



Final Product/Process Change Notification

Document #: FPCN25572Z

Issue Date: 30 Jun 2023

Title of Change:	Qualification of Vanguard Fab and Some Assembly Related Changes for Logic parts.
Proposed Changed Material First Ship Date:	See attached file for proposed first ship date for each product
Current Material Last Order Date	See attached file. Changed Material Sample Availability Date column
Current Material Last Delivery Date:	See attached file. Proposed Changed Material First Ship Date column
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 or < PCN.samples@onsemi.com >. Sample requests are to be submitted no later than 30 days from the date of first notification, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements. See attached file for anticipated availability date.
Sample Availability Date:	See attached file for Changed Material Sample Availability Date.
PPAP Availability Date:	See attached file for Changed Material Sample Availability Date.
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. FPCNs are issued 90 days prior to implementation of the change. The change will be implemented at 'Proposed Changed Material First Ship Date' for each part number in the attached file, in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements. onsemi will consider this change accepted on that date, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com .
Marking of Parts/ Traceability of Change:	As material from different FABs cannot be combined in to (1) reel, product from Vanguard will show "Diffused In: TW" on the label of the reel and box. Please see sample MPN on page 2 at the following link http://www.onsemi.com/pub_link/Collateral/LABELRM-D.PDF to see the location of the Diffused In notation.
Change Category	
Category	Type of Change
Process – Wafer Production	Move 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	Move assembly site, change of wire bonding



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Sites Affected:

onsemi Sites	External Foundry/Subcon Sites
onsemi Carmona, Philippines onsemi Leshan Phoenix Semiconductor, China onsemi Seremban, Malaysia onsemi Tarlac, Philippines onsemi Cebu, Philippines	Amkor Technology, Korea Amkor Technology, Philippines ATEC – Automated Technology, Philippines ATX Kun Shan, China ATX Chung Li, China ATX Shanghai, China Greatek Electronics, Taiwan Hana Jiaxing, China Hana Microelectronics, Thailand JCET Jiangyin, China Stars Microelectronics, Thailand UTAC Thai Ltd., Thailand UTL2 Bangsamak, Thailand Vanguard International Semiconductor, Taiwan

Description and Purpose:

The purpose of this notification is to notify customers of the qualification of Vanguard as a wafer supplier for most of the logic product portfolio. Please see the attached file for details on the disposition, sample schedule, and last order dates by part number. We have included the entire logic portfolio for your reference, including part numbers which are not changing, as well as those that have already been included on previous FPCNs.

The bulk of these products are currently processed at Tower Semiconductor, Ltd. (Tower) in Fab 1. Tower has communicated that all onsemi TS35/TS60/TS50 products in Fab 1 are to become obsolete in 2024, so an alternate source is required for customer support.

This FPCN will become effective for each part number on the 'Proposed Change Material First Ship Date' listed in the attached file. Deliveries will start immediately after receiving FPCN approval or Orders Authority (OA). We have no ability to support customer orders beyond the listed First Ship Date. If a customer does not wish to receive product from the new source, they should take action to cancel or push out all future orders. Customer should work with their local sales contacts to cancel or push orders as needed.

In addition, some products that are manufactured in TowerJazz Panasonic Semiconductor Co., Ltd. (TPSCo) in Japan and are also being transferred to Vanguard as well to consolidate our product portfolio and ensure strong future support.

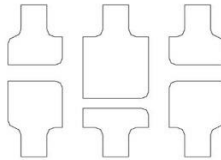
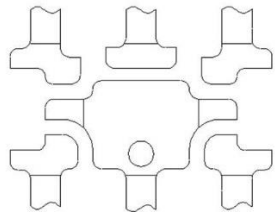
	From	To
Fab Site	Tower Semiconductor, TPSCo	Vanguard International Semiconductor (VIS)
Wafer size	150 mm and 200 mm	200 mm
Packaging	Refer to attached file and information below by Product Family/Qual Vehicle	Refer to attached file and information below by Product Family/Qual Vehicle
Part Number Changes	Refer to attached file	Refer to attached file
Product Marking	No change	
Datasheet	Current Revision	New Revision
Absolute Max Rating	6.5V or 7V	6.5V
Electrical Characteristics	Refer to attached file and information below by Product Family	Refer to attached file and information below by Product Family

5V MiniGate Logic

QV DEVICE NAME: NL27WZ14DBVT1G

PACKAGE: SC74

➤ Assembly changes:

	From	To
Lead frame	 Lead frame drawing is for reference only	 Lead frame drawing is for reference only
Mold Compound	Showa Denko GE200F HWG-S	Hysol GR640 HV

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

QV DEVICE NAME: MC74VHC1G14DBVT1G

PACKAGE: SC74A

➤ Assembly changes:

	From	To
Assembly Site	onsemi Seremban	onsemi Leshan Phoenix Semiconductor
Lead Frame	COPPER ALLOY CDA 194 with Ag SPOT Plated	Alloy 42 with OVERALL Cu Plated
Bond Wire	Au	Cu
Mold Compound	SUMITOMO EME-G600FB	Hysol GR640
Die Attach	NON-COND EPOXY	Eutectic
Package Type	TSOP5	SC74A

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet
- **Reliability Summary:** Refer to embedded excel RMS S82725.

QV DEVICE NAME: NL27WZ14DFT2G

PACKAGE: SC88

➤ Assembly changes:

	From	To
Bond Wire	Au	Cu

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



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5V MiniGate Logic

QV DEVICE NAME: MC74VHC1G14DFT1G

PACKAGE: SC88A

➤ Assembly changes:

	From	To
Bond Wire	Au or Cu	Cu

➤ Electrical Characteristics: Refer to tables at the end of this document for changes to datasheet.

➤ Reliability Summary: Refer to embedded excel RMS S85493.

QV DEVICE NAME: MC74VHC1G08P5T5G

PACKAGE: SOT953

➤ Assembly changes:

	From	To
Assembly Site	onsemi Leshan Phoenix Semiconductor	
Mold Compound	Showa Denko GE200F or Hysol GR640 HV	Hysol GR640 HV

➤ Electrical Characteristics: Refer to tables at the end of this document for changes to datasheet.

➤ Reliability Summary: Refer to embedded excel RMS S87090.

QV DEVICE NAME: NL17SZ08XV5T2GH

PACKAGE: SOT553

➤ Assembly changes:

	From	To
Assembly Site	onsemi Leshan Phoenix Semiconductor	
Bond Wire	Au or Cu	Cu
Mold Compound	Showa Denko GE200F	Hysol GR640 HV

➤ Electrical Characteristics: Refer to tables at the end of this document for changes to datasheet.

➤ Reliability Summary: Refer to embedded excel RMS S87092.

5V MiniGate Logic

QV DEVICE NAME : NL17SZ08MU1TCG and NL27WZ17MU1TCG

PACKAGE: UDFN6

➤ UDFN6 1.45x1.0 Assembly changes:

	From	To	
Assembly Site	onsemi Seremban	onsemi Seremban	onsemi Tarlac
Mold Compound	G760	Sumitomo EME-G770HM	SUMITOMO EME-G760
Wire Type	Au	PCC	PCC
Lead Frame	PPF	LF PPF Plated (C7025)	LF PPF PLATED (C7025)
Die Attach	8006NS	8006NS	8006NS

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.
- **Reliability Summary:** Refer to embedded excel RMS S87093, S87094, S87313 and S87316.

QV DEVICE NAME: MC74VHC3G14MU3TCG

PACKAGE: uQFN8

➤ uQFN8 1.6*1.6 Assembly changes:

	From	To	
Assembly Site	onsemi Seremban	onsemi Seremban	onsemi Tarlac
Mold Compound	G760	Sumitomo EME-G770HM	SUMITOMO EME-G760
Wire Type	Au	PCC	PCC
Lead Frame	PPF	LF PPF PLATED (C7025)	LF PPF PLATED (C7025)

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.
- **Reliability Summary:** Refer to embedded excel RMS S87960 and S87889.

QV DEVICE NAME: NC7WZ132K8X

PACKAGE: US8

➤ US8 Assembly Changes:

	From	To
Assembly Site	onsemi Seremban	Stars
Bond Wire	Au	PCC
Lead frame	CuAg	PPF
Mold Compound	EME-G600FB	EME G700LTD
Die Attach	8900NC	HR-5104

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.
- **Reliability Summary:** Refer to embedded excel RMS S87355.



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3V MiniGates Logic

QV DEVICE NAME: NC7SP14P5X

PACKAGE: SC88A

➤ **SC88 Assembly changes:**

	From	To
Assembly Site	onsemi Leshan Phoenix Semiconductor	onsemi Leshan Phoenix Semiconductor
Bond Wire	Au, Cu	Cu

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.
- **Reliability Summary:** Refer to embedded excel RMS S88008 and S88413.

HC Logic, LCX Logic, LVX Logic, VHC Logic, FACT Logic, Bus Switch, LV Logic, 5V Analog Switch

3V MiniGates Logic

QV DEVICE NAME: NLV74HC595ADTR2G, MC74LVX4051DTR2G, NLVHC4851ADTR2G, MC74LCX14DTR2G, NLV74HC244ADTR2G, MC74HC244ADTR2G

PACKAGE: TSSOP-14, TSSOP-16, TSSOP-20, TSSOP-48

➤ TSSOP-14 Assembly changes:

	From	To	
Assembly Site	onsemi Carmona, ATEC	onsemi Carmona	ATEC
Mold Compound	G600, G700LS	G700LS	G600
Wire Type	0.8 mil Au, 0.8 mil Cu	1 mil PCC	1 mil PCC
Lead Frame	PPF	PPF	Cu with Ag spot

➤ TSSOP-16 Assembly changes:

	From	To	
Assembly Site	onsemi Carmona, ATEC	onsemi Carmona	ATEC
Mold Compound	G600, G700LS	G700LS	G600
Wire Type	0.8 mil Au, 0.8 mil Cu	1 mil PCC	1 mil PCC
Lead Frame	PPF	PPF	Cu with Ag spot

➤ TSSOP-20 Assembly changes:

	From	To	
Assembly Site	onsemi Carmona, ATEC	onsemi Carmona	ATEC
Mold Compound	G700LS, CEL800JF	G700LS	G700LS
Epoxy	QMI519, CRM-1076WB	CRM-1076WB	CRM-1076WB
Wire Type	0.8 mil Au, 0.8 mil Cu	1 mil PCC	1 mil PCC

➤ TSSOP-48 Assembly Changes:

Not defined yet, FPCN will be updated when data is available

- **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.
- **Reliability Summary:** Refer to embedded excel RMS 088463, 089920, 089358, 88467, 89368, 89374, 89375, 88468, 89399, 89395, 89401 and TBD (TSSOP48).

HC Logic, LCX Logic, LVX Logic, VHC Logic, FACT Logic, Bus Switch, LV Logic, 5V Analog Switch

QV DEVICE NAME: MC74LCX14DR2G, NLV74HC595ADR2G, MC74HC595ADR2G, MC74LVX4051DR2G, NLV74HC4851ADR2G, MC74HC4851ADR2G, NLV74HC244ADWR2G, MC74HC244ADWR2G

PACKAGE: SOIC-14, SOIC-16, and SOICW-20

➤ For SOIC-14 package assembly changes:

	From	To		
Assembly Site	onsemi Carmona, Hana Micro., ATX Kunshan, ASE Chungli	onsemi Carmona	Hana Micro.	ATX Kunshan
LeadFrame	Cu with Ag spot	Cu with Ag spot	PPF	Cu with Ag spot
Bond Wire	0.8 mil Au, 0.8 mil Cu	1 mil PCC	1 mil PCC	1 mil PCC
Die Attach	CRM-1076WB	CRM-1076WB	CRM-1076WB	EN4900GC
Mold Compound	G600	G600	G600	CEL9240HF10AK

➤ For SOIC-16 package assembly changes:

	From	To		
Assembly Site	onsemi Carmona, ATEC, ATX Kunshan, ASE Chungli	onsemi Carmona	ATEC	ATX Kunshan
Bond Wire	0.8 mil Au, 0.8 mil Cu	1 mil PCC	1 mil PCC	1 mil PCC
Die Attach	CRM-1076WB	CRM-1076WB	CRM-1076WB	EN4900GC
Mold Compound	G600	G600	G600	CEL9240HF10AK

➤ For SOICW-20 package assembly changes:

	From	To	
Assembly Site	onsemi Carmona, ATEC, Greteck, ASE Chungli	onsemi Carmona	Greteck
Bond Wire	0.8 mil Au, 0.8 mil Cu	1 mil PCC	1 mil PCC
Die Attach	CRM-1076WB	CRM-1076WB	EN4900GC
Mold Compound	G600	G600	G600F

➤ **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.

➤ **Reliability Summary:** Refer to embedded excel RMS 89379, 89388, 89394, 89362, 89367, 89369, 89372, 88465, 89377, 89396 and 89402



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HC Logic, LCX Logic, LVX Logic, VHC Logic, FACT Logic, Bus Switch, LV Logic, 5V Analog Switch

QV DEVICE NAME: NLV74HC595AMN1TWG, MC74LVX4051MNTWG, NLV74HC4851AMN1TWG, NLV68SZ126MN2TWG

PACKAGE: QFN-16 and QFN-20

➤ For QFN-16 package assembly changes:

	From	To	
Assembly Site	onsemi Seremban	onsemi Tarlac	onsemi Seremban
LeadFrame	Cu with Ag spot	Cu with Ag spot	Cu with Ag spot
Die Attach	WBC 8006NS	CRM-1076WB	WBC 8006NS
Bond Wire	0.8 mil Au	0.8 mil PCC	0.8 mil PCC
Mold Compound	G760	G770HMD	G770HMD

➤ For QFN-20 package assembly changes in onsemi Tarlac:

	From	To
Die Attach	CRM1084P	CRM-1076WB
Bond Wire	0.8 mil PCC	1 mil PCC
Mold Compound	G760	G770HMD

➤ **Electrical Characteristics:** Refer to tables at the end of this document for changes to datasheet.

➤ **Reliability Summary:** Refer to embedded excel RMS 89269, 89405, 89440, 89427, 90474, 90492 and 89442.

Additional QVs for some remaining products TBD, FPCN to be updated when information is available

3V Translator, Autosense Translator, Bus Interface, 12V Analog Switch, FST Logic

QV DEVICE NAME: TBD

Qual vehicles and change information for these product families is still being developed. FPCN will be updated when information is available. Estimated dates for sample availability and qualification are available in the file attached.

5 V MiniGate Logic Datasheet Changes

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 _{TH}	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 _{TL}	Negative Threshold Voltage		3.0	0.9	1.5	1.65	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 _{TH}	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 _{TL}	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

5 V MiniGate Logic Datasheet Changes

Existing Datasheet

MAXIMUM RATINGS				
Symbol	Characteristic	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	V
		1GTxx	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	V _{IN} < GND	-20	mA
I _{OK}	DC Output Diode Current (NLV)	1Gxx	V _{OUT} > V _{CC} , V _{OUT} < GND	±20
		1GTxx	V _{OUT} < GND	-20

RECOMMENDED OPERATING CONDITIONS				
Symbol	Characteristic	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	0	V _{CC}
		1GTxx	0	V _{CC}
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

New

MAXIMUM RATINGS				
Symbol	Characteristic	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 -0.5 to +6.5	V
I _{IK}	DC Input Diode Current	V _{IN} < GND	-20	mA
I _{OK}	DC Output Diode Current	V _{OUT} < GND	-20	mA

RECOMMENDED OPERATING CONDITIONS				
Symbol	Characteristic	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
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}	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 _{TH}	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 _{TL}	Negative Input Threshold Voltage		3.0	0.9	1.5	1.9	0.9	-	0.9	-	V
			4.5	1.35	2.2	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 _{TH}	Positive Input Threshold Voltage		3.0 4.5 5.5	- - -	2.0 3.0 3.6	2.2 3.15 3.85	- - -	2.2 3.15 3.85	- - -	V	
V _{TL}	Negative Input Threshold Voltage		3.0 4.5 5.5	0.9 1.35 1.65	1.5 2.3 2.9	0.9 1.35 1.65	- - -	0.9 1.35 1.65	- - -	V	

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 _{TH}	Positive Input Threshold Voltage		3.0	1.2	1.4	1.6	-	1.8	-	1.8	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 _{TL}	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 _{TH}	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 _{TL}	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

NLV17SZxx, NLV27WZxx, NLV37WZxx, NLV7SZxx to NL17SZxx-Q, NL27WZxx-Q, NL37WZxx-Q, NL7SZxx-Q Family

Absolute Maximum Ratings and Recommended Operating Conditions – NLV17SZU04, NLV27SZU04 to NL17SZU04A-Q, NL27WZU04-Q

5 V MiniGate Logic Datasheet Changes

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 V _{CC} + 0.5	V
V _{OUT}	DC Output Voltage	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	±50	mA

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	1.65	5.5	V
V _{IN}	DC Input Voltage	0	5.5	V
V _{OUT}	DC Output Voltage	0	V _{CC}	V
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	ns/V

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	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	V _{IN} < GND -50	mA

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	1.65	5.5	V
V _{IN}	DC Input Voltage	0	5.5	V
V _{OUT}	DC Output Voltage	0	V _{CC}	V
T _A	Operating Temperature Range	-55	+125	°C
t _r , t _f	Input Rise and Fall Time	V _{CC} = 1.65 V to 1.95 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 20 20 10 5	ns/V

Absolute Maximum Ratings and Recommended Operating Conditions – All other devices

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	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	V
I _{IK}	DC Input Diode Current	V _{IN} < GND -50	mA
I _{OK}	DC Output Diode Current	V _{OUT} < GND -50	mA
I _{OK}	DC Output Diode Current	(NL17SZ32P5T5G-L22088 Only) ±50	mA

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	1.65	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	V _{CC} 5.5 5.5	V
V _{OUT}	DC Output Voltage	(NL17SZ32P5T5G-L22088 Only) 0	V _{CC}	V
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	ns/V

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	V
I _{IK}	DC Input Diode Current	V _{IN} < GND -50	mA
I _{OK}	DC Output Diode Current	V _{OUT} < GND -50	mA

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	1.65	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	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} = 1.65 V to 1.95 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 20 20 10 5	ns/V

DC Input Characteristics – NLV17SZ14, NLV17SZ17, NLV27WZ14, NLV27WZ17, NLV37WZ14, NLV37WZ17 to NL17SZ14-Q, NL17SZ17-Q, NL27WZ14-Q, NL27WZ17-Q, NL37WZ14-Q, NL37WZ17-Q

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Units
				Min	Typ	Max	Min	Max	
V _{T+}	Positive Input Threshold Voltage		1.65	0.6	1.0	1.4	0.6	1.4	V
			2.3	1.0	1.5	1.8	1.0	1.8	
			2.7	1.2	1.7	2.0	1.2	2.0	
			3.0	1.3	1.9	2.2	1.3	2.2	
			4.5	1.9	2.7	3.1	1.9	3.1	
			5.5	2.2	3.3	3.6	2.2	3.6	
V _{T-}	Negative Input Threshold Voltage		1.65	0.2	0.5	0.8	0.2	0.8	V
			2.3	0.4	0.75	1.15	0.4	1.15	
			2.7	0.5	0.87	1.4	0.5	1.4	
			3.0	0.6	1.0	1.5	0.6	1.5	
			4.5	1.0	1.5	2.0	1.0	2.0	
			5.5	1.2	1.9	2.3	1.2	2.3	

New

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Units
				Min	Typ	Max	Min	Max	
V _{T+}	Positive Input Threshold Voltage		1.65	-	1.0	1.4	-	1.4	V
			2.3	-	1.5	1.8	-	1.8	
			2.7	-	1.7	2.0	-	2.0	
			3.0	-	1.9	2.2	-	2.2	
			4.5	-	2.7	3.1	-	3.1	
			5.5	-	3.3	3.6	-	3.6	
V _{T-}	Negative Input Threshold Voltage		1.65	0.2	0.5	-	0.2	-	V
			2.3	0.4	0.75	-	0.4	-	
			2.7	0.5	0.87	-	0.5	-	
			3.0	0.6	1.0	-	0.6	-	
			4.5	1.0	1.5	-	1.0	-	
			5.5	1.2	1.9	-	1.2	-	

DC Input Characteristics – NLV7SZ57, NLV7SZ58, NLV7SZ97, NLV7SZ98, NLV7SZ99 to NL7SZ57-Q, NL7SZ58-Q, NL7SZ97-Q, NL7SZ98-Q, NLSZ99-Q

5 V MiniGate Logic Datasheet Changes

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	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 _{TH}	Positive Input Threshold Voltage		1.65	0.79	–	1.16	–	1.16	–	1.16	V
			2.3	1.11	–	1.56	–	1.56	–	1.56	
			3.0	1.5	–	1.87	–	1.87	–	1.87	
			4.5	2.16	–	2.74	–	2.74	–	2.74	
			5.5	2.61	–	3.33	–	3.33	–	3.33	
V _{TL}	Negative Input Threshold Voltage		1.65	0.35	–	0.62	0.35	–	0.35	–	V
			2.3	0.58	–	0.87	0.58	–	0.58	–	
			3.0	0.84	–	1.19	0.84	–	0.84	–	
			4.5	1.41	–	1.9	1.41	–	1.41	–	
			5.5	1.78	–	2.2	1.78	–	1.78	–	
V _{HI}	Negative Input Threshold Voltage		1.65	0.3	–	0.62	0.3	0.62	0.3	0.62	V
			2.3	0.4	–	0.8	0.4	0.8	0.4	0.8	
			3.0	0.53	–	0.87	0.53	0.87	0.53	0.87	
			4.5	0.71	–	1.04	0.71	1.04	0.71	1.04	
			5.5	0.8	–	1.2	0.8	1.2	0.8	1.2	

New

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	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 _{TH}	Positive Input Threshold Voltage		1.65	–	–	1.4	–	1.4	–	1.4	V
			2.3	–	–	1.8	–	1.8	–	1.8	
			3.0	–	–	2.2	–	2.2	–	2.2	
			4.5	–	–	3.1	–	3.1	–	3.1	
			5.5	–	–	3.6	–	3.6	–	3.6	
V _{TL}	Negative Input Threshold Voltage		1.65	0.2	–	–	0.2	–	0.2	–	V
			2.3	0.4	–	–	0.4	–	0.4	–	
			3.0	0.6	–	–	0.6	–	0.6	–	
			4.5	1.0	–	–	1.0	–	1.0	–	
			5.5	1.2	–	–	1.2	–	1.2	–	
V _{HI}	Negative Input Threshold Voltage		1.65	0.1	0.1	0.9	0.48	0.9	0.1	0.9	V
			2.3	0.25	0.25	1.1	0.75	1.1	0.25	1.1	
			3.0	0.4	0.4	1.2	0.93	1.2	0.4	1.2	
			4.5	0.6	0.6	1.5	1.2	1.5	0.6	1.5	
			5.5	0.7	0.7	1.7	1.4	1.7	0.7	1.7	

DC Input Characteristics – All other devices

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Units
				Min	Typ	Max	Min	Max	
V _{IH}	High-Level Input Voltage		1.65 to 1.95	0.75 × V _{CC}	–	–	0.75 × V _{CC}	–	V
			2.3 to 5.5	0.70 × V _{CC}	–	–	0.70 × V _{CC}	–	
V _{IL}	Low-Level Input Voltage		1.65 to 1.95	–	–	0.25 × V _{CC}	–	0.25 × V _{CC}	V
			2.3 to 5.5	–	–	0.30 × V _{CC}	–	0.30 × V _{CC}	

New

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Units
				Min	Typ	Max	Min	Max	
V _{IH}	High-Level Input Voltage		1.65 to 1.95	0.65 × V _{CC}	–	–	0.65 × V _{CC}	–	V
			2.3 to 5.5	0.70 × V _{CC}	–	–	0.70 × V _{CC}	–	
V _{IL}	Low-Level Input Voltage		1.65 to 1.95	–	–	0.35 × V _{CC}	–	0.35 × V _{CC}	V
			2.3 to 5.5	–	–	0.30 × V _{CC}	–	0.30 × V _{CC}	

AC Characteristics – No change

3 V MiniGate Logic Datasheet Changes

NL175SGxx to NL175SGxx-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 +5.5	V
V _{IN}	DC Input Voltage	-0.5 to +4.6	V
V _{OUT}	DC Output Voltage	-0.5 to V _{CC} + 0.5 Power-Down Mode (V _{CC} = 0 V)	V

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	0.9	3.6	V
V _{IN}	Digital Input Voltage	0.0	3.6	V
V _{OUT}	Output Voltage	0.0	V _{CC} 3.6	V
T _A	Operating Temperature Range	-55	+125	°C
Δt / ΔV	Input Transition Rise or Fall Rate	0	10	ns/V

New

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{CC}	DC Supply Voltage	-0.5 to +4.3	V
V _{IN}	DC Input Voltage	-0.5 to +4.3	V
V _{OUT}	DC Output Voltage	-0.5 to V _{CC} + 0.5 Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V _{CC} = 0 V)	V

Table 1. RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V _{CC}	Positive DC Supply Voltage	0.9	3.6	V
V _{IN}	Digital Input Voltage	0	3.6	V
V _{OUT}	Output Voltage	0	V _{CC} 3.6	V
T _A	Operating Free-Air Temperature	-55	+125	°C
t _r , t _f	Input Transition Rise or Fall Rate	0	10	ns/V

DC Input Characteristics for NL175G08-Q

5 V MiniGate Logic Datasheet Changes

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C		T _A = -55°C to +125°C		Unit	
				Min	Max	Min	Max		
V _{IH}	High-Level Input Voltage		0.9	V _{CC}		V _{CC}		V	
			1.1 to 1.3	0.7xV _{CC}		0.7xV _{CC}			
			1.4 to 1.6	0.65xV _{CC}		0.65xV _{CC}			
			1.65 to 1.95	0.65xV _{CC}		0.65xV _{CC}			
			2.3 to 2.7	1.7		1.7			
			3.0 to 3.6	2.0		2.0			
V _{IL}	Low-Level Input Voltage		0.9		GND		GND	V	
			1.1 to 1.3		0.3xV _{CC}		0.3xV _{CC}		
			1.4 to 1.6		0.35xV _{CC}		0.35xV _{CC}		
			1.65 to 1.95		0.35xV _{CC}		0.35xV _{CC}		
			2.3 to 2.7		0.7		0.7		
			3.0 to 3.6		0.8		0.8		

New

Table 2. DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -55°C to +125°C			Unit	
				Min	Typ	Max	Min	Max			
V _{IH}	High-Level Input Voltage		0.9	-	V _{CC}	-	-	-	-	V	
			1.1 to 1.3	0.7 × V _{CC}	-	-	0.7 × V _{CC}	-	-		
			1.4 to 1.6	0.65 × V _{CC}	-	-	0.65 × V _{CC}	-	-		
			1.65 to 1.95	0.65 × V _{CC}	-	-	0.65 × V _{CC}	-	-		
			2.3 to 2.7	1.7	-	-	1.7	-	-		
			3.0 to 3.6	2.0	-	-	2.0	-	-		
V _{IL}	Low-Level Input Voltage		0.9	-	GND	-	-	-	-	V	
			1.1 to 1.3	-	-	0.3 × V _{CC}	-	0.3 × V _{CC}	-		-
			1.4 to 1.6	-	-	0.35 × V _{CC}	-	0.35 × V _{CC}	-		-
			1.65 to 1.95	-	-	0.35 × V _{CC}	-	0.35 × V _{CC}	-		-
			2.3 to 2.7	-	-	0.7	-	0.7	-		-
			3.0 to 3.6	-	-	0.8	-	0.8	-		-

DC Input Characteristics for NL17SG14-Q and NL17SG17-Q

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	
V _{T+}	Positive-Going Input Threshold Voltage		0.9	0.64	0.7	0.86	0.62	0.87	V
			1.1	0.73	0.81	0.95	0.71	1	
			1.4	0.86	0.94	1.16	0.84	1.2	
			1.65	0.95	1.06	1.25	0.94	1.3	
			2.3	1.22	1.36	1.6	1.18	1.65	
			3.0	1.51	1.8	2.05	1.38	2.1	
V _{T-}	Negative-Going Input Threshold Voltage		0.9	0.09	0.23	0.30	0.08	0.33	V
			1.1	0.15	0.33	0.39	0.12	0.43	
			1.4	0.3	0.47	0.54	0.25	0.55	
			1.65	0.35	0.6	0.65	0.3	0.65	
			2.3	0.55	0.85	0.88	0.5	0.88	
			3.0	0.95	1.13	1.16	0.9	1.16	
V _H	Hysteresis Voltage		0.9	0.15	0.5	0.75	0.2	0.8	V
			1.1	0.15	0.5	0.75	0.2	0.8	
			1.4	0.15	0.5	0.75	0.2	0.8	
			1.65	0.15	0.5	0.75	0.2	0.8	
			2.3	0.15	0.5	0.75	0.2	0.8	
			3.0	0.25	0.65	0.85	0.3	0.9	

New

Table 3. DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -55°C to +125°C		Unit
				Min	Typ	Max	Min	Max	
V _{TH}	Positive Going Input Threshold Voltage		0.9	-	0.7	-	-	-	V
			1.1	-	0.81	0.95	-	0.95	
			1.4	-	0.94	1.16	-	1.16	
			1.65	-	1.06	1.3	-	1.3	
			2.3	-	1.36	1.73	-	1.73	
			3.0	-	1.8	2.24	-	2.24	
V _{TL}	Negative Going Input Threshold Voltage		0.9	-	0.23	-	-	-	V
			1.1	0.15	0.33	-	0.15	-	
			1.4	0.3	0.47	-	0.3	-	
			1.65	0.35	0.6	-	0.35	-	
			2.3	0.55	0.85	-	0.55	-	
			3.0	0.95	1.13	-	0.95	-	
V _H	Hysteresis Voltage		0.9	-	0.27	-	-	-	V
			1.1	0.2	0.35	0.8	0.2	0.8	
			1.4	0.25	0.41	0.86	0.25	0.86	
			1.65	0.30	0.46	0.9	0.30	0.9	
			2.3	0.40	0.56	1.05	0.40	1.05	
			3.0	0.49	0.59	1.1	0.49	1.1	

DC Input Characteristics for NL17SGU04-Q - TBD

DC Output Characteristics for NL17SGxx-Q

Existing Datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	
V _{OH}	High-Level Output Voltage	V _{IH} = V _{IH} or V _{IL}	I _{OH} = -20 μA	0.9	0.75		0.75		V
			I _{OH} = -0.3 mA	1.1 to 1.3	0.75 x V _{CC}		0.75 x V _{CC}		
			I _{OH} = -1.7 mA	1.4 to 1.6	0.75 x V _{CC}		0.75 x V _{CC}		
			I _{OH} = -3.0 mA	1.65 to 1.95	V _{CC} - 0.45		V _{CC} - 0.45		
			I _{OH} = -4.0 mA	2.3 to 2.7	2.0		2.0		
			I _{OH} = -8.0 mA	3.0 to 3.6	2.48		2.48		
			V _{OL}	Low-Level Output Voltage	V _{IH} = V _{IH} or V _{IL}	I _{OL} = 20 μA	0.9		0.1
I _{OL} = 0.3 mA	1.1 to 1.3	0.25 x V _{CC}					0.25 x V _{CC}		
I _{OL} = 1.7 mA	1.4 to 1.6	0.25xV _{CC}					0.25 x V _{CC}		
I _{OL} = 3.0 mA	1.65 to 1.95	0.45					0.45		
I _{OL} = 4.0 mA	2.3 to 2.7	0.4					0.4		
I _{OL} = 8.0 mA	3.0 to 3.6	0.4					0.4		

New

Table 3. DC ELECTRICAL CHARACTERISTICS

Table 1. Absolute Maximum Ratings									
Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -55°C to +125°C		Unit
				Min	Typ	Max	Min	Max	
V _{OH}	High-Level Output Voltage	V _{IH} = V _{IH} or V _{IL}							V
		I _{OH} = -20 μA	0.9	-	0.75	-	-	-	
		I _{OH} = -0.3 mA	1.1 to 1.3	0.75 × V _{CC}	-	-	0.75 × V _{CC}	-	
		I _{OH} = -1.7 mA	1.4 to 1.6	0.75 × V _{CC}	-	-	0.75 × V _{CC}	-	
		I _{OH} = -3.0 mA	1.65 to 1.95	V _{CC} - 0.45	-	-	V _{CC} - 0.45	-	
		I _{OH} = -4.0 mA	2.3 to 2.7	2.0	-	-	2.0	-	
V _{OL}	Low-Level Output Voltage	I _{OH} = -8.0 mA	3.0 to 3.6	2.48	-	-	2.48	-	V
		I _{OL} = 20 μA	0.9	-	0.1	-	-	-	
		I _{OL} = 0.3 mA	1.1 to 1.3	-	-	0.25 × V _{CC}	-	0.25 × V _{CC}	
		I _{OL} = 1.7 mA	1.4 to 1.6	-	-	0.25 × V _{CC}	-	0.25 × V _{CC}	
		I _{OL} = 3.0 mA	1.65 to 1.95	-	-	0.45	-	0.45	
		I _{OL} = 4.0 mA	2.3 to 2.7	-	-	0.4	-	0.4	
		I _{OL} = 8.0 mA	2.7 to 3.6	-	-	0.4	-	0.4	

AC Characteristics for NL17SGxx-Q

5 V MiniGate Logic Datasheet Changes

Existing Datasheet

AC ELECTRICAL CHARACTERISTICS (Input $t_i = t_f = 3.0$ ns)

Symbol	Parameter	Test Condition	V_{CC} (V)	$T_A = 25^\circ\text{C}$			$T_A = -55^\circ\text{C to } +125^\circ\text{C}$		Unit
				Min	Typ	Max	Min	Max	
t_{PLH} , t_{PHL}	Propagation Delay, A or Y	$C_L = 10$ pF, $R_L = 1$ M Ω	0.9	–	27.3	–	–	–	ns
			1.1 to 1.3	–	13.0	22.6	1.0	35.9	
			1.4 to 1.6	–	7.5	10.5	1.0	11.3	
			1.65 to 1.95	–	6.0	7.8	1.0	8.2	
			2.3 to 2.7	–	4.3	5.4	1.0	5.8	
			3.0 to 3.6	–	3.5	4.4	1.0	4.6	
		$C_L = 15$ pF, $R_L = 1$ M Ω	0.9	–	29.5	–	–	–	ns
			1.1 to 1.3	–	14.3	25.1	1.0	41.6	
			1.4 to 1.6	–	8.0	11.5	1.0	12.6	
			1.65 to 1.95	–	6.3	8.4	1.0	8.7	
			2.3 to 2.7	–	4.6	5.7	1.0	6.1	
			3.0 to 3.6	–	3.7	4.6	1.0	5.0	
		$C_L = 30$ pF, $R_L = 1$ M Ω	0.9	–	40.5	–	–	–	ns
			1.1 to 1.3	–	19.6	35.7	1.0	58.1	
			1.4 to 1.6	–	10.7	15.8	1.0	17.6	
			1.65 to 1.95	–	7.8	10.7	1.0	11.7	
			2.3 to 2.7	–	5.4	6.9	1.0	8.1	
			3.0 to 3.6	–	4.3	5.2	1.0	6.1	

New

Table 4. AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Condition	V_{CC} (V)	$T_A = 25^\circ\text{C}$			$T_A = -55^\circ\text{C to } +125^\circ\text{C}$		Unit
				Min	Typ	Max	Min	Max	
t_{PLH} , t_{PHL}	Propagation Delay, A to Y (Figures 2 and 3)	$C_L = 10$ pF, $R_L = 1$ M Ω	0.9	–	TBD	–	–	–	ns
			1.1 to 1.3	–	TBD	TBD	–	TBD	
			1.4 to 1.6	–	TBD	10.5	–	11.3	
			1.65 to 1.95	–	TBD	7.8	–	8.2	
			2.3 to 2.7	–	TBD	5.4	–	5.8	
			3.0 to 3.6	–	TBD	4.4	–	4.6	
		$C_L = 15$ pF, $R_L = 1$ M Ω	0.9	–	TBD	–	–	–	ns
			1.1 to 1.3	–	TBD	TBD	–	TBD	
			1.4 to 1.6	–	TBD	11.5	–	12.6	
			1.65 to 1.95	–	TBD	8.4	–	8.7	
			2.3 to 2.7	–	TBD	5.7	–	6.1	
			3.0 to 3.6	–	TBD	4.6	–	5.0	
		$C_L = 30$ pF, $R_L = 1$ M Ω	0.9	–	TBD	–	–	–	ns
			1.1 to 1.3	–	TBD	TBD	–	TBD	
			1.4 to 1.6	–	TBD	15.8	–	17.6	
			1.65 to 1.95	–	TBD	10.7	–	11.7	
			2.3 to 2.7	–	TBD	6.9	–	8.1	
			3.0 to 3.6	–	TBD	5.2	–	6.1	

Reliability Data Summary:

Refer to attached file of the Product Family/Qual Vehicle.

To view attachments:

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 are not impacted.

List of Affected Parts:

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](#).

To view attached Parts List:

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/s.

PCN Product List Addendum for:

Customer Contact Name: Drop box Digi-Key

Customer Contact Email: digikey.supplierinfo@digikey.com

Appendix A: Changed Products

PCN#: FPCN25572Z
Issue Date: Jun 30, 2023

DIKG: DIGI-KEY (page 1 of 7)

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NLV7WBD3125USG		TBD	NA	
NLVPCA9306AMUTCG		TBD	NA	
NLVVHC1G132DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G132DFT2G-Q	
NLVVHC1G132DTT1G		NL27WZ14DBVT1G,MC74VHC1G14DFT1G	MC74VHC1G132DBVT1G-Q	
NLVVHC1G135DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G135DFT2G-Q	
NLVVHC1G14DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G14DFT1G-Q	
NLVVHC1G14DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G14DFT2G-Q	
NLVVHC1G32DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G32DFT1G-Q	
NLVVHC1G32DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G32DFT2G-Q	
NLVVHC1G50DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G50DFT2G-Q	
NLVVHC1G86DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G86DFT1G-Q	
NLVVHC1GT00DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT00DFT2G-Q	
NLVVHC1GT02DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT02DFT2G-Q	
NLVVHC1GT04DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT04DFT1G-Q	
NLVVHC1GT04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT04DFT2G-Q	
NLVVHC1GT08DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT08DFT1G-Q	
NLVVHC1GT08DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT08DFT2G-Q	
NLVVHC1GT08DTT1G		NL27WZ14DBVT1G,MC74VHC1G14DFT1G	MC74VHC1GT08DBVT1G-Q	
NLVVHC1GT125DF1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT125DFT1G-Q	
NLVVHC1GT125DF2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT125DFT2G-Q	
NLVVHC1GT125DT1G		NL27WZ14DBVT1G,MC74VHC1G14DFT1G	MC74VHC1GT125DBVT1G-Q	
NLVVHC1GT126DF1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT126DFT1G-Q	
NLVVHC1GT126DF2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT126DFT2G-Q	
NLVVHC1GT126DT1G		NL27WZ14DBVT1G,MC74VHC1G14DFT1G	MC74VHC1GT126DBVT1G-Q	
NLVVHC1GT14DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT14DFT1G-Q	
NLVVHC1GT32DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT32DFT1G-Q	
NLVVHC1GT32DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT32DFT2G-Q	
NLVVHC1GT50DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT50DFT1G-Q	
NLVVHC1GT50DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GT50DFT2G-Q	
NLVVHC1GU04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1GU04DFT2G-Q	
NLVVHC4051DTR2G		TBD	MC74VHC4051DTR2G-Q	
NLVVHC86DTR2G		MC74LCX14DTR2G	MC74VHC86DTR2G-Q	
NLVVHCT125ADTRG		MC74LCX14DTR2G	MC74VHCT125ADTR2G-Q	
NLVVHCT126ADTR2G		MC74LCX14DTR2G	MC74VHCT126ADTR2G-Q	
NLVVHCT50ADTR2G		MC74LCX14DTR2G	MC74VHCT50ADTR2G-Q	
NLVX1G74MUTCG		MC74VHC3G14MU3TCG	NL17SZ74MQ1TCG-Q	

Appendix A: Changed Products

PCN#: FPCN25572Z
Issue Date: Jun 30, 2023

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NLV17SG08DFT2G		NC7SP14P5X	NL17SG08DFT2G-Q	
NLV17SG14DFT2G		NC7SP14P5X	NL17SG14DFT2G-Q	
NLV17SGU04DFT2G		NC7SP14P5X	NL17SGU04DFT2G-Q	
NLV18SZ17DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NA	
NLV18SZ14DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NA	
NLV17SZ04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ04DFT2G-Q	
NLV17SZ00DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ00DFT2G-Q	
NLV17SZ02DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ02DFT2G-Q	
NLV17SZ07DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ07DFT2G-Q	
NLV17SZ06DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ06DFT2G-Q	
NLV17SZ08DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ08DFT2G-Q	
NLV17SZ125DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ125DFT2G-Q	
NLV17SZ125DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ125DFT1G-Q	
NLV17SZ14DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ14DFT2G-Q	
NLV17SZ126DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ126DFT2G-Q	
NLV17SZ32DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ32DFT2G-Q	
NLV17SZ17DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ17DFT2G-Q	
NLV17SZ74USG-22523Z		NC7WZ132K8X	NL17SZ74USG-Q	
NLV17SZ74USG		NC7WZ132K8X	NL17SZ74USG-Q	
NLV17SZU04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZU04ADFT2G-Q	
NLV27WZ00USG		NC7WZ132K8X	NL27WZ00USG-Q	
NLV27WZ04DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ04DFT1G-Q	
NLV27WZ04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ04DFT2G-Q	
NLV17SZ86DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL17SZ86DFT2G-Q	
NLV27WZ07DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ07DFT2G-Q	
NLV27WZ06DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ06DFT2G-Q	
NLV27WZ08USG-22523Z		NC7WZ132K8X	NL27WZ08USG-Q	
NLV27WZ08USG		NC7WZ132K8X	NL27WZ08USG-Q	
NLV27WZ125USG		NC7WZ132K8X	NL27WZ125USG-Q	
NLV27WZ126USG		NC7WZ132K8X	NL27WZ126USG-Q	
NLV27WZ14DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ14DFT2G-Q	
NLV27WZ16DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ16DFT2G-Q	
NLV27WZ32USG		NC7WZ132K8X	NL27WZ32USG-Q	
NLV27WZ17DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZ17DFT2G-Q	
NLV27WZU04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL27WZU04ADFT2G-Q	
NLV27WZ86USG		NC7WZ132K8X	NL27WZ86USG-Q	

Appendix A: Changed Products

PCN#: FPCN25572Z
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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NLV37WZ04USG		NC7WZ132K8X	NL37WZ04USG-Q	
NLV37WZ07USG		NC7WZ132K8X	NL37WZ07USG-Q	
NLV37WZ16USG		NC7WZ132K8X	NL37WZ16USG-Q	
NLV37WZ14USG		NC7WZ132K8X	NL37WZ14USG-Q	
NLV74AC08DR2G		MC74LCX14DR2G	MC74AC08DR2G-Q	
NLV74AC14DR2G		MC74LCX14DR2G	MC74AC14DR2G-Q	
NLV74AC14DTR2G		MC74LCX14DTR2G	MC74AC14DTR2G-Q	
NLV37WZ17USG		NC7WZ132K8X	NL37WZ17USG-Q	
NLV74AC157DR2G		MC74HC595ADR2G	MC74AC157DR2G-Q	
NLV74HC02ADTR2G		MC74LCX14DTR2G	MC74HC02ADTR2G-Q	
NLV74AC32DR2G		MC74LCX14DR2G	MC74AC32DR2G-Q	
NLV74AC74DR2G		MC74LCX14DR2G	MC74AC74DR2G-Q	
NLV74ACT00DR2G		MC74LCX14DR2G	MC74ACT00DR2G-Q	
NLV74ACT125DR2G		MC74LCX14DR2G	MC74ACT125DR2G-Q	
NLV74HC04ADTR2G		MC74LCX14DTR2G	MC74HC04ADTR2G-Q	
NLV74HC04ADR2G		MC74LCX14DR2G	MC74HC04ADR2G-Q	
NLV74HC08ADR2G		MC74LCX14DR2G	MC74HC08ADR2G-Q	
NLV74HC05ADTR2G		MC74LCX14DTR2G	MC74HC05ADTR2G-Q	
NLV74HC11ADR2G		MC74LCX14DR2G	MC74HC11ADR2G-Q	
NLV74HC08ADTR2G		MC74LCX14DTR2G	MC74HC08ADTR2G-Q	
NLV74HC132ADR2G		MC74LCX14DR2G	MC74HC132ADR2G-Q	
NLV74HC126ADTR2G		MC74LCX14DTR2G	MC74HC126ADTR2G-Q	
NLV74HC138ADTR2G		NLV74HC595ADTR2G	MC74HC138ADTR2G-Q	
NLV74HC132ADTR2G		MC74LCX14DTR2G	MC74HC132ADTR2G-Q	
NLV74HC14ADR2G		MC74LCX14DR2G	MC74HC14ADR2G-Q	
NLV74HC139ADTR2G		NLV74HC595ADTR2G	MC74HC139ADTR2G-Q	
NLV74HC14ADTR2G		MC74LCX14DTR2G	MC74HC14ADTR2G-Q	
NLV74HC151ADTR2G		NLV74HC595ADTR2G	MC74HC151ADTR2G-Q	
NLV74HC151ADR2G		MC74HC595ADR2G	MC74HC151ADR2G-Q	
NLV74HC157ADTR2G		NLV74HC595ADTR2G	MC74HC157ADTR2G-Q	
NLV74HC157ADR2G		MC74HC595ADR2G	MC74HC157ADR2G-Q	
NLV74HC164ADTR2G		NLV74HC595ADTR2G	MC74HC164ADTR2G-Q	
NLV74HC164ADR2G		MC74HC595ADR2G	MC74HC164ADR2G-Q	
NLV74HC165ADTR2G		NLV74HC595ADTR2G	MC74HC165ADTR2G-Q	
NLV74HC165ADR2G		MC74HC595ADR2G	MC74HC165ADR2G-Q	
NLV74HC1G00DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G00DBVT1G-Q	
NLV74HC174ADTR2G		NLV74HC595ADTR2G	MC74HC174ADTR2G-Q	
NLV74HC175ADTR2G		NLV74HC595ADTR2G	MC74HC175ADTR2G-Q	
NLV74HC1G00DTT1G		NL27WZ14DBVT1G,MC74VHC1G14DBVT1G	MC74HC1G00DBVT1G-Q	
NLV74HC238ADTR2G		NLV74HC595ADTR2G	MC74HC238ADTR2G-Q	
NLV74HC1G14DTT1G		NL27WZ14DBVT1G,MC74VHC1G14DBVT1G	MC74HC1G14DBVT1G-Q	
NLV74HC240ADTR2G		MC74HC244ADTR2G	MC74HC240ADTR2G-Q	
NLV74HC244ADTR2G		MC74HC244ADTR2G	MC74HC244ADTR2G-Q	
NLV74HC244ADWR2G		MC74HC244ADWR2G	MC74HC244ADWR2G-Q	
NLV74HC32ADR2G		MC74LCX14DR2G	MC74HC32ADR2G-Q	
NLV74HC251ADR2G		MC74HC595ADR2G	MC74HC251ADR2G-Q	
NLV74HC273ADWR2G		MC74HC244ADWR2G	MC74HC273ADWR2G-Q	
NLV74HC32ADG		MC74LCX14DR2G	MC74HC32ADG-Q	
NLV74HC365ADTR2G		NLV74HC595ADTR2G	MC74HC365ADTR2G-Q	
NLV74HC32ADTR2G		MC74LCX14DTR2G	MC74HC32ADTR2G-Q	
NLV74HC4051ADR2G		TBD	MC74HC4051ADR2G-Q	
NLV74HC4052ADR2G		TBD	MC74HC4052ADR2G-Q	
NLV74HC4020ADTR2G		TBD	MC74HC4020ADTR2G-Q	
NLV74HC4052ADTRG		TBD	MC74HC4052ADTR2G-Q	
NLV74HC4053ADR2G		TBD	MC74HC4053ADR2G-Q	
NLV74HC4066ADR2G		TBD	MC74HC4066ADR2G-Q	
NLV74HC4538ADR2G		TBD	MC74HC4538ADR2G-Q	
NLV74HC4851ADR2G		MC74HC4851ADR2G	MC74HC4851ADR2G-Q	

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PCN#: FPCN25572Z
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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NLV74HC4852ADR2G		MC74HC4851ADR2G, NLV74HC4851ADR2G	MC74HC4852ADR2G-Q	
NLV74HC540ADR2G		MC74HC244ADR2G	MC74HC540ADR2G-Q	
NLV74HC541ADR2G		MC74HC244ADR2G	MC74HC541ADR2G-Q	
NLV74HC541ADWR2G		MC74HC244ADWR2G	MC74HC541ADWR2G-Q	
NLV74HC573ADR2G		MC74HC244ADR2G	MC74HC573ADR2G-Q	
NLV74HC4067ADR2G		TBD	MC74HC4067ADR2G-Q	
NLV74HC589ADR2G		MC74HC595ADR2G	MC74HC589ADR2G-Q	
NLV74HC595ADR2G		NLV74HC595ADR2G	MC74HC595ADR2G-Q	
NLV74HC589ADR2G		NLV74HC595ADR2G	MC74HC589ADR2G-Q	
NLV74HC74ADR2G		MC74LCX14DR2G	MC74HC74ADR2G-Q	
NLV74HC74ADR2G		MC74LCX14DTR2G	MC74HC74ADR2G-Q	
NLV74HCT125ADR2G		MC74LCX14DR2G	MC74HCT125ADR2G-Q	
NLV74HCT08ADR2G		MC74LCX14DTR2G	MC74HCT08ADR2G-Q	
NLV74HCT14ADR2G		MC74LCX14DTR2G	MC74HCT14ADR2G-Q	
NLV74HCT573ADTRG		MC74HC244ADR2G	MC74HCT573ADTRG-Q	
NLV74HCT574ADWRG		MC74HC244ADWR2G	MC74HCT574ADWRG-Q	
NLV74HCT74ADR2G		MC74LCX14DR2G	MC74HCT74ADR2G-Q	
NLV74HCT14ADR2G		MC74LCX14DR2G	MC74HCT14ADR2G-Q	
NLV74LCX244DTR2G		MC74HC244ADR2G	MC74LCX244DTR2G-Q	
NLV74HCU04ADR2G		MC74LCX14DTR2G	MC74HCU04ADR2G-Q	
NLV74LCX245DTR2G		MC74HC244ADR2G	MC74LCX245DTR2G-Q	
NLV74LVX14DTR2G		MC74LCX14DTR2G	MC74LVX14DTR2G-Q	
NLV74LCX00DTR2G		MC74LCX14DTR2G	MC74LCX00DTR2G-Q	
NLV74LCX02DTR2G		MC74LCX14DTR2G	MC74LCX02DTR2G-Q	
NLV74VHC00DTR2G		MC74LCX14DTR2G	MC74VHC00DTR2G-Q	
NLV74LCX04DTR2G		MC74LCX14DTR2G	MC74LCX04DTR2G-Q	
NLV74VHC125DR2G		MC74LCX14DR2G	MC74VHC125DR2G-Q	
NLV74VHC125DTR2G		MC74LCX14DTR2G	MC74VHC125DTR2G-Q	
NLV74VHC02DTR2G		MC74LCX14DTR2G	MC74VHC02DTR2G-Q	
NLV74VHC08DTRG		MC74LCX14DTR2G	MC74VHC08DTRG-Q	
NLV74VHC1G01DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G01DBVT1G-Q	
NLV74VHC126DTR2G		MC74LCX14DTR2G	MC74VHC126DTR2G-Q	
NLV74VHC139DR2G		MC74HC595ADR2G	MC74VHC139DR2G-Q	
NLV74VHC139DTR2G		NLV74HC595ADR2G	MC74VHC139DTR2G-Q	
NLV74VHC14DTR2G		MC74LCX14DTR2G	MC74VHC14DTR2G-Q	
NLV74VHC1G08DFT1G		NL27WZ14DBVT1G, MC74VHC1G14DFT1G	MC74VHC1G08DBVT1G-Q	
NLV74VHC1G09DFT1G		NL27WZ14DBVT1G, MC74VHC1G14DFT1G	MC74VHC1G09DBVT1G-Q	
NLV74VHC244DTR2G		MC74HC244ADR2G	MC74VHC244DTR2G-Q	
NLV74VHC32DR2G		MC74LCX14DR2G	MC74VHC32DR2G-Q	
NLV74VHC32DTR2G		MC74LCX14DTR2G	MC74VHC32DTR2G-Q	
NLV74VHC74DTR2G		MC74LCX14DTR2G	MC74VHC74DTR2G-Q	
NLV74VHCT08ADR2G		MC74LCX14DTR2G	MC74VHCT08ADR2G-Q	
NLV74VHCT08DTR2G		MC74LCX14DTR2G	MC74VHCT08DTR2G-Q	
NLV74VHCT14ADR2G		MC74LCX14DTR2G	MC74VHCT14ADR2G-Q	
NLV74VHCT14DR2G		MC74LCX14DR2G	MC74VHCT14DR2G-Q	
NLV74VHCT244ADTRG		MC74HC244ADR2G	MC74VHCT244ADTRG-Q	
NLV74VHC1GT50DFT1G		NL27WZ14DBVT1G, MC74VHC1G14DFT1G	MC74VHC1GT50DBVT1G-Q	
NLV74VHCT32ADR2G		MC74LCX14DTR2G	MC74VHCT32ADR2G-Q	
NLV74VHCT541ADTRG		MC74HC244ADR2G	MC74VHCT541ADTRG-Q	
NLVHC86ADR2G		MC74LCX14DR2G	MC74HC86ADR2G-Q	
NLV74VHCU04DTR2G		MC74LCX14DTR2G	MC74VHCU04DTR2G-Q	
NLV7SZ19DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL7SZ19DFT2G-Q	
NLVHCT125ADR2G		MC74LCX14DTR2G	MC74HCT125ADR2G-Q	
NLVHCT4851ADR2G		NLVHC4851ADR2G	MC74HCT4851ADR2G-Q	
NLVHCT244ADR2G		MC74HC244ADR2G	MC74HCT244ADR2G-Q	
NLVHCT245ADR2G		MC74HC244ADR2G	MC74HCT245ADR2G-Q	
NLVHCT366ADR2G		NLV74HC595ADR2G	MC74HCT366ADR2G-Q	

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NLVPCA9535EDTR2G		TBD	NLA9535DTR2G-Q	
NLVLCX125DTR2G		MC74LCX14DTR2G	MC74LCX125DTR2G-Q	
NLVLVX4052DTR2G		MC74LVX4051DTR2G	MC74LVX4052DTR2G-Q	
NLVLVX4245DTR2G		TBD	MC74LVX4245DTR2G-Q	
NLVS1T244MUTBG		TBD	NL3V1T244MU2TBG	
NLVPCA9535EMTTXG		TBD	NLA9535MTTXG-Q	
NLVS1T34DFT2G		TBD	NL3V1T34DFT2G-Q	
NLVSX4373MUTAG		TBD	NL5X4002MUTAG-Q	
NLVS2T244DMR2G		TBD	NL3V2T244DMR2G	
NLVSX4373DR2G		TBD	NL5X4402DR2G-Q	
NLVVHC1G00DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G00DFT1G-Q	
NLVSX5014MUTAG		TBD	NL3X5004MU2TAG-Q	
NLVVHC1G00DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G00DFT2G-Q	
NLVU1GT125AMUTCG		NL17SZ08MU1TCG,NL27WZ17MU1TCG	MC74VHC1GT125MU1TCG-Q	
NLVVHC1G02DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G02DFT1G-Q	
NLVVHC1G03DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G03DFT1G-Q	
NLVVHC1G02DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G02DFT2G-Q	
NLVVHC1G04DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G04DFT2G-Q	
NLVVHC1G04DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G04DFT1G-Q	
NLVVHC1G07DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G07DFT2G-Q	
NLVLVX8053DTR2G		MC74LVX4051DTR2G	MC74LVX8053DTR2G-Q	
NLVHCT541ADWR2G		MC74HC244ADWR2G	MC74HCT541ADWR2G-Q	
NLVHCT541ADTR2G		MC74HC244ADTR2G	MC74HCT541ADTR2G-Q	
NLVHCT374ADTR2G		MC74HC244ADTR2G	MC74HCT374ADTR2G-Q	
NLVHCT14ADR2G		MC74LCX14DR2G	MC74HCT14ADR2G-Q	
NLVHCT08ADTR2G		MC74LCX14DTR2G	MC74HCT08ADTR2G-Q	
NLVHC32ADTR2G		MC74LCX14DTR2G	MC74HC32ADTR2G-Q	
NLVHC1G04DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G04DFT1G-Q	
NLVHC165ADR2G		MC74HC595ADR2G	MC74HC165ADR2G-Q	
NLVHC125ADTR2G		MC74LCX14DTR2G	MC74HC125ADTR2G-Q	
NLVACT541DWR2G		MC74HC244ADWR2G	MC74ACT541DWR2G-Q	
NLVACT14DR2G		MC74LCX14DR2G	MC74ACT14DR2G-Q	
NLV74VHCT00ADTR2G		MC74LCX14DTR2G	MC74VHCT00ADTR2G-Q	
NLVVHC1G07DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G07DFT1G-Q	
NLV74VHC595DTR2G		NLV74HC595ADTR2G	MC74VHC595DTR2G-Q	
NLVVHC1G08DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G08DFT1G-Q	
NLV74VHC50DTR2G		MC74LCX14DTR2G	MC74VHC50DTR2G-Q	
NLVVHC1G08DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G08DFT2G-Q	
NLV74VHC4066DTRG		TBD	MC74VHC4066DTR2G-Q	
NLVVHC1G09DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G09DFT1G-Q	
NLV74VHC4066DR2G		TBD	MC74VHC4066DR2G-Q	
NLV74VHC4051DR2G		TBD	MC74VHC4051DR2G-Q	
NLVVHC1G125DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G125DFT1G-Q	
NLVVHC1G125DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G125DFT2G-Q	

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NLVVHC1G09DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G09DFT2G-Q	
NLVVHC1G126DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G126DFT2G-Q	
NLVVHC1G126DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G126DFT1G-Q	
NLV74VHC126DR2G		MC74LCX14DR2G	MC74VHC126DR2G-Q	
NLV74LVX8051DTR2G		MC74LVX4051DTR2G	MC74LVX8051DTR2G-Q	
NLVVHC1G132DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74VHC1G132DFT1G-Q	
NLV74LVX8051DR2G		MC74LVX4051DR2G	MC74LVX8051DR2G-Q	
NLV74LVX573DTR2G		MC74HC244ADTR2G, NLV74HC244ADTR2G	MC74LVX573DTR2G-Q	
NLV74LVX08DTR2G		MC74LCX14DTR2G	MC74LVX08DTR2G-Q	
NLV74LCX373DTR2G		MC74HC244ADTR2G	MC74LCX373DTR2G-Q	
NLV74LCX32DTR2G		MC74LCX14DTR2G	MC74LCX32DTR2G-Q	
NLV74LCX138DR2G		MC74HC595ADR2G	MC74LCX138DR2G-Q	
NLV74HCT574ADTRG		MC74HC244ADTR2G	MC74HCT574ADTRG-Q	
NLV74HCT573ADWRG		MC74HC244ADWR2G	MC74HCT573ADWRG-Q	
NLV74HCT541ADTRG		MC74HC244ADTR2G	MC74HCT541ADTRG-Q	
NLV74HCT366ADTRG		NLV74HC595ADR2G	MC74HCT366ADTRG-Q	
NLV74HCT4851ADRG		MC74HC4851ADR2G	MC74HCT4851ADRG-Q	
NLV74HCT4051ADTR2G		TBD	MC74HCT4051ADTR2G-Q	
NLV74HCT132ADR2G		MC74LCX14DR2G	MC74HCT132ADR2G-Q	
NLV74AC00DR2G		MC74LCX14DR2G	MC74AC00DR2G-Q	
NLV74HC574ADTR2G		MC74HC244ADTR2G	MC74HC574ADTR2G-Q	
NLV74HC4316ADR2G		TBD	MC74HC4316ADR2G-Q	
NLV74HC4053ADWRG		TBD	MC74HC4053ADWR2G-Q	
NLV7SZ57DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL7SZ57DFT2G-Q	
NLV74HC393ADR2G		MC74HC595ADR2G	MC74HC393ADR2G-Q	
NLV74HC390ADR2G		MC74HC595ADR2G	MC74HC390ADR2G-Q	
NLV74HC374ADTR2G		MC74HC244ADTR2G	MC74HC374ADTR2G-Q	
NLV7SZ58DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL7SZ58DFT2G-Q	
NLV74HC273ADTR2G		MC74HC244ADTR2G	MC74HC273ADTR2G-Q	
NLV74HC259ADTR2G		NLV74HC595ADR2G	MC74HC259ADTR2G-Q	
NLV74HC245ADTR2G		MC74HC244ADTR2G	MC74HC245ADTR2G-Q	
NLV74HC238ADR2G		MC74HC595ADR2G	MC74HC238ADR2G-Q	
NLV74HC174ADR2G		MC74HC595ADR2G	MC74HC174ADR2G-Q	
NLV74HC139ADR2G		MC74HC595ADR2G	MC74HC139ADR2G-Q	
NLV74ACT244DWR2G		MC74HC244ADWR2G	MC74ACT244DWR2G-Q	
NLV74ACT139DR2G		MC74HC595ADR2G	MC74ACT139DR2G-Q	
NLV74ACT138DR2G		MC74HC595ADR2G	MC74ACT138DR2G-Q	
NLV7SZ97DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	NL7SZ97DFT2G-Q	
NLV74ACT02DR2G		MC74LCX14DR2G	MC74ACT02DR2G-Q	
NLVHC1G02DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G02DFT2G-Q	
NLV9306USG		TBD	NLVA9306USG	
NLVHC1G08DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G08DFT2G-Q	
NLVHC1G08DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G08DFT1G-Q	
NLVHC1G32DFT2G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G32DFT2G-Q	
NLVHC1G14DFT1G		NL27WZ14DFT2G, MC74VHC1G14DFT1G	MC74HC1G14DFT1G-Q	
NLVHC259ADR2G		MC74HC595ADR2G	MC74HC259ADR2G-Q	
NLVHC4052ADTR2G		TBD	MC74HC4052ADTR2G-Q	

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NLVHC4051ADTR2G		TBD	MC74HC4051ADTR2G-Q	
NLVHC4851ADR2G		MC74HC4851ADR2G, NLV74HC4851ADR2G	MC74HC4851ADR2G-Q	
NLVHC4060ADTR2G		TBD	MC74HC4060ADTR2G-Q	
PCA9654EDTR2G		TBD	NLA9554DTR2G	
NLVHC4851ADTR2G		NLVHC4851ADTR2G	MC74HC4851ADTR2G-Q	
PCA9654EDR2G		TBD	NLA9554DR2G	
NLVVHC4053DTR2G		TBD	MC74VHC4053DTR2G-Q	
NLVX2G16AMUTCG		NL17SZ08MU1TCG,NL27WZ17MU1TCG	NL27WZ16MU1TCG-Q	
NLVVHC4052DTR2G		TBD	MC74VHC4052DTR2G-Q	