



## Process Change Notice #1205091

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PCN Date: 5/9/2012		Effective Date: 8/15/2012									
Title: C8051F92x/93x Revision F Transition											
Originator: Jesse Debruin	Phone: 512-532-5313	Dept: Product Marketing									
Customer Contact: Kathy Haggar	Phone: 512.532.5261	Dept: Sales									
<b>PCN Type:</b> <table><tr><td><input checked="" type="checkbox"/> Datasheet</td><td><input type="checkbox"/> Foundry</td><td><input type="checkbox"/> Packing</td></tr><tr><td><input checked="" type="checkbox"/> Product Revision</td><td><input type="checkbox"/> Assembly</td><td><input type="checkbox"/> Labeling</td></tr><tr><td><input type="checkbox"/> Discontinuance</td><td><input type="checkbox"/> Test</td><td><input type="checkbox"/> Other</td></tr></table> Last Order Date: N/A			<input checked="" type="checkbox"/> Datasheet	<input type="checkbox"/> Foundry	<input type="checkbox"/> Packing	<input checked="" type="checkbox"/> Product Revision	<input type="checkbox"/> Assembly	<input type="checkbox"/> Labeling	<input type="checkbox"/> Discontinuance	<input type="checkbox"/> Test	<input type="checkbox"/> Other
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<input type="checkbox"/> Discontinuance	<input type="checkbox"/> Test	<input type="checkbox"/> Other									
PCN Details											
<b>Description of Change:</b> Silicon Labs is pleased to announce revision F of the C8051F92x/F93x devices and version 1.3 of the corresponding datasheet for these products.											
<b>Reason for Change:</b> Revision F of the products allows customers to exceed the maximum VBAT ramp time, if desired, during external reset on the device.  The datasheet includes updates to Table 4.4 Reset Electrical Characteristics for additional clarification on VBAT ramp time under different operating modes along with other minor edits.											
<b>Impact on Form, Fit, Function, Quality, Reliability:</b> There is no impact to form, fit, quality or reliability. The functional change is optional as described.											

**Product Identification:**

The following ordering part numbers are affected:

C8051F920-F-GM  
C8051F920-F-GQ  
C8051F920-GM  
C8051F920-GQ  
C8051F921-F-GM  
C8051F921-GM  
C8051F928-GQ  
C8051F929-GQ  
C8051F930-F-GDI  
C8051F930-F-GM  
C8051F930-F-GQ  
C8051F930-GDI  
C8051F930-GM  
C8051F930-GQ  
C8051F930-GW  
C8051F930-W

C8051F931-F-GM  
C8051F931-GM  
C8051F938-GQ  
C8051F939-GQ

Note: Affected Part Numbers also include all customer parts made from the above listed base parts as well as tape and reel.



## Process Change Notice #1205091

Last Date of Unchanged Product: 8/15/2012

**Customer Early Acceptance Sign Off:**

Customers may approve early PCN acceptance by completing the information below:

Early Acceptance:    Date: \_\_\_\_\_

                                 Name: \_\_\_\_\_

                                 Company: \_\_\_\_\_

Email your early Acceptance approval to: [katherine.haggard@silabs.com](mailto:katherine.haggard@silabs.com)

**Qualification Data:**

Please see Appendix A.

## Appendix A C8051F92x/3x Qualification Report



**W7101F1 Product Qualification Plan and Report Rev. E**

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C8051F92x/3x Rev F, TSMC Fabrication, Unisem/SPIL Assembly except as noted							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group A - Accelerated Environment Stress Tests							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>25	Q25565	0/80	1	7 lots 0/560	Pass
			Q25562	0/80	1		
			Q25572	0/80	2		
			Q25669	0/80	2		
			Q25017	0/80	3		
			Q25183	0/80	3		
			Q25536	0/80	3		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q25560	0/80	1	7 lots 0/560	Pass
			Q25564	0/80	1		
			Q25574	0/80	2		
			Q25665	0/80	2		
			Q25000	0/80	3		
			Q25185	0/80	3		
			Q25534	0/80	3		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q25566	0/80	1	7 lots 0/560	Pass
			Q25563	0/80	1		
			Q25573	0/80	2		
			Q25663	0/80	2		
			Q24921	0/80	3		
			Q25137	0/80	3		
			Q25414	0/80	3		
Unbiased HAST	JA118 130°C, 85%RH, 96 hours	3 lots, N=>25	Q24461	0/80	1	7 lots 0/560	Pass
			Q25571	0/80	1		
			Q25567	0/80	2		
			Q25667	0/80	2		
			Q24999	0/80	3		
			Q24184	0/80	3		
			Q25535	0/80	3		

Approved by: Kathy Torres

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Prepared on: 14-May-12

## C8051F92x/3x Qualification Report



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Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group B - Accelerated Lifetime Simulation Tests - Unisem Assembly unless notes							
HTOL	JA108 125°C, Dynamic Vcc=1.4V for 1000 hours	3 lots, N=>77	Q25551 Q26146 Q26266	0/80 0/80 0/80	4	3 lots 0/240	Pass
LTOL	JA108 -10°C, Dynamic Vcc=3.6V, 1000 hours	1 lot, N=>32	Q25548	0/40	4	1 lots 0/40	Pass
ELFR	JA108 125°C, Dynamic Vcc=3.6V, 48 hours	3 lots, N=>500	Q25505 Q26046 Q26216 Q32063	0/500 0/500 0/528 0/520	5	4 lots 0/1520	Pass
High Temperature Data Retention / Cycling Endurance for NVM	JESD22-A1117 500 cycles @ Vcc=1.4V 88/130°C for 500 hours	3 lots, N≥39	Q26232 Q26231 Q26235	0/40 0/40 0/40		3 lots 0/120	Pass
Low Temperature Data Retention / Cycling Endurance for NVM	JESD22-A108 500 cycles @ Vcc=1.4V 25°C for 500 hours	3 lots, N≥38	Q26233 Q26230 Q26234	0/40 0/40 0/40		3 lots 0/120	Pass
Test Group E - Electrical Verification							
ESD-HBM	JA114	1 lot, N=>3	Q26025 Q32061	0/3 0/3	5	2000V	Pass
ESD-MM	JA115	1 lot, N=>3	Q26275	0/3		225V	Pass
ESD-CDM	JC101	1 lot, N=>3	Q26237 Q32062	0/3 0/3	5	1000V	Pass
Latch Up	JESD78 ±200mA	1 lot, N=>6	Q25523 Q25524 Q32120 Q32119	0/6 0/6 0/6 0/6	1 1 5 5	85°C 25°C 85°C 25°C	Pass

Approved by: Kathy Torres

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Prepared on: 14-May-12

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C8051F92x/3x Rev F, TSMC Fabrication, Unisem/SPIL Assembly except as noted							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
<b>Supplemental Package Qualification Data</b>							
<b>Test Group A - Accelerated Environment Stress Tests - ASECL - QFN</b>							
HAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>25	Q29385 Q29331 Q29336	0/78 0/80 0/80		3 lots 0/238	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q29387 Q29391 Q29395	0/77 0/77 0/77		3 lots 0/231	Pass
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q29388 Q29392 Q29396	0/77 0/77 0/77		3 lots 0/231	Pass
<b>Test Group A - Accelerated Environment Stress Tests - UNISEM - QFN</b>							
HAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>25	Q26130 Q26179 Q26439	0/80 0/80 0/80		3 lots 0/240	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q26129 Q26182 Q26441	0/80 0/80 0/100		3 lots 0/260	Pass
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q26131 Q26180 Q26440	0/84 0/85 0/101		3 lots 0/270	Pass

**Notes:**

1. SPIL 32LQFP, Precond MSL3@260C
2. SPIL 48TQFP, Precond MSL2@260C
3. SPIL 64 TQFP, Precond MSL3@260C
4. Qualification performed on Carsem 32QFN
5. Die revision F

This report applies to the following part numbers:			
C8051F920-F-GM	C8051F920-GQ	C8051F930-F-GM	C8051F930-GQ
C8051F920-F-GQ	C8051F921-F-GM	C8051F930-F-GQ	C8051F931-F-GM
C8051F920-GM	C8051F921-GM	C8051F930-GM	C8051F931-GM

Approved by: Kathy Torres

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Prepared on: 14-May-12