ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 20456

Generic Copy

Issue Date: 29-Apr-2014

TITLE: Copper Wire for DFN/QFN packages for Power Solution products

PROPOSED FIRST SHIP DATE: 29-Jul-2014

AFFECTED CHANGE CATEGORY(S): ON Semiconductor Manufacturing Assembly

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or Rob Prestoza <rob.prestoza@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office or Nicky Siu <nicky.siu@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:

Referencing to the General Announcement # GA 16200: Conversion of Gold Wire to Copper Wire in ON Semiconductor's Assembly Facilities, this is a Final Process Change Notification notifying customers of ON Semiconductor that Power Solution products built in DFN/QFN packages are now qualified to use Copper Wire BOM at their Manufacturing Assembly facility.

The affected products are represented by this Process Change Notice. At the expiration of this PCN, ON Semiconductor will build the affected products using Copper Wire BOM.

Reliability Qualification and Full Electrical Characterization over temperatures have been performed.

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RELIABILITY DATA SUMMARY:

Reliability Test Results: NCP5901BMNTBG

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A (rej/ ss)	Lot B (rej/ ss)	Lot C (rej/ ss)	Control (rej/ ss)
1	Prep	Sample preparation and initial part testing	various	---	Initial Electrical	Done	Done	Done	Done
2	HTSL	High Temp Storage Life	TA = 150°C for 1008hrs	c = 0, Room	504 hrs	0/80	0/80	0/80	0/80
					1008hrs	0/80	0/80	0/80	0/80
3	PC	Moisture Preconditioning	MSL 1 @ 260°C	c = 0, Room	Post PC	-	-	-	-
4	TC-PC	Precond. Temp Cycle	-65/+150°C air to air	c = 0, Room	Post PC	0/80	0/80	0/80	0/80
					250 cycs	0/80	0/80	0/80	0/80
					500 cycs	0/80	0/80	0/80	0/80
5	RSH	Resistance to Solder Heat	JESD22 – B106 260°C Immersion	c = 0, Room	Results	0/30	0/30	0/30	0/30
9	BPS	Bond Pull Strength	Cond C	30 bonds from 5 units **Cpk ≥ 1.67**	Results	0/30	0/30	0/30	
10	BS	Bond Shear Test	AEC-Q100-001	30 bonds from 5 units **Cpk ≥ 1.67**	Results	0/30	0/30	0/30	
11	ED	Electrical Distribution	Per ON Datasheet Critical Parameter	Room, Hot, Cold **Cpk ≥ 1.67**	Results	Pass			Pass

Reliability Test Results: NCP5269MNTWG

#	Test	Name	Test Conditions	End Point Req's	Test Results	Lot A (rej/ ss)	Lot B (rej/ ss)	Lot C (rej/ ss)	Control (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 for 1008hrs	c = 0, Room	504 hrs	0/80	0/80	0/78	
					1008 hrs	0/80	0/80	0/78	
3	HTSL	High Temp Storage Life	TA = 150°C for 1008hrs	c = 0, Room	504 hrs	0/80	0/80	0/80	0/80
					1008hrs	0/80	0/80	0/80	0/80
4	PC	Moisture Preconditioning	MSL 1 @ 260°C	c = 0, Room	Post PC	-	-	-	-
5	UHAST-PC	Precond. Autoclave	TA= +130°C, RH = 85%, PSIG= 18.8, No bias	c = 0, Room	Post PC	0/80	0/80	0/80	0/80
					96 hrs	0/80	0/80	0/80	0/80
6	TC-PC	Precond. Temp Cycle	-65/+150°C air to air	c = 0, Room	Post PC	0/80	0/80	0/80	0/80
					250 cycs	0/80	0/80	0/80	0/80
					500 cycs	0/80	0/80	0/80	0/80
7	HAST-PC	Precond. HAST	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room	Post PC	0/79	0/80	0/79	0/78
					96 hrs	0/79	0/80	0/79	0/78
8	RSH	Resistance to Solder Heat	JESD22 – B106 260°C Immersion	c = 0, Room	Results	0/30	0/30	0/30	0/30

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ELECTRICAL CHARACTERISTIC SUMMARY:

The Electrical Characteristics met or exceeded the device specification.

CHANGED PART IDENTIFICATION:

There is no physical change in the top marking with the products assembled with Copper Wire as compared to Gold Wire. It will follow the same top marking specifications.

List of affected General Parts:

NCP1595MNR2G
NCP1595AMNR2G
NCP1595AMNTWG
NCP1595CMNTWG
NCP1597AMNTWG
NCP1597BMNTWG
NCP1599MNTWG
NCP1589DMNTWG
NCP1589LMNTWG
NCL30161MNTXG