ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16200

Generic Copy

Issue Date: 13-Jan-2015

TITLE: Phase 2 Copper Wire for VHVIC Products in SOIC and TSSOP packages in Carmona, Philippines

PROPOSED FIRST SHIP DATE: 20-Apr-2015

AFFECTED CHANGE CATEGORY(S): Assembly Process

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or <Scott.Brow@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office or <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:

A General Announcement (GA#16200) was published on 1-29-09 regarding the ongoing Copper Wirebond conversion program at ON Semiconductor. This is a FPCN to notify customers of its plan to qualify Copper Wire (in place of Gold Wire) on SOIC and TSSOP packages assembled at the Carmona, Philippine assembly location for the VHVIC products listed in this announcement.

Reliability Qualification and full electrical characterization over temperature has now been completed on the designated package qualification vehicles.

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RELIABILITY DATA SUMMARY:

Reliability Test Results:

Device NCP1236AD65R2G:

#	Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ss)
					Read Point	Lot A	Lot B	Lot C	Lot 2 AU control lot
1	Prep	Sample preparation and initial part testing	Various	---	Initial Electrical	Done	Done	Done	Done
2	HTOL	High Temp Op Life	TA = 125°C biased	c = 0, Room, Hot	**504 hours**	0/77	0/77	0/77	0/77
					1008 hours	0/77	0/77	0/77	0/77
3	PC	Preconditioning Test (Test@Rm) SMD only; Mositure preconditioning for HAST, UHAST, TC; Peak reflow Temp = 260C	MSL 1 260	Test at R		Done	Done	Done	Done
4	PC -HAST	Preconditioned Highly accelerated stress test	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room, Hot	**96 hours**	0/77	0/77	0/77	0/77
					192 hours	0/77	0/77	0/77	0/77
5	PC -UHAST	Preconditioned Highly accelerated stress test	TA= +130°C, RH = 85%, PSIG= 18.8	c = 0, Room, Hot	**96 hours**	0/77	0/77	0/77	0/77
					192 hours	0/77	0/77	0/77	0/77
6	PC-TC	Preconditioned Temperature Cycle	-65/+150 C	c = 0, Room, Hot	**500 cyc**	0/77	0/77	0/77	0/77
					1000cyc	0/77	0/77	0/77	0/77
6a	PC-TC DPA	Precond TC DPA AEC decap visual	-65/+150 C	C = 0	**500 cyc**	0/5	0/5	0/5	0/5
6b	WBP	Wire bond pull test: (Ppk >1.67 and Cpk >1.33)	Condition C at post 500 cycles	30 bonds coming from 5 units Cpk > 1.33	Post 500cycles TC	0/30	0/30	0/30	0/30
7	HTSL	High Temperature Storage Life	150C at 1008hrs	c = 0, Room, Hot	504 hours	0/77	0/77	0/77	0/77
					1008 hours	0/77	0/77	0/77	0/77
8	RSH	Resistance to solder heat	JESD22 – B106 260°C Immersion	c = 0, Room, Hot	**Pass**	0/30	0/30	0/30	0/30

Device NCP1654BD65R2G:

#	Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ss)
					Read Point	Lot A	Lot B	Lot C	Lot 2 AU control lot
1	Prep	Sample preparation and initial part testing	Various	---	Initial Electrical	Done	Done	Done	Done
2	HTOL	High Temp Op Life	TA = 125°C biased	c = 0, Room, Hot	**504 hours**	0/77	0/77	0/77	0/77
					1008 hours	0/77	0/77	0/77	0/77
3	PC	Preconditioning Test (Test@Rm) SMD only; Mositure preconditioning for HAST, UHAST, TC; Peak reflow Temp = 260C	MSL 1 260	Test at R		Done	Done	Done	Done
4	PC -HAST	Preconditioned Highly accelerated stress test	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room, Hot	**96 hours**	0/77	0/77	0/77	0/77
					192 hours	0/77	0/77	0/77	0/77
5	PC -UHAST	Preconditioned Highly accelerated stress test	TA= +130°C, RH = 85%, PSIG= 18.8	c = 0, Room, Hot	**96 hours**	0/77	0/77	0/77	0/77
					192 hours	0/77	0/77	0/77	0/77
6	PC-TC	Preconditioned Temperature Cycle	-65/+150 C	c = 0, Room, Hot	**500 cyc**	0/77	0/77	0/77	0/77
					1000cyc	0/77	0/77	0/77	0/77
6a	PC-TC DPA	Precond TC DPA AEC decap visual	-65/+150 C	C = 0	**500 cyc**	0/5	0/5	0/5	0/5
6b	WBP	Wire bond pull test: (Ppk >1.67 and Cpk >1.33)	Condition C at post 500 cycles	30 bonds coming from 5 units Cpk > 1.33	**Post 500cycles TC**	0/30	0/30	0/30	0/30
7	HTSL	High Temperature Storage Life	150C at 1008hrs	c = 0, Room, Hot	504 hours	0/77	0/77	0/77	0/77
					1008 hours	0/77	0/77	0/77	0/77
8	RSH	Resistance to solder heat	JESD22 – B106 260°C Immersion	Test at R	**Pass**	0/30	0/30	0/30	0/30

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ELECTRICAL CHARACTERISTIC SUMMARY:

There is no electrical characterization difference in products assembled with copper wire. Electrical data is available upon request.

CHANGED PART IDENTIFICATION:

Products affected on this FPCN will have part number date codes greater than WW16 2015.

List of affected General Parts:

NCL30000DR2G	NCP1246BD065R2G	NCP1397BDR2G
NCL30001DR2G	NCP1246BD100R2G	NCP1398BDR2G
NCL30002DR2G	NCP1246BLD065R2G	NCP1398CDR2G
NCL30051DR2G	NCP1246BLD100R2G	NCP1562ADR2G
NCP1218AD65R2G	NCP1247AD065R2G	NCP1562BDR2G
NCP1219AD100R2G	NCP1247AD100R2G	NCP1607BDR2G
NCP1219AD65R2G	NCP1247BD065R2G	NCP1608BDR2G
NCP1219BD100R2G	NCP1247BD100R2G	NCP1631DR2G
NCP1219BD65R2G	NCP1247CD065R2G	NCP1652ADR2G
NCP1234AD100R2G	NCP1247CD100R2G	NCP1652DR2G
NCP1234AD65R2G	NCP1247DD065R2G	NCP1652DWR2G
NCP1234BD100R2G	NCP1247DD100R2G	NCP1654BD133R2G
NCP1234BD65R2G	NCP1252ADR2G	NCP1654BD200R2G
NCP1236AD100R2G	NCP1252BDR2G	NCP1654BD65R2G
NCP1236AD65R2G	NCP1252CDR2G	NCP1910A100DWR2G
NCP1236BD100R2G	NCP1271D100R2G	NCP1910A65DWR2G
NCP1236BD65R2G	NCP1271D65R2G	NCP1910B100DWR2G
NCP1236DD65R2G	NCP1288BD65R2G	NCP1910B65DWR2G
NCP1237AD65R2G	NCP1336ADR2G	NCP1927DR2G
NCP1237BD65R2G	NCP1336BDR2G	NCP4304ADR2G
NCP1238AD65R2G	NCP1379DR2G	NCP4304BDR2G
NCP1238BD65R2G	NCP1380ADR2G	NCP4810DR2G
NCP1240AD100R2G	NCP1380BDR2G	NCP5104DR2G
NCP1244AD065R2G	NCP1380CDR2G	NCP5106ADR2G
NCP1244AD100R2G	NCP1380DDR2G	NCP5106BDR2G
NCP1244BD065R2G	NCP1392BDR2G	NCP5109ADR2G
NCP1244BD100R2G	NCP1392DDR2G	NCP5109BDR2G
NCP1246AD065R2G	NCP1393BDR2G	NCP5111DR2G
NCP1246AD100R2G	NCP1396ADR2G	NCP5304DR2G
NCP1246ALD065R2G	NCP1396BDR2G	SCY99102BDR2G
NCP1246ALD100R2G	NCP1397ADR2G	SCY991608BDR2G