



Date Created: 10/8/2003
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PCN # 20033508-A

DESIGN/PROCESS CHANGE NOTIFICATION -- FINAL

Notification of this change was initially distributed via Forecast Change Notice #20033508, issued 9/10/2003. This PCN covers the 74LCX, 74VHC, MM74HC, and MM74HCT devices identified in 20033508. This PCN revision also includes reference to the original Phase ONE of the qualification. The PCN 20014807 was phase ONE and is now complete. Phase TWO only includes the 74LCX, 74VHC, MM74HC, and MM74HCT devices listed in Affected FSIDs.

This is to inform you that a design and/or process change will be made to the following product(s). This notification is for your information and concurrence.

If you require data or samples to qualify this change, please contact **Fairchild Semiconductor within 30 days of receipt of this notification.**

If you have any questions concerning this change, please contact:

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PCN Type: Alternate Fab Location

Effectivity

Expected 1st Device Shipment Date: 3/1/2004
Earliest Year/Work Week of Changed Product: 0412
(Note: Package marking may differ from this format)

Product ID (Description):

Select Fairchild Semiconductor 74LCX, 74VHC, MM74HC, and MM74HCT logic products currently being manufactured using Fairchild's CS080C process. Please refer to affected FSID listing.

Description of Change:

Fairchild Semiconductor is announcing an additional wafer fab location for the processing of existing versions of 74LCX, 74VHC, MM74HC, and MM74HCT devices currently manufactured using Fairchild's CS080C process. These devices are currently manufactured in Fairchild's 6-inch wafer fab located in South Portland, ME. The additional manufacturing facility will be ASMC (Advanced Semiconductor Manufacturing Corporation) 6-inch wafer fab located in Shanghai, China (PRC). This change is being implemented in order to improve product availability and manufacturing flexibility. Fairchild intends to supply these devices interchangeably from either wafer fab location. There are no design changes planned for the affected Fairchild products. Each product will meet Fairchild's published data book specifications. The result of this change will be increased availability of the affected products.

Effect of Change:

This change will not impact the parametric performance or electrical characteristics of any affected device. Products manufactured at the new wafer fab location will continue to be fully compliant to all published databook specifications and will be completely interchangeable with products manufactured at the existing wafer fab location. Quality and reliability will remain at the excellent levels already demonstrated with Fairchild's existing products.

Qualification:

Qualification of CS80C fab process and subsequent product at ASMC's 6 inch wafer fabrication facility has been addressed as a multipart qualification effort. The initial phase addressed the formal fabrication process qualification with notification via PCN 20014807. The final release of that PCN was issued in January 2001. The process qualification results are listed in PCN 20014807

This PCN addresses the second phase of this qualification effort. The focus of this qualification effort is the release of additional existing products on the approved ASMC CS80C fab process. The qualification includes the following tests.

Qual Plan: Q20020014

Device: 74LCX16500MEA

Stress High Low % Spl TPT

Test Temp	Temp	Hum	PSI	A	Dura
TMCL 150	-65			77	500
SOPL 150				77	168
					1000
TOTAL					154

Device: 74LCX16500MTD

Stress	High	Low	%		Spl	TPT
Test Temp	Temp	Hum	PSI	A	Dura	
TMCL 150	-65			77	500	
SOPL 150				77	168	
					1000	
TOTAL					154	

Device: 74LCX573MSA

Stress	High	Low	%		Spl	TPT
Test Temp	Temp	Hum	PSI	A	Dura	
TMCL 150	-65			77	500	
SOPL 150				77	168	
					1000	
TOTAL					154	

Device: 74LCX573MTC

Stress	High	Low	%		Spl	TPT
Test Temp	Temp	Hum	PSI	A	Dura	
TMCL 150	-65			77	500	
SOPL 150				77	168	
					1000	
TOTAL					154	

Device: 74LCX573WM

Stress	High	Low	%		Spl	Spl	TPT
Test Temp	Temp	Hum	PSI	A	B	Dura	
TMCL 150	-65			77	0	500	
SOPL 150				77	52	168	
						1000	
TOTAL					154	52	

Qual/REL Plan Numbers

Qual Results: FFM20030190

Environmental Test Results:

Test: Preconditioning:

Test Request	Device	Sbgrp	Sample Size	Rejects
RFM200200192	74LCX16500MEA	A	160	0
RFM200200193	74LCX16500MTD	A	160	0
RFM200200195	74LCX573MTC	A	160	0
RFM200200195	74LCX573MSA	A	232	0
RFM200200196	74LCX573WM	A	232	0

Test: Operating Life Test (Static) (SOPL)

Test Request	Device	Sbgrp	TP	Duration	Sample Size	Rejects
RFM200200192	74LCX16500MEA	A	1	168	80	0
RFM200200192	74LCX16500MEA	A	2	1000	80	0
RFM200200193	74LCX16500MTD	A	1	168	80	0
RFM200200193	74LCX16500MTD	A	2	1000	80	0
RFM200200195	74LCX573MTC	A	1	168	80	0
RFM200200195	74LCX573MTC	A	2	1000	80	0
RFM200300487	74LCX573MSA	A	1	168	116	0
RFM200300487	74LCX573MSA	A	2	1000	116	0
RFM200300488	74LCX573WM	A	1	168	116	0
RFM200300488	74LCX573WM	A	2	1000	116	0

Test: Temperature Cycle (TMCL)

Test Request	Device	Sbgrp	TP	Duration	Sample Size	Rejects
RFM200200192	74LCX16500MEA	A	1	500	80	0
RFM200200193	74LCX16500MTD	A	1	500	80	0
RFM200200195	74LCX573MTC	A	1	500	80	0
RFM200300487	74LCX573MSA	A	1	500	116	0
RFM200300488	74LCX573WM	A	1	500	116	0

Conclusion

All environmental stresses outlined in reliability Qualification plans Q20020014 and Q20030041 successfully meet the requirements for release, qualifying ASMC for production in the following packages: Penang assembled HPC TSSOP, SSOP and LPC SOIC, TSSOP and Amkor assembled LPC SSOP.

Affected FSIDs

74LCX00CW	74LCX00M	74LCX00MTC
74LCX00MTCX	74LCX00MX	74LCX00SJ
74LCX00SJX	74LCX08CW	74LCX08M
74LCX08MTC	74LCX08MTCX	74LCX08MX
74LCX08SJ	74LCX08SJX	74LCX16500CW
74LCX16500G	74LCX16500GX	74LCX16500MEA
74LCX16500MEAX	74LCX16500MTD	74LCX16500MTDX

X16501CW
74LCX16501MEAX
74LCX16543CW
74LCX16543MEAX
74LCX16646CW
74LCX16646MEAX
74LCX16652CW
74LCX16652MEAX
74LCX32CW
74LCX32MTCX
74LCX32SJX
74LCX573MSAX
74LCX573SJ
74LCX573WMX
74LCX574MSAX
74LCX574SJ
74LCX574WMX
74LCX86MTC
74LCX86SJ

74LCX16501GX
74LCX16501MTD
74LCX16543GX
74LCX16543MTD
74LCX16646GX
74LCX16646MTD
74LCX16652GX
74LCX16652MTD
74LCX32M
74LCX32MX
74LCX573CW
74LCX573MTC
74LCX573SJX
74LCX574CW
74LCX574MTC
74LCX574SJX
74LCX86CW
74LCX86MTCX
74LCX86SJX

74LCX16501MEA
74LCX16501MTDX
74LCX16543MEA
74LCX16543MTDX
74LCX16646MEA
74LCX16646MTDX
74LCX16652MEA
74LCX16652MTDX
74LCX32MTC
74LCX32SJ
74LCX573MSA
74LCX573MTCX
74LCX573WM
74LCX574MSA
74LCX574MTCX
74LCX574WM
74LCX86M
74LCX86MX