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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16622**

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**Issue Date:** 11 Nov 2011

**TITLE:** Capacity expansion for SOIC14-16 Copper Wire Products into ASE Kunshan, China

**PROPOSED FIRST SHIP DATE:** 11 Feb 2012

**AFFECTED CHANGE CATEGORY(S):** Subcontractor Assembly Site, Subcontractor Test Site

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local ON Semiconductor Sales Office or Shannon Riggs<[shannon.riggs@onsemi.com](mailto:shannon.riggs@onsemi.com)>

**SAMPLES:** Contact your local ON Semiconductor Sales Office or Shannon Riggs  
<[shannon.riggs@onsemi.com](mailto:shannon.riggs@onsemi.com)>

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Office or Ken Fergus<[Ken.Fergus@onsemi.com](mailto: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](mailto:quality@onsemi.com)>.

**DESCRIPTION AND PURPOSE:**

As previously announced in initial PCN #16622, published April 7, 2011, ON Semiconductor is qualifying additional assembly and test manufacturing capacity for SOIC 14-16 products assembled with copper wire in ASE Kunshan, China (ASEKS). This is the final PCN providing the details pertinent to the change. This change represents capacity expansion, and upon expiration of the PCN product may be sourced from ASEKS, or any of the previously approved manufacturing locations.



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**RELIABILITY DATA SUMMARY:**

**Reliability Test Results:**

#	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
1	Prep	Sample preparation and initial part testing	Various	---	Initial Electrical	Done	Done	Done	Done
A1	PC	Preconditioning Test (Test@Rm) SMD only; Moisture preconditioning for THB/HAST, AC/UHAST, TC; Peak reflow Temp = 260C	MSL 1 260	Test at R	0/240	0/240	0/240	0/240	0/240
A2	PC -HAST	Preconditioned Highly accelerated stress test	TA= +130°C, RH = 85%, PSIG= 18.8, bias	c = 0, Room	<b>96 hours</b>	0/80**	0/80	0/80	0/80
					144 hours	0/77	0/77	0/77	0/77
					192 hours	0/77	0/77	0/77	0/77
A3	PC-TC	Preconditioned Temperature Cycle	-65/+150 C	c = 0, Room	500	0/90**	0/90	0/90	0/90
					<b>1000cyc</b>	0/77	0/77	0/77	0/77
					1500 cyc	0/77	0/77	0/77	0/77
					2000 cyc	0/77	0/77	0/77	0/77
					2500 cyc	0/77	0/77	0/77	0/77
					3000 cyc	0/77	0/77	0/77	0/77
					3500 cyc	0/77	0/77	0/77	0/77
A4	PC-AC	Preconditioned Autoclave/Unbiased HAST	121C/100%RH,15psig	c = 0, Room	<b>96 hours</b>	0/80**	0/80	0/80	0/80
					192 hours	0/77	0/77	0/77	0/77
					240 hours	0/77	0/77	0/77	0/77
A6	HTSL	High Temperature Storage Life	150C at 1008hrs	c = 0, Room	504 hours	0/77	0/77	0/77	0/77
					<b>1008 hours</b>	0/77	0/77	0/77	0/77
					1512 hours	0/77	0/77	0/77	0/77
					2016 hours	0/77	0/77	0/77	0/77
B1	HTOL	High Temp Op Life	TA = 150°C for 1008hrs	c = 0, Room	504 hours	0/80**	0/80	0/80	0/80
					<b>1008 hours</b>	0/80	0/80	0/80	0/80
					1512 hours	0/77	0/77	0/77	0/77
					2016 hours	0/77	0/77	0/77	0/77
C1	BS	Wire bond shear Test: (Ppk >1.67 and Cpk >1.33)	AEC-Q100-001	30 bonds coming from 5 units Cpk > 1.33	Post 500cycles TC – passed		30 bonds/ 5units	30 bonds/ 5units	
C2	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 - passed		30 bonds/ 5 units	30 bonds/ 5units	
C3	SD	Solderability (>95% coverage)		10 units per lot	<b>Pass</b>	0/15	0/15	0/15	0/15
	RSH	Resistance to solder heat	JESD22 – B106 260°C Immersion	Test at R	<b>Pass</b>	0/40	0/40	0/40	0/40

**Table 1:** MC1413DR2G reliability stresses and conditions

\*\*obtained samples for DPA

**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 16622****ELECTRICAL CHARACTERISTIC SUMMARY:**

Product performance continues to meet datasheet specifications.

**CHANGED PART IDENTIFICATION:**

Upon expiration of this notification devices may be shipped from any qualified manufacturing location. Manufacturing traceability will be maintained to allow identification of the assembly source.

**List of affected General Parts:**

LM224DG  
LM224DR2G  
LM2902DG  
LM2902DR2G  
LM2902VDG  
LM2902VDR2G  
LM324DG  
LM324DR2G  
LM239DG  
LM239DR2G  
LM2901DG  
LM2901DR2G  
LM2901VDG  
LM2901VDR2G  
LM339DG  
LM339DR2G  
MC3302DG  
MC3302DR2G  
MC1413BDG  
MC1413BDR2G  
MC1413DG  
MC1413DR2G  
ULN2003ADR2G