



Final Product/Process Change Notification

Document #:FPCN25572Z4

Issue Date:10 Oct 2023

Title of Change:	Update to FPCN25572Z - Update replacement OPNs.		
Proposed Changed Material First Ship Date:	01 Jan 2024 or earlier if approved by customer		
Current Material Last Order Date:	20 Nov 2023 <i>Orders received after the Current Material Last Order Date expiration are to be considered as orders for new changed material as described in this PCN. Orders for current (unchanged) material after this date will be per mutual agreement and current material inventory availability.</i>		
Current Material Last Delivery Date:	N/A <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i>		
Product Category:	Active components – Integrated circuits		
Contact information:	Contact your local onsemi Sales Office or logic.fpcn@onsemi.com		
PCN Samples Contact:	Contact your local onsemi Sales Office to place sample order. Sample requests are to be submitted no later than 45 days after publication of this change notification. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.		
Sample Availability Date:	N/A		
PPAP Availability Date:	N/A		
Additional Reliability Data:	Contact your local onsemi Sales Office or ChangKit.Mok@onsemi.com		
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. The change will be implemented at 'Proposed Change Material First Ship Date' in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements. onsemi will consider this proposed change and it's conditions acceptable, unless an inquiry is made in writing within 45 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com .		
Change Category			
Category	Type of Change		
Test Flow	Move of all or part of electrical wafer test and/or final test to a different location/site/subcontractor		
Process - Wafer Production	Move of all or part of wafer fab to a different location/site/subcontractor, New wafer diameter		
Equipment	Production from a new equipment/tool which uses a different basic technology or which due to its unique form or function can be expected to influence the integrity of the final product		
Data Sheet	Change of datasheet parameters/electrical specification (min./max./typ. values) and/or AC/DC specification		
Process - Assembly	Change of wire bonding		
Description and Purpose:			
With reference to FPCN25572Z , this FPCN is to update the replacement part number for below two parts. There is no change related to package changes and datatsheet changes info in FPCN25572Z .			
Current Orderable Part Number	Logic Family	Previous New Orderable Part Number	Updated New Orderable Part Number
NLV74HC1G00DFT1G	5 V MiniGate Logic	MC74HC1G00DBVT1G-Q	MC74HC1G00 DF T1G-Q
NLV74VHC1G01DFT1G	5 V MiniGate Logic	MC74VHC1G01DBVT1G-Q	MC74VHC1G01 DF T1G-Q

➤ **Assembly changes:**

	From	To
Bond Wire	Au	Cu
Fab Site	Tower	Vanguard

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.
- **Reliability Summary:** Refer to embedded excel RMS L82712 and S82713.

NLV74HC1Gxx, NLVHC1Gxx to MC74HC1Gxx-Q Family

Absolute Maximum Ratings and Recommended Operating Conditions

Existing Datasheet

MAXIMUM RATINGS				
Symbol	Parameter	Value	Unit	
V _{CC}	DC Supply Voltage	-0.5 to +7.0	V	
V _{IN}	DC Input Voltage	-0.5 to V _{CC} +0.5	V	
V _{OUT}	DC Output Voltage	-0.5 to V _{CC} +0.5	V	

RECOMMENDED OPERATING CONDITIONS					
Symbol	Parameter	Min	Max	Unit	
V _{CC}	DC Supply Voltage	2.0	6.0	V	
V _{IN}	DC Input Voltage	0.0	V _{CC}	V	
V _{OUT}	DC Output Voltage	0.0	V _{CC}	V	
T _A	Operating Temperature Range	-55	+125	°C	
t _r , t _f	Input Rise and Fall Time			ns	
		V _{CC} = 2.0 V	0	1000	
		V _{CC} = 3.0 V	0	800	
		V _{CC} = 4.5 V	0	500	
		V _{CC} = 6.0 V	0	400	

New

MAXIMUM RATINGS				
Symbol	Parameter	Value	Unit	
V _{CC}	DC Supply Voltage	-0.5 to +6.5	V	
V _{IN}	DC Input Voltage	-0.5 to V _{CC} +0.5	V	
V _{OUT}	DC Output Voltage	-0.5 to V _{CC} +0.5	V	

RECOMMENDED OPERATING CONDITIONS					
Symbol	Parameter	Min	Max	Unit	
V _{CC}	DC Supply Voltage	2.0	6.0	V	
V _{IN}	DC Input Voltage	0.0	V _{CC}	V	
V _{OUT}	DC Output Voltage	0.0	V _{CC}	V	
T _A	Operating Temperature Range	-55	+125	°C	
t _r , t _f	Input Rise and Fall Time			ns/V	
		V _{CC} = 2.0 V	0	20	
		V _{CC} = 2.3 V to 2.7 V	0	20	
		V _{CC} = 3.0 V to 3.6 V	0	10	
		V _{CC} = 4.5 V to 6.0 V	0	5	

DC Characteristics - No changes except for MC74HC1G14-Q

DC Characteristics – MC74HC1G14-Q

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{T+}	Positive Threshold Voltage		3.0	1.85	2.0	2.2	-	2.2	-	2.2	V
			4.5	2.86	3.0	3.15	-	3.15	-	3.15	
			5.5	3.5	3.6	3.85	-	3.85	-	3.85	
V _{T-}	Negative Threshold Voltage		3.0	0.9	1.5	1.85	0.9	-	0.9	-	V
			4.5	1.35	2.3	2.46	1.35	-	1.35	-	
			5.5	1.65	2.9	3.05	1.65	-	1.65	-	

New

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{T+}	Positive Threshold Voltage		3.0	-	2.0	2.2	-	2.2	-	2.2	V
			4.5	-	3.0	3.15	-	3.15	-	3.15	
			5.5	-	3.6	3.85	-	3.85	-	3.85	
V _{T-}	Negative Threshold Voltage		3.0	0.9	1.5	-	0.9	-	0.9	-	V
			4.5	1.35	2.3	-	1.35	-	1.35	-	
			5.5	1.65	2.9	-	1.65	-	1.65	-	

AC Characteristics – No change

NLV74VHC1Gxx, NLVVHC1Gxx to MC74VHC1Gxx Family

Absolute Maximum Ratings and Recommended Operating Conditions

Existing Datasheet

MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
V _{CC}	DC Supply Voltage	-0.5 to +7.0	V
V _{IN}	DC Input Voltage	-0.5 to +7.0	V
V _{OUT}	DC Output Voltage (NLV)	1Gxx	-0.5 to V _{CC} + 0.5
		1GTxx	Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V _{CC} = 0 V)
I _{IK}	DC Input Diode Current	V _{IN} < GND	-20
I _{OK}	DC Output Diode Current (NLV)	1Gxx	V _{OUT} > V _{CC} , V _{OUT} < GND
		1GTxx	V _{OUT} < GND

New

MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
V _{CC}	DC Supply Voltage	-0.5 to +6.5	V
V _{IN}	DC Input Voltage	-0.5 to +6.5	V
V _{OUT}	DC Output Voltage	Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V _{CC} = 0 V)	-0.5 to V _{CC} + 0.5
			-0.5 to +6.5
I _{IK}	DC Input Diode Current	V _{IN} < GND	-20
I _{OK}	DC Output Diode Current	V _{OUT} < GND	-20

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	2.0	5.5	V
V _{IN}	DC Input Voltage	0	5.5	V
V _{OUT}	DC Output Voltage	1Gxx	V _{CC}	V
		1GTxx	Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V _{CC} = 0 V)	0 0 0
T _A	Operating Temperature Range	-55	+125	°C
t _r , t _f	Input Rise and Fall Time	V _{CC} = 3.0 V to 3.6 V V _{CC} = 4.5 V to 5.5 V	0 100	20 20

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	2.0	5.5	V
V _{IN}	DC Input Voltage	0	5.5	V
V _{OUT}	DC Output Voltage	Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V _{CC} = 0 V)	0 0 0	V _{CC} 5.5 5.5
				V
T _A	Operating Temperature Range	-55	+125	°C
t _r , t _f	Input Rise and Fall Time	V _{CC} = 2.0 V V _{CC} = 2.3 V to 2.7 V V _{CC} = 3.0 V to 3.6 V V _{CC} = 4.5 V to 5.5 V	0 0 0 0	20 20 10 5

DC Characteristics - No changes except for MC74VHC1G14-Q and MC74VHC1GT14-Q

DC Characteristics for MC74VHC1G14-Q

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS (NLV74VHC1G14)

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{T+}	Positive Input Threshold Voltage		3.0	1.2	2.0	2.2	-	2.2	-	2.2	V
			4.5	1.75	3.0	3.15	-	3.15	-	3.15	
			5.5	2.15	3.6	3.85	-	3.85	-	3.85	
V _{T-}	Negative Input Threshold Voltage		3.0	0.9	1.5	1.9	0.9	-	0.9	-	V
			4.5	1.35	2.3	2.75	1.35	-	1.35	-	
			5.5	1.65	2.9	3.35	1.65	-	1.65	-	

New

DC ELECTRICAL CHARACTERISTICS (MC74VHC1G14)

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{T+}	Positive Input Threshold Voltage		3.0	-	2.0	2.2	-	2.2	-	2.2	V
			4.5	-	3.0	3.15	-	3.15	-	3.15	
			5.5	-	3.6	3.85	-	3.85	-	3.85	
V _{T-}	Negative Input Threshold Voltage		3.0	0.9	1.5	-	0.9	-	0.9	-	V
			4.5	1.35	2.3	-	1.35	-	1.35	-	
			5.5	1.65	2.9	-	1.65	-	1.65	-	

DC Characteristics for MC74VHC1GT14-Q

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS (NLV74VHC1GT14)

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{T+}	Positive Input Threshold Voltage		3.0	1.2	1.4	1.6	-	1.6	-	1.6	V
			4.5	1.58	1.74	2.0	-	2.0	-	2.0	
			5.5	1.79	1.94	2.1	-	2.1	-	2.1	
V _{T-}	Negative Input Threshold Voltage		3.0	0.35	0.76	0.93	0.35	-	0.35	-	V
			4.5	0.5	1.01	1.18	0.5	-	0.5	-	
			5.5	0.6	1.13	1.29	0.6	-	0.6	-	

New

DC ELECTRICAL CHARACTERISTICS (MC74VHC1GT14)

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{T+}	Positive Input Threshold Voltage		3.0	-	1.4	1.6	-	1.6	-	1.6	V
			4.5	-	1.74	2.0	-	2.0	-	2.0	
			5.5	-	1.94	2.1	-	2.1	-	2.1	
V _{T-}	Negative Input Threshold Voltage		3.0	0.35	0.76	-	0.35	-	0.35	-	V
			4.5	0.5	1.01	-	0.5	-	0.5	-	
			5.5	0.6	1.13	-	0.6	-	0.6	-	

AC Characteristics – No change



Final Product/Process Change Notification

Document #:FPCN25572Z4

Issue Date:10 Oct 2023

Reason / Motivation for Change:	Supply disruption
Anticipated impact on fit, form, function, reliability, product safety or manufacturability:	The device has been qualified and validated based on the same Product Specification. The device has successfully passed the qualification tests. Potential impacts can be identified, but due to testing performed by onsemi in relation to the PCN, associated risks are verified and excluded. No anticipated impacts.
Sites Affected:	
onsemi Sites	External Foundry/Subcon Sites
onsemi Leshan, China	Vanguard International Semiconductor, Taiwan
Marking of Parts/ Traceability of Change:	Custom source on label will show TW instead of US/JP to indicate new die source from Vanguard. Changed material may be identified by plant code or lot code too.
Reliability Data Summary:	
Please refer to the Reliability Summary Excel.	
<p>To view attachments:</p> <ol style="list-style-type: none"> 1. Download pdf copy of the PCN to your computer 2. Open the downloaded pdf copy of the PCN 3. Click on the paper clip icon available on the menu provided in the left/bottom portion of the screen to reveal the Attachment field 4. Then click on the attached file. 	
Electrical Characteristics Summary:	
Electrical characteristics available upon request.	

List of Affected Parts:		
<p>Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the PCN Customized Portal.</p>		
Current Part Number	New Part Number	Qualification Vehicle
NLV74HC1G00DFT1G	MC74HC1G00DFT1G-Q	NL27WZ14DFT2G, MC74VHC1G14DFT1G
NLV74VHC1G01DFT1G	MC74VHC1G01DFT1G-Q	NL27WZ14DFT2G, MC74VHC1G14DFT1G