



## Process Change Notice #1611215

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<b>PCN Issue Date:</b> 11/21/2016	<b>Effective Date:</b> 2/24/2017									
<b>Title:</b> CP2102N Datasheet and Errata update										
<b>PCN Type:</b> <table border="0"><tr><td><input checked="" type="checkbox"/> <b>Datasheet</b></td><td><input type="checkbox"/> <b>Foundry</b></td><td><input type="checkbox"/> <b>Packing</b></td></tr><tr><td><input type="checkbox"/> <b>Product Revision</b></td><td><input type="checkbox"/> <b>Assembly</b></td><td><input type="checkbox"/> <b>Labeling</b></td></tr><tr><td><input type="checkbox"/> <b>Discontinuance</b></td><td><input type="checkbox"/> <b>Test</b></td><td><input checked="" type="checkbox"/> <b>Other</b></td></tr></table>		<input checked="" type="checkbox"/> <b>Datasheet</b>	<input type="checkbox"/> <b>Foundry</b>	<input type="checkbox"/> <b>Packing</b>	<input type="checkbox"/> <b>Product Revision</b>	<input type="checkbox"/> <b>Assembly</b>	<input type="checkbox"/> <b>Labeling</b>	<input type="checkbox"/> <b>Discontinuance</b>	<input type="checkbox"/> <b>Test</b>	<input checked="" type="checkbox"/> <b>Other</b>
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<input type="checkbox"/> <b>Discontinuance</b>	<input type="checkbox"/> <b>Test</b>	<input checked="" type="checkbox"/> <b>Other</b>								
<b>Last Order Date:</b> NA										
<b>PCN Details</b>										
<b>Description of Change:</b> Silicon Labs is pleased to announce the following datasheet update: The CP2102N data sheet was updated from Revision 1.0 to Revision 1.1.  <ol style="list-style-type: none"><li>1. Updated the minimum Operating Supply Voltage on VDD to 3.0 V in 1. Feature List and Ordering Information, 3.1.1 Recommended Operating Conditions, 3.1.4 Configuration Memory, and Figure 2.3 Connection Diagram with Voltage Regulator Not Used on page 3.</li><li>2. Updated 4.3.6 Clock Output (CLK) to specify that the clock is not present when the device is in USB Suspend.</li><li>3. Updated QFN24 bottom pad label to GND instead of VSS.</li><li>4. Adjusted D, E, and aaa in QFN28 Package Dimensions.</li><li>5. Adjusted D, E, and L in QFN24 Package Dimensions.</li></ol> Silicon Labs is also pleased to announce the following Errata update: The CP2102N A01 errata includes the following errata for A01 revision. These issues will be solved in A01 devices with a date code of 1639 or later.  <ol style="list-style-type: none"><li>1. Systems using CP2102N may see devices fail to respond until a power-on reset. If a device fails to respond properly, remove and replace power until the device properly responds. Devices with a date code of 1639 or later will not have this issue.</li><li>2. CP2102N devices can fail to notify the host of an error flag if an error occurs while the host is reading the UART status. Devices with a date code of 1639 or later will not have this issue.</li><li>3. Devices may draw additional current on the order of normal operation mode when not connected to USB and in the self-powered configuration. The devices may not enter suspend mode properly if the USB host is disconnected. This issue is fixed in devices with a date code of 1639 or later.</li></ol>										
<b>Reason for Change:</b> Silicon Labs has announced an errata document and updated datasheet for CP2102N A01 devices. Please visit <a href="http://www.silabs.com">www.silabs.com</a> for more information.										
<b>Impact on Form, Fit, Function, Quality, Reliability:</b> This change is considered a minor change which does not affect form, fit, function, quality, or reliability.										



## Process Change Notice #1611215

**Product Identification:**

CP2102N-A01-GQFN20  
CP2102N-A01-GQFN24  
CP2102N-A01-GQFN28  
CP2102N-A01-GQFN20R  
CP2102N-A01-GQFN24R  
CP2102N-A01-GQFN28R

**Last Date of Unchanged Product:** 2/17/2017

**Qualification Samples:**

Available upon request

**Specific conditions of acceptance of this change will be considered on a case by case basis if written notice is submitted within 30 days of this notice. To request further data or inquire about this notification, please contact your local Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at [www.silabs.com](http://www.silabs.com).**

**In some cases rejection of a change notice may impact Silicon Labs product pricing, delivery, quality, or reliability.**

**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.hagggar@silabs.com](mailto:katherine.hagggar@silabs.com)

**Qualification Data:**

Please see appendix for qualification report.

Appendix

**CP2102N AEC-Q100 Qualification Report**



**W7101F1 - Product Qualification Report Record Rev. H**

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CP2102N, HHGrace Fabrication, ASECL and UTACTH Assembly							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group A— Accelerated Environment Stress Tests - 20GFN - CuPd Wire ASECL							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q037190	0/77	1		
			Q037191	0/80	1	3 lots	Pass
			Q037192	0/80	1	0/237	
UHASt	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q037199	0/81	1		
			Q037200	0/80	1	3 lots	Pass
			Q037202	0/82	1	0/243	
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q037196	0/80	1		
			Q037197	0/80	1	3 lots	Pass
			Q037198	0/80	1	0/240	
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q037193	0/30	1		
			Q037194	0/30	1	3 lots	Pass
			Q037195	0/30	1	0/90	
Test Group A— Accelerated Environment Stress Tests - 24GFN - CuPd Wire UT ACTH							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q035792	0/80	1		
			Q035788	0/77	1	3 lots	Pass
			Q035789	0/80	1	0/237	
UHASt	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q037163	0/80	1		
			Q037164	0/80	1	3 lots	Pass
			Q037165	0/80	1	0/240	
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q038520	0/80	1		
			Q038521	0/80	1	3 lots	Pass
			Q038522	0/80	1	0/240	
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q035682	0/30	1		
			Q037977	0/80	1	3 lots	Pass
			Q037159	0/30	1	0/140	
Test Group A— Accelerated Environment Stress Tests - 28GFN - CuPd Wire UT ACTH							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q035792	0/80	1		
			Q035788	0/77	1	3 lots	Pass
			Q035789	0/80	1	0/237	
UHASt	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q037163	0/80	1		
			Q037164	0/80	1	3 lots	Pass
			Q037165	0/80	1	0/240	
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q037160	0/80	1		
			Q037161	0/80	1	3 lots	Pass
			Q037162	0/80	1	0/240	
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q035682	0/30	1		
			Q037977	0/80	1		
			Q037159	0/30	1	4 lots	Pass
			Q037806	0/45	1	0/185	

Approved by: Vincent Hidajat

1 of 3

Prepared on: 16-Dec-15

## CP2102N AEC-Q100 Qualification Report



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CP2102N, HHGrace Fabrication, ASECL and UTACTH Assembly							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail Pass or End	Notes	Summary	Status
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108 T <sub>J</sub> ≥ 125°C, Dynamic Vcc=3.6V, 1000 hours	3 lots, N=>77	Q035684 Q035685 Q037250	0/84 0/84 0/80		3 lots 0/248	Pass
LTOL	JA108 -40°C, Dynamic Vcc=3.6V, 1000 hours	1 lot, N=>32	Q036550	0/35		1 lots 0/35	Pass
ELFR	AEC-Q100-008 T <sub>J</sub> ≥ 125°C, Dynamic Vcc=3.6V, 48 hours	3 lots, N=>800	Q035681 Q036910 Q037251 Q036509	0/839 0/839 0/836 0/840		4 lots 0/3354	Pass
Data Retention High Temp	AEC Q100-005 150°C, 1000hrs	3 lots, N=>39	Q035781 Q035783 Q037252	0/45 0/44 0/45		3 lots 0/134	Pass
Data Retention Low Temp	AEC Q100-005 25°C, 1000hrs	3 lots, N=>38	Q035784 Q035786 Q037253	0/45 0/45 0/45		3 lots 0/135	Pass
NVM P/E Cycling High Temp	AEC Q100-005 85°C, 1000hrs	3 lots, N=>77	Q035787 Q035782 Q037254	0/84 0/84 0/84		3 lots 0/252	Pass
NVM P/E Cycling Lowtemp	AEC Q100-005 55°C, 1000hrs	3 lots, N=>77	Q035791 Q035785 Q037255	0/80 0/80 0/84		3 lots 0/244	Pass
Test Group C – Package Assembly Integrity Tests							
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 20QFN	Q037487	0/5	2	1 lots 0/5	Pass
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 28QFN	Q037489	0/5	3	1 lots 0/5	Pass
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 24QFN	Q038577	0/5	4	1 lots 0/5	Pass

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CP2102N, HHGrace Fabrication, ASECL and UTACTH Assembly							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail Pass or End	Notes	Summary	Status
Test Group E – Electrical Verification							
ESD-HBM	AEC-Q100-002	1 lot, N=>3	Q036561		5		2 kV
			Q035689		5		2 kV
			Q037643		5		2 kV
ESD-CDM	AEC-Q100-011	1 lot, N=>3	Q036705		2		1500 V
			Q035688		3		1250 V
			Q037648		3		1250 V
			Q036558		3		1500 V
			Q038628		4		1500 V
Latch Up	AEC-Q100-004 ±200mA	1 lot, N=>6	Q037647	125 °C			Pass
			Q037674	25 °C			Pass
Electromagnetic Compatibility	SAE J1752	1 lot, N=>1	Q038023				Pass

**Notes:**

1. Parts are Pre-conditioned at MSL2/260°C
2. 20-QFN
3. 28-QFN
4. 24-QFN
5. Five USB-related pins passed 8 kV. They are D+, D-, VBUS, VSS, VREGIN.

This report applies to the following part numbers:	
CP2102N-A01-GQFN20	
CP2102N-A01-GQFN24	
CP2102N-A01-GQFN28	