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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**

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**06-Apr-2007**

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #16007**

**TITLE: FPCN for Qualification of QFN/DFN (1.6x1.6MM to 8.0x8.0MM) on 0.90mm thickness and WDFN/WQFN 0.75mm Package Thickness (1.2x1.0MM to 8.0x8.0MM) at ON Seremban**

**PROPOSED FIRST SHIP DATE: 06 Jun 2007**

**AFFECTED CHANGE CATEGORY(S): ON Semiconductor Assembly & Test**

**AFFECTED PRODUCT DIVISION(S): Analog Products, Power Products, Discrete Products, Logic Products & ECL Products**

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local Sales Office at [www.onsemi.com](http://www.onsemi.com) or Don Warring <[don.warring@onsemi.com](mailto:don.warring@onsemi.com)>

**SAMPLES:** Contact your local ON Semiconductor Sales Office

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Office or Mark Wasilewski <[m.wasilewski@onsemi.com](mailto:m.wasilewski@onsemi.com)>

**NOTIFICATION TYPE:**

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 60 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 your local ON Semiconductor Sales Office.

**DESCRIPTION AND PURPOSE:**

This is a Final Product Change Notice (FPCN) notifying customers that the changes described in PCN 13296 and 15174 (which can be found at [www.onsemi.com](http://www.onsemi.com)), have been completed for the listed devices.

There will be no changes in device functionality, case outline, or footprint. Reliability will continue to meet or exceed ON Semiconductor's highest standards. Upon expiration of this FPCN, all QFN/DFN (1.6x1.6MM to 8.0x8.0MM) on 0.90mm thickness devices and all WDFN/WQFN 0.75MM Package Thickness (1.2x1.0MM to 8.0x8.0MM) devices will be sourced from both the Seremban facility and the existing facility (UTAC, located in Bangkok, Thailand). Any new devices/derivatives packaged on the same QFN/DFN/WQFN/WDFN platforms released after publication of this inclusive FPCN will be qualified for assembly in both locations.



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**QFN/DFN RELIABILITY DATA SUMMARY:**

**Reliability Test Results:**

Qual Vehicle: NCP1422MN (Largest die size in DFN10L 3.0x3.0MM)

Test	Conditions	Results
HTOL	TA=125°C, 504 hrs	0/231
HTB	TA=150°C, 1008 hrs	0/231
Preconditioning(PC)	MSL 1, 260° C	0/693
PC -Temp Cycle	-65/+150°C for 1000 cycles	0/231
PC -Autoclave	121°C/100%RH/15psig for 96hrs	0/231
PC -HAST	131°C/80%RH for 96 hrs	0/231
Solder Heat	260°C 10 seconds	0/90
Physical Dim.	Case Outline	0/30
Wire Pull	Per Factory	0/30, Cpk >1.33
Ball Shear	Per Factory	0/30, Cpk >1.33
Die Shear	Per Factory	0/30, Cpk >1.33
Solderability	Per Jedec	0/135

Qual Vehicle: NCP5201MNR2 (Largest die size in DFN18L 5.0x6.0MM)

Test	Conditions	Results
Preconditioning	MSL Level 1, 260C	0 rej/234 units
PC-Autoclave	(121C/100%RH/15PSIG) 96 hrs	0 rej/231 units
PC-Unbiased HAST	(130C/85%RH/18PSIG) 96 hrs	0 rej/231 units
PC-Temp Cycle	(-65C to +150C) 500 cycles	0 rej/231 units
High Temp Bake	(+175C) 504 hrs	0 rej/231 units

Qual Vehicle: SBSG113MN (Largest package QFN52L 8.0x8.0MM)

Test	Conditions	Results
Preconditioning	MSL Level 2, 260C	0 rej/231 units
PC-Temp Cycle	(-65/+150°C) 500 cycles	0 rej/231 units
PC-Unbiased HAST	(130°C/85%RH/18.8PSIG) 96 hrs	0 rej/231 units
PC-Autoclave	(121C/100%RH/15PSIG) 96 hrs	0 rej/231 units
High Temp Storage Life	(+150C) 500 hrs	0 rej/231 units

**WQFN/WDFN RELIABILITY DATA SUMMARY:**

Test	Conditions	Results (Rej / SS)
PC	24 hours bake@125C+ 168hr, 85C/85%RH+ 3X IR @ 260 °C +1flux immersion + alcohol + DI H2O rinse.	0/84, 0/84, 0/84
AC-PC	121°C/100% RH/15psig Post PC Electrical 96 Hrs	0/84, 0/84, 0/84 0/84, 0/84, 0/84
TC-PC	Ta=-65/+150deg.C, Air to air, Dwell = 10 min. Post PC Electrical 500 Cycles	0/84, 0/84, 0/84 0/84, 0/84, 0/84
HTSL	Ta=131deg.C 1008 Hrs	0/84, 0/84, 0/84
HAST	Ta=131deg.C, 85% RH/18.8psig 96 Hrs	0/84, 0/84, 0/84
RSH	Ta=260deg.C	0/35, 0/35, 0/35

**Final Product/Process Change Notification #16007****ELECTRICAL CHARACTERISTIC SUMMARY:**

All products performance meets current datasheet specifications.

**CHANGED PART IDENTIFICATION:**

Products manufactured after the FPCN expiration date can be manufactured at either ON Seremban or UTAC Thailand locations. Assembly location code will be maintained for traceability.

**AFFECTED DEVICE LIST**

74VCXH245MNR2  
74VCXH245MNR2G  
CS51411EMNR2G  
CS51411GMNR2G  
CS51412EMNR2G  
CS51412GMNR2G  
CS51413EMNR2G  
CS51413GMNR2G  
CS51414EMNR2G  
CS51414GMNR2G  
MC100EL51MNR4G  
MC100EP101MNG  
MC100EP101MNR4G  
MC100EP105MNG  
MC100EP105MNR4G  
MC100EP116MNG  
MC100EP116MNR4G  
MC100EP131MNG  
MC100EP131MNR4G  
MC100EP139MNG  
MC100EP139MNTXG  
MC100EP142MNG  
MC100EP142MNR4G  
MC100EP17MNG  
MC100EP17MNTXG  
MC100EP195BMNG  
MC100EP195BMNR4G  
MC100EP195MNG  
MC100EP195MNR4G  
MC100EP196BMNG  
MC100EP196BMNR4G  
MC100EP210SMNG  
MC100EP210SMNR4G  
MC100EP29MNG  
MC100EP29MNTXG  
MC100EP446MNG  
MC100EP446MNR4G  
MC100EP451MNG  
MC100EP451MNR4G  
MC100EP56MNG  
MC100EP56MNTXG  
MC100EP57MNG  
MC100EP57MNTXG  
MC100EP809MNG  
MC100EP809MNR4G  
MC100EP91MN



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MC100EP91MNG  
MC100EP91MNR2  
MC100EP91MNR2G  
MC100LVEP111MNG  
MC100LVEP111MNRG  
MC10EP101MNG  
MC10EP101MNR4G  
MC10EP105MNG  
MC10EP105MNR4G  
MC10EP131MNG  
MC10EP131MNR4G  
MC10EP142MNG  
MC10EP142MNR4G  
MC10EP17MNG  
MC10EP17MNTXG  
MC10EP195MNG  
MC10EP195MNR4G  
MC10EP29MNG  
MC10EP29MNTXG  
MC10EP446MNG  
MC10EP446MNR4G  
MC10EP451MNG  
MC10EP451MNR4G  
MC10EP56MNG  
MC10EP56MNTXG  
MC10EP57MNG  
MC10EP57MNTXG  
MC33275MN-2.5R2G  
MC33275MN-3.0R2G  
MC33275MN-3.3R2G  
MC33275MN-5.0R2  
MC33275MN-5.0R2G  
NB100LVEP17MN  
NB100LVEP17MNG  
NB100LVEP17MNR2  
NB100LVEP17MNR2G  
NB100LVEP56MN  
NB100LVEP56MNG  
NB100LVEP56MNR2  
NB100LVEP56MNR2G  
NB100LVEP91MN  
NB100LVEP91MNG  
NB100LVEP91MNR2  
NB100LVEP91MNR2G  
NB3N551MNR4G  
NB4L339MNG  
NB4L339MNR4G  
NB4N11SMNG  
NB4N11SMNR2G  
NB4N121KA0  
NB4N441MNG  
NB4N441MNR2G  
NB4N840MMN  
NB4N840MMNG  
NB4N840MMNR4  
NB4N840MMNR4G



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NB6L11MMNG  
NB6L11MMNR2G  
NB6L11SMNG  
NB6L11SMNR2G  
NB6L14MMNG  
NB6L14MMNR2G  
NB6L239MN  
NB6L239MNG  
NB6L239MNR2  
NB6L239MNR2G  
NB6L527SMNR2G  
NB6L611MNG  
NB6L611MNR2G  
NB6L72MMNG  
NB6L72MMNR2G  
NB6L72MNG  
NB6L72MNR2G  
NB6N11SMNG  
NB6N11SMNR2G  
NB6N14SMNG  
NB6N14SMNR2G  
NB7L111MMN  
NB7L111MMNG  
NB7L111MMNR2  
NB7L111MMNR2G  
NB7N017MMN  
NB7N017MMNG  
NB7N017MMNR2  
NB7N017MMNR2G  
NBC12429AMNG  
NBC12429AMNR4G  
NBC12430AMNG  
NBC12430AMNR4G  
NBC12439AMNG  
NBC12439AMNR4G  
NBSG86AMNG  
NBSG86AMNR2G  
NCN4555MN  
NCN4555MNG  
NCN4555MNR2  
NCN4555MNR2G  
NCN4557MTG  
NCN4557MTR2G  
NCN6804MNG  
NCN6804MNR4G  
NCP1508MNR2  
NCP1508MNR2G  
NCP1595AMNR2G  
NCP1595MNR2G  
NCP1595MNT2G  
NCP1835BMNR2  
NCP1835BMNR2G  
NCP1835MN20R2  
NCP1835MN20R2G  
NCP1835MN24R2  
NCP1835MN24R2G



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NCP1835MN24T2  
NCP1835MN24T2G  
NCP3163BMNR2G  
NCP3163MNR2G  
NCP3418BMNR2G  
NCP348MTTBG  
NCP348MTTBG  
NCP348MTTXG  
NCP348MTTXG  
NCP500SQL18T1  
NCP500SQL18T1G  
NCP500SQL25T1  
NCP500SQL25T1G  
NCP500SQL27T1  
NCP500SQL27T1G  
NCP500SQL28T1  
NCP500SQL28T1G  
NCP500SQL30T1  
NCP500SQL30T1G  
NCP500SQL33T1  
NCP500SQL33T1G  
NCP500SQL50T1  
NCP500SQL50T1G  
NCP5030MTTXG  
NCP5173MN  
NCP5173MNR2  
NCP5201MN  
NCP5201MNG  
NCP5201MNR2  
NCP5201MNR2G  
NCP5203MNR2  
NCP5203MNR2G  
NCP5210MNR2  
NCP5210MNR2G  
NCP5214AMNR2G  
NCP5214MNR2  
NCP5214MNR2G  
NCP5215MNR2G  
NCP5218MNR2G  
NCP5220AMNR2  
NCP5220AMNR2G  
NCP5220MNR2  
NCP5220MNR2G  
NCP5314MNR2  
NCP5316MNR2  
NCP5351MNR2  
NCP5351MNR2G  
NCP5371MNR2G  
NCP5381AMNR2G  
NCP5381MNR2G  
NCP5382MNR2G  
NCP5383MNR2G  
NCP5385MNR2G  
NCP5387MNR2G  
NCP5388A2  
NCP5388MNR2G



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NCP5389MNR2G  
NCP5391MNR2G  
NCP5604AMTR2G  
NCP5604BMTR2G  
NCP5608MTR2G  
NCP565MN12T2G  
NCP565MN33T2G  
NCP565MNADJT2G  
NCP5661MN12T2G  
NCP5661MN15T2G  
NCP5661MN18T2G  
NCP5661MN25T2G  
NCP5661MN28T2G  
NCP5661MN30T2G  
NCP5661MN33T2G  
NCP5661MNADJT2G  
NCP5662A2  
NCP5662MN15R2G  
NCP5662MN33R2G  
NCP5662MNADJR2G  
NCV51411MNR2G  
NCV8842A1  
NCV8842MNR2G  
NCV8843MNR2G  
NLAS3158MNR2G  
NLAS3158MNR2G  
NLAS3699BMN1R2G  
NLAS3699MN1R2G  
NLAS3799AMNR2G  
NLAS4717EPMTR2G  
NLAS4717EPMTR2G  
NLAS4783BMN1R2G  
NLAS4783MN1R2G  
NLAS5223AMNR2G  
NLAS5223AMNR2G  
NLAS7222AMTR2G  
NLAS9031MTR2G  
NLAS9051MNR2G  
NLAST9431MTR2G  
NSS12500UW3T2G  
NSS12501UW3T2G  
NSS20500UW3T2G  
NSS20501UW3T2G  
NSS40500UW3T2G  
NSS40501UW3T2G  
NTLJD2105LTBG  
NTLJD3119CTAG  
NTLJD3119CTBG  
NTLJD4150PTBG  
NTLJD4150PTBG  
NTLJF1103PA0  
NTLJF3117PTAG  
NTLJF3118NTAG  
NTLJF3118NTBG  
NTLJS4114NT1G  
NTLJS4149PTAG



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NTLJS4149PTBG  
NTLJS4159NT1G  
NUD4301MNT1G  
NUF2070MNT1G  
NUF2114MNT1G  
NUF2116MNT1G  
NUF2900MNT1G  
NUF4210MNT1G  
NUF4211MNT1G  
NUF4220MNT1G  
NUF4401MNT1G  
NUF4403MNT1G  
NUP8010MNT1G  
NUP8028MNT1G  
NUS1204MNT1G  
NUS5530MNR2G  
PB7L11MMNG  
PB7L11MMNG  
PB7L14MMNG  
PB7L86MMNG  
SB99026MN  
SB99026MNR2  
SBSG113MN  
SCN6020MTG  
SCN6020MTR2G  
SCP565MN330T2G  
SLAS3158MNR2G  
SLAS3158MNR2G  
SLAS4717EPMTR2G  
STLJD3115PT1G  
STLJD3115PT1G  
STLJD3115PTAG  
STLJD3115PTAG  
XC4N121KMNG