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**INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION**  
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**06-Dec-2006**

**SUBJECT: ON Semiconductor Initial Product/Process Change Notification #15676**

**TITLE: Initial PCN for Qualification of UQFN / UDFN / LLGA 0.5mm package thickness  
1x1mm to 3x3mm) at ON Seremban**

**PROPOSED FIRST SHIP DATE : 06-Apr-2007**

**AFFECTED CHANGE CATEGORY : ON Semiconductor Assembly Site**

**AFFECTED PRODUCT DIVISION : Digital Consumer Group (DCG)  
Computing Products Group (CPG)**

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local ON Semiconductor Sales Office or Todd Manes<[todd.manes@onsemi.com](mailto:todd.manes@onsemi.com)>

**NOTIFICATION TYPE:**

Initial Product/Process Change Notification (IPCEN)

First change notification sent to customers. IPCNs are issued at least 120 days prior to implementation of the change. An IPCN is advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan.

The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN).

This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 60 days prior to implementation of the change.

**DESCRIPTION AND PURPOSE:**

This is the initial PCN announcing qualification of the ON Semiconductor facility located in Seremban, Malaysia as an additional assembly location for the 0.5mm thickness UQFN / UDFN / LLGA packages.

Seremban is currently a qualified site for the assembly and test of 0.9mm thickness QFN / DFN packages. There will be no changes in device functionality, case outline, or footprint. Reliability will continue to meet or exceed ON Semiconductor's highest standards.

Final product change notifications will be released with the completion of reliability testing. Upon expiration of the Final PCN, 0.5mm UDFN / UQFN / LLGA devices will be sourced from both the Seremban facility and the existing facility (UTAC, located in Bangkok, Thailand). Any new devices released after publication of the FPCN for a specific package style/die size will be qualified for assembly in both locations.



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**QUALIFICATION PLAN:**

The 0.5mm QFN / DFN / LLGA packages will be qualified at Seremban using appropriate qualification vehicles as defined by the ON Semiconductor Reliability Engineering group. The qualification vehicles will be selected to ensure the largest die size for each package style/size is evaluated. Devices with smaller die sizes will be qualified by similarity to the qual vehicle for each package style. Electrical distribution/characterization evaluations for each device will be performed before that specific device is released to production at the new facility.

Qualification vehicles have been defined to include the following, with qualification tests as indicated for each:

<u>Package</u>	<u>Qual Vehicle</u>	<u>Testing</u>
0.5mm UQFN 3x3 and smaller	NCP1422	PC/TC/AC/HAST
0.5mm UQFN 5x6 and smaller	NCP5201	PC/TC/AC/UHAST/HTB
0.5mm LLGA 2x2 and smaller	NCP5612	PC/TC/HAST/HTB/ HTOL/UHAST
0.5mm Chip-on-Lead UQFN 1.8x2.6 and smaller	NLAS3799	PC/TC/AC/HTB/HAST HTOL
0.5mm UQFN 3.5x1.2 and smaller	NUF8001	PC/TC/AC/HAST
0.5mm UQFN 2x2 Dual Pad (TMOS)	NTLJD4116NT1G	PC/TC/AC/HAST/HTB

MSL1 Pre-Conditioning: IR at 260DegC prior to TC, HAST, AC

HAST: 131DegC/80%RH, 96Hrs, Cycled bias

AC: 121DegC/100%RH/15PSIG, 96hrs

TC: -65 to +150DegC, 500 cycles

HTB: 175DegC, 504hrs

UHAST: 130DegC/85% RH, 96hrs

HTOL: Tj=150DegC, 504hrs

SAT imaging will follow MSL PC and show no signs of delamination following pre-conditioning.

Electrical Distributions: Measured for each specific device type.



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**AFFECTED DEVICE LIST:**

**PART**

NLAS5123MUR2G  
NLVHC1G66MUR2G  
NCP1526MUTXG  
NCP2820MUTBG  
NCS2200AMUT1G  
NCS2220AMUT1G  
NLAS5223BMUR2G  
XC6001MUT2G  
NLAS3799BMUR2G  
NUF8001MUT2G  
NCP5602MUTBG  
NCP5612MUTBG  
NL7SZ19MUR2G