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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #20682**

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**Issue Date:** 14-Jan-2015

**TITLE:** G700LS Mold Compound Qualification for SOIC8\_14 products assembled with Cu Wire in OSPI

**PROPOSED FIRST SHIP DATE:** 21-Apr-2015

**AFFECTED CHANGE CATEGORY(S):**

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local ON Semiconductor Sales Office or <Shannon.Riggs@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:**

ON Semiconductor is notifying of the intent to change from Sumitomo Bakelite G600 to Sumitomo Bakelite G700LS mold compound. This change will affect products which are assembled with copper wire in SOIC 8 and 14 lead packages in the ON Semiconductor Philippines (OSPI) location.

There are no changes to product design, electrical specifications, or physical dimensions as a result of this notification. Full reliability information has been completed and all products will continue to meet or exceed ON Semiconductor reliability standards.



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**RELIABILITY DATA SUMMARY:**

NCV2901DR2G (SOIC 14)

Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ss)	(rej/ss)	(rej/ss)	(rej/ss)	(rej/ss)	(rej/ss)
				Read Point	Lot A	Lot B	Lot C	Lot D	Lot E	Lot 2
ELFR	Early Life Failure Rate	Temp = +150°C for 48 hours	c = 0, Room, Hot	48 Hrs	0/800	0/800	0/800	ongoing	ongoing	ongoing
HTOL	High Temp Op Life	Temp = +150°C for 1008 hours	c = 0, Room, Hot	504 Hrs	0/80	0/80	0/80	0/80	0/80	0/80
				1008 Hrs	0/80	0/80	0/80	0/80	0/80	0/80
HTSL	High Temp Storage Life	Temp = +150°C for 1008 hours	c = 0, Room, Hot	508 Hrs	0/80	0/80	0/80	0/80	0/80	0/80
				1008 Hrs	0/80	0/80	0/80	0/80	0/80	0/80
DPA	Destructive Physical Analysis	DPA following 1008hrs HTSL	AEC-Q101-004	2 units minimum	0/2	0/2	0/2	0/2	0/2	0/2
PC	MSL1 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/240	0/240	0/240	0/240	0/240	0/240
TC-PC	Temp Cycle + Preconditioning	Temp = -65°C to +150°C; for 500 cycles	c = 0, Room, Hot	Post PC Electrical	0/80	0/80	0/80	0/80	0/80	0/80
				500 cyc	0/80	0/80	0/80	0/80	0/80	0/80
				1000 cyc	0/80	0/80	0/80	0/80	0/80	0/80
DPA	Destructive Physical Analysis	DPA following 500 cyc TC + PC	AEC-Q101-004	2 units minimum	0/2	0/2	0/2	0/2	0/2	0/2
CDPA	Custom Destructive Physical Analysis	Wire Bond Pull Test following 500 cyc TC + PC	Minimum reading of 3 grams	5 units minimum	0/5	0/5	0/5	0/5	0/5	0/5
HAST-PC	Highly Accelerated Stress Test + Preconditioning	Temp = +130°C; RH = 85%, psig ~28 for 96hr	c = 0, Room, Hot	Post PC Electrical	0/80	0/80	0/80	0/80	0/80	0/80
				96 Hrs	0/80	0/80	0/80	n/a	n/a	n/a
DPA	Destructive Physical Analysis	DPA following 96 hrs HAST + PC	AEC-Q101-004	2 units minimum	0/2	0/2	0/2	n/a	n/a	n/a
AC-PC	Autoclave + Preconditioning	Temp = +121°C; RH = 100%, psig ~15 for 96hr	c = 0, Room	Post PC Electrical	0/80	0/80	0/80	0/80	0/80	0/80
				96 Hrs	0/80	0/80	0/80	0/80	0/80	0/80
RSH	Resistance to Solder Heat	260 C Immersion	c = 0, Room	Post PC Electrical	0/30	0/30	0/30	0/30	0/30	0/30
SD	Solderability	Solder Temp= 245°C	Visual Inspection	15 units minimum	0/15	0/15	0/15	0/15	0/15	0/15
PD	Physical Dimension Inspection	Cpk > 1.33	Inspection	10 units minimum	0/10	0/10	0/10	0/10	0/10	0/10
BPS	Bond Pull Strength	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30	0/30	0/30	0/30
BS	Bond Shear	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30	0/30	0/30	0/30

Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ss)	(rej/ss)	(rej/ss)	(rej/ss)
				Read Point	Lot F	Lot G	Lot H	Lot I
PC	MSL1 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/80	0/80	0/80	0/80
SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	Results	0/25	0/25	0/25	0/25



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MC14069DR2G (SOIC14)

Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)
				Read Point	Lot A	Lot B	Lot C	Lot D	Lot E
Prep	Sample preparation and initial part testing	various	---	Initial Electrical	done	done	done	done	Done
PC	MSL1 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/80	0/80	0/80	0/80	0/80
SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	Results	0/25	0/25	0/25	0/25	0/25

NCV2931DR2G (SOIC08)

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
Prep	Sample preparation and initial part testing	various	---	Initial Electrical	done	done	done	done
HTSL	High Temp Storage Life	Temp = +150°C for 1008 hours	c = 0, Room, Hot	508 Hrs	0/80	0/80	0/80	0/80
				1008 Hrs	0/80	0/80	0/80	0/80
PC	MSL1 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/160	0/160	0/160	0/160
TC-PC	Temp Cycle + Preconditioning	Temp = -65°C to +150°C; for 500 cycles	c = 0, Room, Hot	Post PC Electrical	0/80	0/80	0/80	0/80
				500 cyc	0/80	0/80	0/80	0/80
				1000 cyc	0/80	0/80	0/80	0/80
CDPA	Custom Destructive Physical Analysis	Wire Bond Pull Test following 500 cyc TC + PC	Minimum reading of 3 grams	5 units minimum	0/5	0/5	0/5	0/5
AC-PC	Autoclave + Preconditioning	Temp = +121°C; RH = 100%, psig ~15 for 96hr	c = 0, Room	Post PC Electrical	0/80	0/80	0/80	0/80
				96 hrs	0/80	0/80	0/80	0/80
RSH	Resistance to Solder Heat	260 C Immersion	c = 0, Room	Post PC Electrical	0/30	0/30	0/30	0/30
PD	Physical Dimension Inspection	Cpk > 1.33	Inspection	10 units minimum	0/10	0/10	0/10	0/10
SD	Solderability	Solder Temp= 245°C	Visual Inspection	15 units minimum	0/15	0/15	0/15	0/15
BPS	Bond Pull Strength	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30	0/30
BS	Bond Shear	Cpk >1.33	5 parts minimum	30 bonds minimum	0/30	0/30	0/30	0/30

Test	Name	Test Conditions	End Point Req's	Test Results	(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)	(rej/ ss)
				Read Point	Lot A	Lot B	Lot C	Lot D	Lot E
Prep	Sample preparation and initial part testing	various	---	Initial Electrical	done	done	done	done	done
PC	MSL1 Preconditioning	3x IR @ 260 deg C	c = 0, Room	Post Electrical	0/80	0/80	0/80	0/80	0/80
SAT	Scanning Acoustic Tomography	Compare for Delamination before and after PC	Compare to existing data	Results	0/25	0/25	0/25	0/25	0/25



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**ELECTRICAL CHARACTERISTIC SUMMARY:**

There are no changes in electrical performance. Datasheet specifications are not affected by this change.

**CHANGED PART IDENTIFICATION:**

There will be no change to part nomenclature or ordering code. Product implementation will be controlled by date code and material will not ship prior to the PCN effectivity date provided on page 1, unless early customer acceptance is provided.

**List of affected General Parts:**

<b>SOIC14</b>			
CD8447DR2G	NCV33079DR2G	NLV14069UBDG	SC2901DR2G
NCV2901DR2G	NCV33204DR2G	NLV14069UBDR2G	SC2901VDR2G
NCV2902DR2G	NCV33274ADG	SC224DR2G	SC2902DR2G
NCV33074ADR2G	NCV33274ADR2G	NCV34074VDR2G	SC339DR2G
NCV33074DR2G	TY30577DR2G		

<b>SOIC8</b>			
FMC33202DR2G	NCV2951CDR2G	NCV33172DR2G	NCV78L15ABDR2G
NCV1455BDR2G	NCV3063DR2G	NCV33201VDR2G	NCV833DR2G
NCV2903DR2G	NCV3064DR2G	NCV33202VDR2G	SC2903DR2G
NCV2904DR2G	NCV3066DR2G	NCV33272ADR2G	SC2903VDR2G
NCV2931ACDR2G	NCV317LBDG	NCV5230DR2G	SC2904DR2G
NCV2931AD-5.0R2G	NCV317LBDR2G	NCV78L05ABDG	SCV2903DR2G
NCV2931CDR2G	NCV33063AVDR2G	NCV78L05ABDR2G	SE5532AD8R2G
NCV2931D-5.0R2G	NCV33072ADR2G	NCV78L08ABDR2G	TY30533R2G
NCV2951ACD3.3R2G	NCV33072DR2G	NCV78L12ABDG	
NCV2951ACDR2G	NCV33078DR2G	NCV78L12ABDR2G	