specifications.

**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #20286****CHANGED PART IDENTIFICATION:**

At the expiration of this FPCN devices can be assembled in the existing facilities or ASE, Shanghai or Amkor, Philippines. Devices assembled in the new facilities will have date code of WW05 (January 28), 2014 or later.

AMKOR and ASE facilities will follow the ON Semiconductor standard marking for DFN / QFN packages. These devices have a one digit date code that can be a number or alphabet per ON Semiconductor's date-code scheme. Assembly location can be identified by the orientation of the date code seen on the top marking, as shown below. The one digit date code is represented as M below.

Seremban: **M**

UTL: **M**

ASE, Shanghai: **M**

Amkor, Philippines: **M**

List of affected General Parts:

NCP347MTAHTBG
NCP347MTAETBG
NCP347MTAFTBG
NCP348AEMTTBG
NCP348MTTBG
NLAS5223BMNR2G
NCN1154MUTAG
NCN1188MUTAG
NS5S1153MUTAG