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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**  
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11-JAN-2002

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #12048**

**TITLE: Final Notification for Standard Logic SOIC and TSSOP Additional Wire Size Qualification**

**EFFECTIVE DATE: 22-Mar-2002**

**AFFECTED CHANGE CATEGORY: Assembly Process**

**AFFECTED PRODUCT DIVISION: Logic Products Div**

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Office or Ken Fergus <RRST50@onsemi.com>

**SAMPLES:** Contact your local ON Semiconductor Sales Office or John Miller <[s20812@onsemi.com](mailto:s20812@onsemi.com)>

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Office or John Miller <[s20812@onsemi.com](mailto:s20812@onsemi.com)>

**DISCLAIMER:**

Final Product/Process Change Notification (FPCN) -Final Notification completing the notification process. Distributed at least 60 days from the effective date 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 the Final Notification for Initial Notification #12048 that went out on 14-Nov-2001.

Au wire qualification at assembly to include reduced diameter 0.8 mil wire in addition to the standard 0.98 mil diameter wire for all SOIC and TSSOP Logic device types. This additional 0.8-mil in diameter will be done in anticipation of fine-pitch devices that will be entering production. All SOIC and TSSOP Logic device types, which are currently using the 0.98-mil Au wire, will be affected by this change which will be implemented in several phases.

Phase I - On Semiconductor Philippines(OSPI) will be the first factory to begin using .8 mil wire as their current equipment set is fully capable and has been characterized and qualified.

Phase II/III - The other Soic and Tssop factories will make the change as they acquire and qualify equipment with .8 mil capability. The timetable for these other phases will be determined as factories obtain full capability and complete all characterization and qualification. Additional FPCN's will be issued for these other phases when applicable.



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**RELIABILITY DATA SUMMARY:**

0.8 mil bonding wire

a) Temperature Cycle with preconditioning MSL 1 (10 cycles TC+24  
 hrs bake @125C + 168 hrs @ 85C/85% RH + 3X @ IR Reflow @ 220C)  
 SOIC MC74VHC00D 500 cycle 0/77  
 1000 cycle 0/77

b) Temperature Cycle with preconditioning MSL 1 (10 cycles TC+24  
 hrs bake @125C + 168 hrs @ 85C/85% RH + 3X @ IR Reflow @ 235C)  
 TSSOP LCX00DT 500 cycle 0/77  
 1000 cycle 0/77  
 LCX244DT 500 cycle 0/77  
 1000 cycle 0/77  
 ACT244DT 500 cycle 0/77  
 1000 cycle 0/77

c) High Temperature Operating Life @ 145 C  
 SOIC MC74VHC00D 168 hrs 0/77  
 504 hrs 0/77  
 TSSOP LCX00DT 168 hrs 0/77  
 504 hrs 0/77  
 LCX244DT 168 hrs 0/77  
 504 hrs 0/77

d) High Temperature Storage @ 175 C  
 SOIC MC74VHC00D 500 hrs 0/77  
 1000 hrs 0/77  
 TSSOP LCX00DT 500 hrs 0/77  
 1000 hrs 0/77  
 LCX244DT 500 hrs 0/77  
 1000 hrs 0/77  
 ACT244DT 500 hrs 0/77  
 1000 hrs 0/77

0.8 mil bonding wire

Wire Pull SOIC MC74VHC00D 0/10  
 TSSOP LCX00DT 0/10  
 LCX244DT 0/10  
 ACT244DT 0/10

Ball Shear SOIC MC74VHC00D 0/10  
 TSSOP LCX00DT 0/10  
 LCX244DT 0/10  
 ACT244DT 0/10

Internal Vis/Mech SOIC MC74VHC00D 0/45  
 TSSOP LCX00DT 0/45  
 LCX244DT 0/45  
 ACT244DT 0/45

X-ray Wire sweep SOIC MC74VHC00D 0/384  
 TSSOP LCX00DT 0/288  
 LCX244DT 0/240  
 ACT244DT 0/240

**Final Product/Process Change Notification #12048****ELECTRICAL CHARACTERISTIC SUMMARY:**

The study of changing the bonding wire from 0.98 mils to 0.8 mils showed no significant electrical characteristic change. The analysis included DC, AC, Tri-Temp, ESD, Latchup, and Groundbounce. Data book parameters will not change. Complete electrical characterization available upon request.

**CHANGED PART IDENTIFICATION:**

Parts with Date Codes of 0213 or later may have 0.8 mil bonding wire.

**AFFECTED DEVICE LIST (WITHOUT SPECIALS):****PART**

74ALVC16240DT, 74ALVC16240DTR, 74ALVC16244DT, 74ALVC16244DTR,  
74ALVC16245DT, 74ALVC16245DTR, 74ALVC16373DT, 74ALVC16373DTR,  
74ALVC16374DT, 74ALVC16374DTR, 74ALVCH16240DT, 74ALVCH16240DTR,  
74ALVCH16244DT, 74ALVCH16244DTR, 74ALVCH16245DT, 74ALVCH16245DTR,  
74ALVCH16373DT, 74ALVCH16373DTR, 74ALVCH16374DT, 74ALVCH16374DTR,  
74FST3125D, 74FST3125DR2, 74FST3125DT, 74FST3125DTR2,  
74FST3126D, 74FST3126DR2, 74FST3126DT, 74FST3126DTR2,  
74FST3244DT, 74FST3244DTR2, 74FST3245DT, 74FST3245DTR2,  
74FST3251D, 74FST3251DR2, 74FST3251DT, 74FST3251DTR2,  
74FST3253D, 74FST3253DR2, 74FST3253DT, 74FST3253DTR2,  
74FST3257D, 74FST3257DR2, 74FST3257DT, 74FST3257DTR2,  
74FST3345DT, 74FST3345DTR2, 74FST3383DT, 74FST3383DTR2,  
74FST3384DT, 74FST3384DTR2, 74FST3400DT, 74FST3400DTR2,  
74FST3861DT, 74FST3861DTR2, 74FST6800DT, 74FST6800DTR2,  
74VCX162240DT, 74VCX16240DT, 74VCX16240DTR, 74VCX16244DT,  
74VCX16244DTR, 74VCX16245DT, 74VCX16245DTR, 74VCX16373DT,  
74VCX16373DTR, 74VCX16374DT, 74VCX16374DTR, 74VCXH16240DT,  
74VCXH16240DTR, 74VCXH16244DT, 74VCXH16244DTR, 74VCXH16245DT,  
74VCXH16245DTR, 74VCXH16373DT, 74VCXH16373DTR, 74VCXH16374DT,  
74VCXH16374DTR, MC14001BD, MC14001BDR2, MC14001BDT,  
MC14001BDTR2, MC14001UBD, MC14001UBDR2, MC14007UBD,  
MC14007UBDR2, MC14007UBDT, MC14008BDR2, MC14011BD,  
MC14011BDR2, MC14011BDT, MC14011BDTR2, MC14011UBD,  
MC14011UBDR2, MC14012BD, MC14012BDR2, MC14013BD,  
MC14013BDR2, MC14013BDT, MC14013BDTR2, MC14014BD,  
MC14014BDR2, MC14015BD, MC14015BDR2, MC14015BDT,  
MC14016BD, MC14016BDR2, MC14017BD, MC14017BDR2,  
MC14018BD, MC14018BDR2, MC14020BD, MC14020BDR2,  
MC14020BDT, MC14021BD, MC14021BDR2, MC14022BD,  
MC14022BDR2, MC14023BD, MC14023BDR2, MC14024BD,  
MC14024BDR2, MC14025BD, MC14025BDR2, MC14027BD,  
MC14027BDR2, MC14028BD, MC14028BDR2, MC14029BD,  
MC14029BDR2, MC14040BD, MC14040BDR2, MC14040BDT,  
MC14040BDTR2, MC14042BD, MC14042BDR2, MC14043BD,  
MC14043BDR2, MC14044BD, MC14044BDR2, MC14049BD,  
MC14049BDR2, MC14049UBD, MC14049UBDR2, MC14049UBDT,  
MC14049UBDTEL, MC14049UBDTR2, MC14050BD, MC14050BDR2,  
MC14050BDT, MC14050BDTR2, MC14051BD, MC14051BDR2,  
MC14051BDT, MC14051BDTR2, MC14052BD, MC14052BDR2,  
MC14052BDT, MC14052BDTR2, MC14053BD, MC14053BDR2,  
MC14053BDT, MC14053BDTR2, MC14060BD, MC14060BDR2,  
MC14060BDT, MC14060BDTR2, MC14066BD, MC14066BDR2,  
MC14066BDT, MC14066BDTR2, MC14069UBD, MC14069UBDR2,

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MC14069UBDT, MC14069UBDTR2, MC14070BD, MC14070BDR2,  
MC14071BD, MC14071BDR2, MC14071BDT, MC14071BDTR2,  
MC14073BD, MC14073BDR2, MC14076BD, MC14076BDR2,  
MC14077BD, MC14077BDR2, MC14081BD, MC14081BDR2,  
MC14081BDT, MC14081BDTR2, MC14082BD, MC14082BDR2,  
MC14093BD, MC14093BDR2, MC14093BDT, MC14093BDTR2,  
MC14094BD, MC14094BDR2, MC14094BDT, MC14094BDTR2,  
MC14106BD, MC14106BDR2, MC14106BDT, MC14106BDTR2,  
MC14174BD, MC14174BDR2, MC14175BD, MC14175BDR2,  
MC14503BD, MC14503BDR2, MC14504BD, MC14504BDR2,  
MC14504BDT, MC14511BD, MC14512BD, MC14512BDR2,  
MC14516BD, MC14516BDR2, MC14521BD, MC14521BDR2,  
MC14528BD, MC14528BDR2, MC14532BD, MC14532BDR2,  
MC14538BD, MC14538BDR2, MC14538BDT, MC14538BDTR2,  
MC14541BD, MC14541BDR2, MC14541BDT, MC14541BDTR2,  
MC14543BD, MC14543BDR2, MC14551BD, MC14551BDR2,  
MC14555BD, MC14555BDR2, MC14556BD, MC14556BDR2,  
MC14569BDT, MC14572UBD, MC14572UBDR2, MC14584BD,  
MC14584BDR2, MC14584BDT, MC14584BDTR2, MC14585BD,  
MC14585BDR2, MC74AC00D, MC74AC00DR2, MC74AC00DT,  
MC74AC00DTR2, MC74AC02D, MC74AC02DR2, MC74AC02DT,  
MC74AC02DTR2, MC74AC04D, MC74AC04DR2, MC74AC04DT,  
MC74AC04DTR2, MC74AC05D, MC74AC05DR2, MC74AC08D,  
MC74AC08DR2, MC74AC08DT, MC74AC08DTR2, MC74AC109D,  
MC74AC109DR2, MC74AC10D, MC74AC10DR2, MC74AC11D,  
MC74AC11DR2, MC74AC125D, MC74AC125DR2, MC74AC125DT,  
MC74AC125DTR2, MC74AC132D, MC74AC132DR2, MC74AC138D,  
MC74AC138DR2, MC74AC138DT, MC74AC138DTR2, MC74AC139D,  
MC74AC139DR2, MC74AC139DT, MC74AC139DTR2, MC74AC14D,  
MC74AC14DR2, MC74AC14DT, MC74AC14DTR2, MC74AC151D,  
MC74AC151DR2, MC74AC153D, MC74AC153DR2, MC74AC157D,  
MC74AC157DR2, MC74AC157DT, MC74AC157DTR2, MC74AC161D,  
MC74AC161DR2, MC74AC163D, MC74AC163DR2, MC74AC174D,  
MC74AC174DR2, MC74AC174DT, MC74AC174DTR2, MC74AC175D,  
MC74AC175DR2, MC74AC20D, MC74AC20DR2, MC74AC240DT,  
MC74AC240DTR2, MC74AC244DT, MC74AC244DTR2, MC74AC245DT,  
MC74AC245DTR2, MC74AC253D, MC74AC253DR2, MC74AC257D,  
MC74AC257DR2, MC74AC259D, MC74AC259DR2, MC74AC273DT,  
MC74AC273DTR2, MC74AC32D, MC74AC32DR2, MC74AC32DT,  
MC74AC32DTR2, MC74AC373DT, MC74AC373DTR2, MC74AC374DT,  
MC74AC374DTR2, MC74AC377DT, MC74AC377DTR2, MC74AC4040D,  
MC74AC4040DR2, MC74AC541DT, MC74AC541DTR2, MC74AC573DT,  
MC74AC573DTR2, MC74AC574DT, MC74AC574DTR2, MC74AC74D,  
MC74AC74DR2, MC74AC74DT, MC74AC74DTR2, MC74AC86D,  
MC74AC86DR2, MC74AC86DT, MC74AC86DTR2, MC74ACT00D,  
MC74ACT00DR2, MC74ACT00DT, MC74ACT00DTR2, MC74ACT02D,  
MC74ACT02DR2, MC74ACT02DT, MC74ACT02DTR2, MC74ACT04D,  
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MC74ACT109DR2, MC74ACT10D, MC74ACT10DR2, MC74ACT10DT,  
MC74ACT10DTR2, MC74ACT11D, MC74ACT11DR2, MC74ACT125D,  
MC74ACT125DR2, MC74ACT125DT, MC74ACT125DTR2, MC74ACT132D,  
MC74ACT132DR2, MC74ACT138D, MC74ACT138DR2, MC74ACT138DT,  
MC74ACT138DTR2, MC74ACT139D, MC74ACT139DR2, MC74ACT14D,  
MC74ACT14DR2, MC74ACT14DT, MC74ACT14DTR2, MC74ACT151D,

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MC74ACT151DR2, MC74ACT153D, MC74ACT153DR2, MC74ACT153DT,  
MC74ACT153DTR2, MC74ACT157D, MC74ACT157DR2, MC74ACT157DT,  
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MC74HC390AD, MC74HC390ADR2, MC74HC390ADT, MC74HC390ADTR2,  
MC74HC390D, MC74HC390DR2, MC74HC393AD, MC74HC393ADR2,  
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MC74HC4066DR2, MC74HC4066DT, MC74HC4066DTR2, MC74HC4316AD,  
MC74HC4316ADR2, MC74HC4316ADT, MC74HC4316ADTR2, MC74HC4316D,  
MC74HC4316DR2, MC74HC4538AD, MC74HC4538ADR2, MC74HC4538ADT,  
MC74HC4538ADTR2, MC74HC4851AD, MC74HC4851ADR2, MC74HC4851ADT,  
MC74HC4851ADTR2, MC74HC4852AD, MC74HC4852ADR2, MC74HC4852ADT,

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MC74HC4852ADTR2, MC74HC540ADT, MC74HC540ADTR2, MC74HC541ADT,  
MC74HC541ADTR2, MC74HC573ADT, MC74HC573ADTR2, MC74HC574ADT,  
MC74HC574ADTR2, MC74HC589AD, MC74HC589ADR2, MC74HC589ADT,  
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MC74HC595ADTR2, MC74HC640ADTEL, MC74HC74AD, MC74HC74ADR2,  
MC74HC74ADT, MC74HC74ADTR2, MC74HC86AD, MC74HC86ADR2,  
MC74HC86ADT, MC74HC86ADTR2, MC74HCT04AD, MC74HCT04ADR2,  
MC74HCT04ADT, MC74HCT04ADTR2, MC74HCT138AD, MC74HCT138ADR2,  
MC74HCT138ADT, MC74HCT138ADTR2, MC74HCT14AD, MC74HCT14ADR2,  
MC74HCT14ADT, MC74HCT14ADTR2, MC74HCT244ADT, MC74HCT244ADTR2,  
MC74HCT245ADT, MC74HCT245ADTR2, MC74HCT273ADT, MC74HCT273ADTR2,  
MC74HCT373ADT, MC74HCT373ADTR2, MC74HCT374ADT, MC74HCT374ADTR2,  
MC74HCT541ADT, MC74HCT541ADTR2, MC74HCT573ADT, MC74HCT573ADTR2,  
MC74HCT574ADT, MC74HCT574ADTR2, MC74HCT74AD, MC74HCT74ADR2,  
MC74HCT74ADT, MC74HCU04AD, MC74HCU04ADR2, MC74HCU04ADT,  
MC74HCU04ADTR2, MC74LCX00D, MC74LCX00DR2, MC74LCX00DT,  
MC74LCX00DTR2, MC74LCX02D, MC74LCX02DR2, MC74LCX02DT,  
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MC74LCX541DTR2, MC74LCX573DT, MC74LCX573DTR2, MC74LCX574DT,  
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MC74LCXU04DTR2, MC74LVQ04DR2, MC74LVX00D, MC74LVX00DR2,  
MC74LVX00DT, MC74LVX00DTR2, MC74LVX02D, MC74LVX02DR2,  
MC74LVX02DT, MC74LVX02DTR2, MC74LVX04D, MC74LVX04DR2,  
MC74LVX04DT, MC74LVX04DTR2, MC74LVX08D, MC74LVX08DR2,  
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MC74LVX14DT, MC74LVX14DTR2, MC74LVX157D, MC74LVX157DR2,  
MC74LVX157DT, MC74LVX157DTR2, MC74LVX240DT, MC74LVX240DTR2,  
MC74LVX244DT, MC74LVX244DTR2, MC74LVX245DT, MC74LVX245DTR2,  
MC74LVX257D, MC74LVX257DR2, MC74LVX257DT, MC74LVX257DTR2,  
MC74LVX259D, MC74LVX259DR2, MC74LVX259DT, MC74LVX259DTR2,

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MC74LVX32D, MC74LVX32DR2, MC74LVX32DT, MC74LVX32DTR2,  
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