



Title of Change:	Former Fairchild TinyLogic® MicroPak and MicroPak 2 6lds Die and Back End Material Change, Assembly and Test Transfer and Datasheet Change	
Proposed first ship date:	16 April 2019	
Contact information:	Contact your local ON Semiconductor Sales Office or <logic.fpcn@onsemi.com>	
Samples:	Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com> Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change.	
Additional Reliability Data:	Contact your local ON Semiconductor 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. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact <PCN.Support@onsemi.com>	
Change Part Identification:	Affected product will be marked with new plant code.	
Change Category:	<input checked="" type="checkbox"/> Wafer Fab Change <input checked="" type="checkbox"/> Assembly Change <input checked="" type="checkbox"/> Test Change <input type="checkbox"/> Other _____	
Change Sub-Category(s):	<input type="checkbox"/> Manufacturing Site Addition <input checked="" type="checkbox"/> Material Change <input checked="" type="checkbox"/> Datasheet/Product Doc change <input checked="" type="checkbox"/> Manufacturing Site Transfer <input type="checkbox"/> Product specific change <input checked="" type="checkbox"/> Shipping/Packaging/Marking <input checked="" type="checkbox"/> Manufacturing Process Change <input type="checkbox"/> Other: _____	
Sites Affected:	ON Semiconductor Sites: ON S. Portland, Maine	External Foundry/Subcon Sites: Subcon Thailand External Foundry Japan



Description and Purpose:

Qualify new die source for Former Fairchild TinyLogic® and transfer to a new subcon site to increase capacity.

MicroPak 6lds

Material to be changed	Before Change (Existing flow)		After Change (New flow)
Assy Site	Subcon Thailand	Subcon Thailand	Subcon Thailand
Wire	Au	Au	PCC
Lead frame	LF UDFN 6L C7025 Cu COL 1.45X1.0 ETCHED UPPF	LF UDFN 6L C7025 1.45X1MM ETCHED PPF	LF PPF+RT-UPG; MicroPak 6L 1.45x1
Mold Compound	MC CEL9220HF13H HF	SUMITOMO G770HCD	MOLDING COMPOUND; G700LTD
Die Attach	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC	NON-CONDUCTIVE DIE ATTACH FILM; HR-5104
Die Source	On South Portland	On South Portland	Foundry Japan

MicroPak 2 6lds

Material to be changed	Before Change (Existing flow)		After Change (New flow)
Assy Site	Subcon Thailand	Subcon Thailand	Subcon Thailand
Wire	Au	Au	PCC
Lead frame	LF UDFN 6L A194 COL 1.0X1.0 ETCHED PPF	LF UDFN 6L C7025 Cu 1X1MM ETCHED PPF	LF PPF+RT-UPG; MicroPak2 6L 1x1
Mold Compound	MC CEL9220HF13H HF	SUMITOMO G770HCD	MOLDING COMPOUND; G700LTD
Die Attach	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC	NON-CONDUCTIVE DIE ATTACH FILM; HR-5104
Die Source	On South Portland	On South Portland	Foundry Japan

	From	To
Product marking change	<p><u>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</u></p> <p>Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min)</p> <p>1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K)</p> <p>2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A)</p> <p>Existing Plant Code is H and G</p>	<p><u>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</u></p> <p>Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min)</p> <p>1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K)</p> <p>2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A)</p> <p>New Plant Code is S</p>

Datasheet change: The original datasheet will be left active on the www.onsemi.com customer web site for comparison purposes until the FPCN expires. The new datasheet will become visible on the web site on that FPCN expiration.”

NC7S Family

Existing datasheet

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC}) -0.5V to +7.0V
DC Input Diode Current (I_{IK})

Recommended Operating Conditions (Note 2)

Supply Voltage (V_{CC}) 2.0V to 6.0V

New Datasheet

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC}) -0.5V to +6.5V
DC Input Diode Current (I_{IK})

Recommended Operating Conditions (Note 2)

Supply Voltage (V_{CC}) 2.0V to 6.0V

DC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A = +25°C			T _A = -40°C to +85°C		Units	Conditions
			Min	Typ	Max	Min	Max		
V _P	Positive Threshold Voltage	2.0	1.0	1.29	1.5	1.0	1.6	V	
		3.0	1.5	1.90	2.2	1.5	2.2		
		4.5	2.3	2.73	3.15	2.3	3.15		
		6.0	3.0	3.56	4.2	3.0	4.2		
V _N	Negative Threshold Voltage	2.0	0.3	0.70	0.9	0.3	0.9	V	
		3.0	0.6	1.05	1.35	0.6	1.35		
		4.5	1.13	1.66	2.0	1.13	2.0		
		6.0	1.5	2.24	2.6	1.5	2.6		

DC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A = +25°C			T _A = -40°C to +85°C		Units	Conditions
			Min	Typ	Max	Min	Max		
V _P	Positive Threshold Voltage	2.0	1.29	1.5	1.6	V			
		3.0	1.90	2.2	2.2				
		4.5	2.73	3.15	3.15				
		6.0	3.56	4.2	4.2				
V _N	Negative Threshold Voltage	2.0	0.3	0.70	0.9	V			
		3.0	0.6	1.05	1.35				
		4.5	1.13	1.66	2.0				
		6.0	1.5	2.24	2.6				

Input Rise and Fall Time (t_r, t_f)

V_{CC} @ 2.0V 0 to 1000 ns
V_{CC} @ 3.0V 0 to 750 ns
V_{CC} @ 4.5V 0 to 500 ns
V_{CC} @ 6.0V 0 to 400 ns

Input Rise and Fall Time (t_r, t_f)

V_{CC} @ 2.0V 0 to 20 ns
V_{CC} @ 3.0V 0 to 20 ns
V_{CC} @ 4.5V 0 to 10 ns
V_{CC} @ 6.0V 0 to 5 ns

NC7SZ Family

Existing datasheet

Features

- Ultra-High Speed: t_{pd} 3.2ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: ±24mA at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCMX when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Transition
- Proprietary Noise/EMI Reduction Circuitry
- Ultra-Small MicroPak™ Packages
- Space-Saving SC70 Package

Description

The XXXXXX is a dual inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) Series of TinyLogic. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 7V independent of V_{CC} operating voltage. Schmitt trigger inputs achieve typically 1V hysteresis between the positive and negative-going input threshold voltage at 5V.

New

Features

- Ultra-High Speed: t_{pd} 3.2ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: ±24mA at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCMX when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Transition
- Proprietary Noise/EMI Reduction Circuitry

Description

The XXXXXX is a dual inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) Series of TinyLogic. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage. Schmitt trigger inputs achieve typically 1V hysteresis between the positive and negative-going input threshold voltage at 5V.

Symbol	Parameter	Min.	Max.	Unit
V _{CC}	Supply Voltage	-0.5	7.0	V
V _{IK}	DC Input Voltage	-0.5	7.0	V
V _{OUT}	DC Output Voltage	-0.5	7.0	V

Symbol	Parameter	Min.	Max.	Unit
V _{CC}	Supply Voltage	-0.5	6.5	V
V _{IK}	DC Input Voltage	-0.5	6.5	V
V _{OUT}	DC Output Voltage	-0.5	6.5	V

I _{IK}	Input Leakage Current	0 to 5.5	0 ≤ V _{IK} ≤ 5.5 V	±1	±10	µA
-----------------	-----------------------	----------	-----------------------------	----	-----	----

I _{IK}	Input Leakage Current	1.65 to 5.5	0 ≤ V _{IK} ≤ 5.5 V	±1	±10	µA
-----------------	-----------------------	-------------	-----------------------------	----	-----	----



Existing datasheet

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units
				Min.	Typ.	Max.	Min.	Max.		
V _P	Positive Threshold Voltage	1.65		0.60	1.00	1.40	0.60	1.40		
		1.80		0.70	1.10	1.50	0.70	1.50		
		2.30		1.00	1.40	1.80	1.00	1.80		
		3.00		1.30	1.75	2.20	1.30	2.20		
		4.50		1.90	2.45	3.10	1.90	3.10		
		5.50		2.20	2.90	3.60	2.20	3.60		
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.80	0.20	0.80		
		1.80		0.25	0.55	0.90	0.25	0.90		
		2.30		0.40	0.75	1.15	0.40	1.15		
		3.00		0.60	1.00	1.50	0.60	1.50		
		4.50		1.00	1.43	2.00	1.00	2.00		
		5.50		1.20	1.70	2.30	1.20	2.30		

New

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units
				Min.	Typ.	Max.	Min.	Max.		
V _P	Positive Threshold Voltage	1.65			1.00	1.40		1.40		
		1.80			1.10	1.50		1.50		
		2.30			1.40	1.80		1.80		
		3.00			1.75	2.20		2.20		
		4.50			2.45	3.10		3.10		
		5.50			2.90	3.60		3.60		
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.80	0.20	0.80		
		1.80		0.25	0.55	0.90	0.25	0.90		
		2.30		0.40	0.75	1.15	0.40	1.15		
		3.00		0.60	1.00	1.50	0.60	1.50		
		4.50		1.00	1.43	2.00	1.00	2.00		
		5.50		1.20	1.70	2.30	1.20	2.30		

Symbol	Parameter	V _{CC}	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Max.			
t _{PLH} , t _{PLL}	Propagation Delay	1.65		2.0	6.4	13.2	2.0	13.8	ns	Figure 4 Figure 6	
		1.80	C _L =15 pF, R _D =1 MΩ, S _I =OPEN	2.0	5.3	11.0	2.0	11.5			
		2.50 ±0.20		0.8	3.4	7.5	0.8	8.0			
		3.30 ±0.30		0.5	2.5	5.2	0.5	5.5			
		5.00 ±0.50		0.5	2.1	4.5	0.5	4.8			
		3.30 ±0.30	C _L =50 pF, R _D =500 Ω, S _I =OPEN	1.5	3.2	5.7	1.5	6.0			
t _{ENL} , t _{ENH}	Output Enable Time	1.65	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ENL}	2.0	8.4	15.0	2.0	15.6	ns	Figure 4 Figure 6	
		1.80		2.0	7.0	12.5	2.0	13.0			
		2.50 ±0.20		1.5	4.6	8.5	1.5	9.0			
		3.30 ±0.30	S _I =V _{IN} for t _{ENH}	1.5	3.5	6.2	1.5	6.5			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.8	2.8	5.5	0.8	5.8			
		3.30 ±0.30	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ENL}	2.0	6.5	13.2	2.0	14.5			
t _{ZDL} , t _{ZDH}	Output Disable Time	1.65	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ZDL}	2.0	5.4	11.0	2.0	12.0	ns	Figure 4 Figure 6	
		1.80		2.0	4.5	10.0	2.0	11.0			
		2.50 ±0.20		1.5	3.5	8.0	1.5	8.5			
		3.30 ±0.30	S _I =V _{IN} for t _{ZDH}	1.0	2.8	5.7	1.0	6.0			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.5	2.1	4.7	0.5	5.0			
		3.30 ±0.30	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ZDL}	2.0	6.5	13.2	2.0	14.5			

Symbol	Parameter	V _{CC}	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Max.			
t _{PLH} , t _{PLL}	Propagation Delay	1.65			6.4	13.2		13.8	ns	Figure 4 Figure 6	
		1.80	C _L =15 pF, R _D =1 MΩ, S _I =OPEN	2.0	5.3	11.0	2.0	11.5			
		2.50 ±0.20		0.8	3.4	7.5	0.8	8.0			
		3.30 ±0.30		0.5	2.5	5.2	0.5	5.5			
		5.00 ±0.50		0.5	2.1	4.5	0.5	4.8			
		3.30 ±0.30	C _L =50 pF, R _D =500 Ω, S _I =OPEN	1.5	3.2	5.7	1.5	6.0			
t _{ENL} , t _{ENH}	Output Enable Time	1.65	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ENL}	2.0	8.4	15.0	2.0	15.6	ns	Figure 4 Figure 6	
		1.80		2.0	7.0	12.5	2.0	13.0			
		2.50 ±0.20		1.5	4.6	8.5	1.5	9.0			
		3.30 ±0.30	S _I =V _{IN} for t _{ENH}	1.5	3.5	6.2	1.5	6.5			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.8	2.8	5.5	0.8	5.8			
		3.30 ±0.30	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ENL}	2.0	6.5	13.2	2.0	14.5			
t _{ZDL} , t _{ZDH}	Output Disable Time	1.65	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ZDL}	2.0	5.4	11.0	2.0	12.0	ns	Figure 4 Figure 6	
		1.80		2.0	4.5	10.0	2.0	11.0			
		2.50 ±0.20		1.5	3.5	8.0	1.5	8.5			
		3.30 ±0.30	S _I =V _{IN} for t _{ZDH}	1.0	2.8	5.7	1.0	6.0			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.5	2.1	4.7	0.5	5.0			
		3.30 ±0.30	C _L =50 pF, R _D =500 Ω, R _U =500 Ω, S _I =GND for t _{ZDL}	2.0	6.5	13.2	2.0	14.5			

NC7WZ Family

Existing datasheet

Features

- Ultra-High Speed: t_{PD} 3.7ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: ±24mA at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCX when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Translation
- Proprietary Noise/EMI Reduction Circuitry
- Ultra-Small MicroPak™ Packages
- Space-Saving SOT23 and SC70 Packages

Description

The NC7SZ14 is a single inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) series of TinyLogic®. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 6V independent of V_{CC} operating voltage.

New

Features

- Ultra-High Speed: t_{PD} 3.7ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: ±24mA at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCX when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Translation
- Proprietary Noise/EMI Reduction Circuitry

Description

The NC7SZ14 is a single inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) series of TinyLogic®. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage.

Symbol	Parameter	Min.	Max.	Unit
V _{CC}	Supply Voltage	-0.5	6.0	V
V _{IN}	DC Input Voltage	-0.5	6.0	V
V _{OUT}	DC Output Voltage	-0.5	6.0	V

Symbol	Parameter	Min.	Max.	Unit
V _{CC}	Supply Voltage	-0.5	6.5	V
V _{IN}	DC Input Voltage	-0.5	6.5	V
V _{OUT}	DC Output Voltage	-0.5	6.5	V

I _{IN}	Input Leakage Current	0 to 5.5	0 ≥ V _{IN} ≥ 5.5 V	±1	±10	µA
-----------------	-----------------------	----------	-----------------------------	----	-----	----

I _{IN}	Input Leakage Current	1.65 to 5.5	0 ≥ V _{IN} ≥ 5.5 V	±1	±10	µA
-----------------	-----------------------	-------------	-----------------------------	----	-----	----

Existing datasheet

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =+40 to +85°C		T _A =-40 to +125°C		Units
				Min.	Typ.	Max.	Min.	Max.	Min.	Max.	
V _P	Positive Threshold Voltage	1.65		0.60	1.40	0.60	1.40	0.60	1.40	V	
		1.80		0.70	1.50	0.70	1.50	0.70	1.50		
		2.30		1.00	1.80	1.00	1.80	1.00	1.80		
		3.00		1.30	2.20	1.30	2.20	1.30	2.20		
		4.50		1.90	3.10	1.90	3.10	2.00	3.20		
		5.50		2.20	3.60	2.20	3.60	2.30	3.70		
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.80	0.20	0.80	0.30	V	
		1.80		0.25	0.56	0.90	0.25	0.90	0.35		
		2.30		0.40	0.75	1.15	0.40	1.15	0.50		
		3.00		0.60	0.98	1.50	0.60	1.50	0.70		
		4.50		1.00	1.42	2.00	1.00	2.00	1.10		
		5.50		1.20	1.68	2.30	1.20	2.30	1.40		

New

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =+40 to +85°C		T _A =-40 to +125°C		Units
				Min.	Typ.	Max.	Min.	Max.	Min.	Max.	
V _P	Positive Threshold Voltage	1.65				1.40		1.40		1.40	V
		1.80				1.50		1.50		1.50	
		2.30				1.80		1.80		1.80	
		3.00				2.20		2.20		2.20	
		4.50				3.10		3.10		3.20	
		5.50				3.60		3.60		3.70	
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.20		0.30		V	
		1.80		0.25	0.56	0.25		0.35			
		2.30		0.40	0.75	0.40		0.50			
		3.00		0.60	0.98	0.60		0.70			
		4.50		1.00	1.42	1.00		1.10			
		5.50		1.20	1.68	1.20		1.40			

Symbol	Parameter	V _{CC} (V)	T _A =+25°C			T _A =-40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PLH}	Propagation Delay A _n to Y _n	1.8 ± 0.15	2.0	12.0	2.0	13.0	ns	C _L = 15 pF R _D = 1 MΩ S _I = Open	Figures 1-3	
2.5 ± 0.2		1.0	7.5	1.0	8.0					
3.3 ± 0.3		0.8	5.2	0.8	5.5					
5.0 ± 0.5		0.5	4.3	0.5	4.8					
t _{PLL}	Propagation Delay A _n to Y _n	3.3 ± 0.3	1.2	5.7	1.2	6.0	ns	C _L = 90 pF R _D = 500Ω S _I = Open	Figures 1-3	
5.0 ± 0.5		0.8	5.0	0.8	5.5					
t _{OSLH}	Output to Output Slew (Note 5)	3.3 ± 0.3		1.0		1.0	ns	C _L = 90 pF R _D = 500Ω S _I = Open	Figures 1-3	
5.0 ± 0.5			0.8		0.8					
t _{PLZ}	Output Enable Time	1.8 ± 0.15	3.0	14.0	3.0	15.0	ns	C _L = 90 pF R _D , R _U = 500 Ω S _I = GND for t _{PLZ} S _I = V _I for t _{PLZL} V _I = 2 × V _{CC}	Figures 1-3	
2.5 ± 0.2		1.8	8.5	1.8	9.0					
3.3 ± 0.3		1.2	6.2	1.2	6.5					
5.0 ± 0.5		0.8	5.5	0.8	5.8					
t _{PLZL}	Output Disable Time	1.8 ± 0.15	2.5	12.0	2.5	13.0	ns	C _L = 90 pF R _D , R _U = 500 Ω S _I = GND for t _{PLZL} S _I = V _I for t _{PLZL} V _I = 2 × V _{CC}	Figures 1-3	
2.5 ± 0.2		1.5	8.0	1.5	8.5					
3.3 ± 0.3		0.8	5.7	0.8	6.0					
5.0 ± 0.5		0.5	4.7	0.5	5.0					

Symbol	Parameter	V _{CC} (V)	T _A =+25°C			T _A =-40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PLH}	Propagation Delay A _n to Y _n	1.8 ± 0.15			12.0	13.0	ns	C _L = 15 pF R _D = 1 MΩ S _I = Open	Figures 1-3	
2.5 ± 0.2				7.5	8.0					
3.3 ± 0.3				5.2	5.5					
5.0 ± 0.5				4.3	4.8					
t _{PLL}	Propagation Delay A _n to Y _n	3.3 ± 0.3		5.7		6.0	ns	C _L = 90 pF R _D = 500Ω S _I = Open	Figures 1-3	
5.0 ± 0.5			5.0		5.3					
t _{OSLH}	Output to Output Slew (Note 5)	3.3 ± 0.3		1.0		1.0	ns	C _L = 90 pF R _D = 500Ω S _I = Open	Figures 1-3	
5.0 ± 0.5			0.8		0.8					
t _{PLZ}	Output Enable Time	1.8 ± 0.15		14.0		15.0	ns	C _L = 90 pF R _D , R _U = 500 Ω S _I = GND for t _{PLZ} S _I = V _I for t _{PLZL} V _I = 2 × V _{CC}	Figures 1-3	
2.5 ± 0.2			8.5		9.0					
3.3 ± 0.3			6.2		6.5					
5.0 ± 0.5			5.5		5.8					
t _{PLZL}	Output Disable Time	1.8 ± 0.15		12.0		13.0	ns	C _L = 90 pF R _D , R _U = 500 Ω S _I = GND for t _{PLZL} S _I = V _I for t _{PLZL} V _I = 2 × V _{CC}	Figures 1-3	
2.5 ± 0.2			8.0		8.5					
3.3 ± 0.3			5.7		6.0					
5.0 ± 0.5			4.7		5.0					

Reliability Data Summary:

DEVICE: NC7S14L6X
 RMS: W45204
 PACKAGESIP-6 (MicroPAK 1.45 x1.00mm 6L)

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C at max rated Vcc	1008 hours	0/80
HTSL	JESD22-A103	Ta= 150°C	2016 hours	0/80
PC	J-STD-020 JESD-A113	MSL 1@260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	1000 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, Vcc bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/10



DEVICE: NC7SZ18FHX
RMS: W44998
PACKAGEUDFN-6 (MicroPAK2 1.00x1.00mm 6L)

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	0/80
HTSL	JESD22-A103	Ta= 150°C	2016 hours	0/80
PC	J-STD-020 JESD-A113	MSL 1@260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	1000 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, Vcc bias	192 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/10

DEVICE: NC7SZ374L6X
RMS: W45056
PACKAGESIP-6 (MicroPAK 1.45 x1.00mm 6L)

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	0/80
HTSL	JESD22-A103	Ta= 150°C	2016 hours	0/80
PC	J-STD-020 JESD-A113	MSL 1@260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	1000 cycles	0/240
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, Vcc bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/10

Electrical Characteristic Summary:

Electrical characteristics Available upon request.

**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](#).

Part Number	Qualification Vehicle
NC7WZ17L6X	NC7S14L6X
NC7SZ125L6X	NC7S14L6X
NC7SZ00L6X	NC7S14L6X
NC7WZ07L6X	NC7S14L6X
NC7SZ04L6X	NC7S14L6X
NC7WZ04L6X	NC7S14L6X
NC7WZ14L6X	NC7S14L6X
NC7SZ11L6X	NC7SZ374L6X
NC7SZ57L6X	NC7SZ374L6X
NC7S08L6X	NC7S14L6X
NC7WZ16L6X	NC7S14L6X
NC7SZ08L6X	NC7S14L6X
NC7SZ58L6X	NC7SZ374L6X
NC7SZ32L6X	NC7S14L6X
NC7SZ126L6X	NC7S14L6X
NC7SZ175L6X	NC7SZ374L6X
NC7SZ86L6X	NC7S14L6X
NC7SZ157L6X	NC7SZ374L6X
NC7SZ332L6X	NC7SZ374L6X
NC7S04L6X	NC7S14L6X
NC7SZ02L6X	NC7S14L6X
NC7SZ14L6X	NC7S14L6X
NC7SU04L6X	NC7S14L6X
NC7SZ19L6X	NC7SZ18FHX
NC7SZ373L6X	NC7SZ374L6X
NC7SZ05L6X	NC7S14L6X
NC7WZU04L6X	NC7S14L6X
NC7S00L6X	NC7S14L6X
NC7SZ27L6X	NC7SZ374L6X
NC7SZ18L6X	NC7SZ18FHX
NC7SZ10L6X	NC7SZ374L6X



NC7ST08L6X	NC7S14L6X
NC7SZU04L6X	NC7S14L6X
NC7S86L6X	NC7S14L6X
NC7ST86L6X	NC7S14L6X
NC7ST02L6X	NC7S14L6X
NC7S02L6X	NC7S14L6X
NC7SZ38L6X	NC7S14L6X
NC7SZ386L6X	NC7SZ374L6X
NC7ST32L6X	NC7S14L6X
NC7ST00L6X	NC7S14L6X
NC7S32L6X	NC7S14L6X
NC7SZ374L6X	NC7SZ374L6X
NC7S14L6X	NC7S14L6X
NC7WZ17FHX	NC7S14L6X
NC7SZ157FHX	NC7SZ374L6X
NC7SZ32FHX	NC7S14L6X
NC7SZ08FHX	NC7S14L6X
NC7WZ07FHX	NC7S14L6X
NC7WZ04FHX	NC7S14L6X
NC7SZ126FHX	NC7S14L6X
NC7SZ57FHX	NC7SZ374L6X
NC7SZ125FHX	NC7S14L6X
NC7SZ05FHX	NC7S14L6X
NC7SZ58FHX	NC7SZ374L6X
NC7SZ04FHX	NC7S14L6X
NC7SZ14FHX	NC7S14L6X
NC7SZ00FHX	NC7S14L6X
NC7WZ14FHX	NC7S14L6X
NC7SZU04FHX	NC7S14L6X
NC7WZ16FHX	NC7S14L6X
NC7SZ02FHX	NC7S14L6X
NC7SZ19FHX	NC7SZ18FHX
NC7SZ38FHX	NC7S14L6X
NC7SZ18FHX	NC7SZ18FHX
NC7SZ86FHX	NC7S14L6X

Japanese translation of the notification starts here.
通知の日本語訳はここから始まります。

Note: The Japanese version is for reference only. In case of any differences between the English and Japanese version, the English version shall control.

注：日本語版は参照用です。英語版と日本語版の違いがある場合は、英語版が優先されます。



最終製品 / プロセス変更通知

文書番号# : FPCN22175X

発行日 : 9 January 2019

変更件名:	旧 Fairchild TinyLogic® MicroPak および MicroPak 2 6lds 製品のダイおよびバックエンド材料の変更、組み立て・テスト拠点の移管、およびデータシートの変更	
初回出荷予定日:	16 April 2019	
連絡先情報:	現地のオン・セミコンダクター営業所または <logic.fpcn@onsemi.co>までお問い合わせください。	
サンプル:	現地のオン・セミコンダクター営業所または <PCN.samples@onsemi.com>までお問い合わせください。サンプルは、この変更の初回通知、初回 PCN、または最終 PCN の日付から 30 日以内に要求してください。	
その他の信頼性データ:	現地のオン・セミコンダクター営業所または <ChangKit.Mok@onsemi.com> までお問い合わせください。	
通知種別:	これは、お客様宛の最終製品 / プロセス変更通知 (FPCN) です。FPCN は、変更実施の 90 日前に発行されます。オン・セミコンダクターは、この通知の送付から 30 日以内に書面による問い合わせがない限り、この変更が承諾されたものとみなします。お問い合わせは、<PCN.Support@onsemi.com> 宛てにお願いします。	
変更部品の識別:	影響を受ける製品には新しい工場コードが捺印されます。	
変更カテゴリ:	<input checked="" type="checkbox"/> ウェハファブの変更 <input checked="" type="checkbox"/> アセンブリの変更 <input checked="" type="checkbox"/> 試験の変更 <input type="checkbox"/> その他 _____	
変更サブカテゴリ:	<input type="checkbox"/> 製造拠点の追加 <input checked="" type="checkbox"/> 材料の変更 <input checked="" type="checkbox"/> データシート/製品資料の変更 <input checked="" type="checkbox"/> 製造拠点の移転 <input type="checkbox"/> 製品仕様の変更 <input checked="" type="checkbox"/> 出荷/パッケージング/表記 <input checked="" type="checkbox"/> 製造プロセスの変更 <input type="checkbox"/> その他 : _____	
影響を受ける拠点:	オン・セミコンダクター拠点: ON S. Portland, Maine	外部製造工場 / 下請業者拠点: Subcon Thailand External Foundry Japan)



説明および目的:

旧 Fairchild TinyLogic® 製品の生産能力を増強するため、新たなダイソースとサブコンを認定します。

MicroPak 6lds

変更される材料	変更前 (既存のフロー)	変更後 (新規フロー)
テスト拠点	Subcon Thailand	Subcon Thailand
ワイヤ	Au	Au
リードフレーム	LF UDFN 6L C7025 Cu COL 1.45X1.0 ETCHED UPPF	LF UDFN 6L C7025 1.45X1MM ETCHED PPF
モールド・コンパウンド	MC CEL9220HF13H HF	SUMITOMO G770HCD
ダイ接着剤	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC
ダイソース	On South Portland	On South Portland

MicroPak 2 6lds

Material to be changed	変更後 (既存フロー)	変更後 (新規フロー)
テスト拠点	Subcon Thailand	Subcon Thailand
ワイヤ	Au	Au
リードフレーム	LF UDFN 6L A194 COL 1.0X1.0 ETCHED PPF	LF UDFN 6L C7025 Cu 1X1MM ETCHED PPF
モールド・コンパウンド	MC CEL9220HF13H HF	SUMITOMO G770HCD
ダイ接着剤	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC
ダイソース	On South Portland	On South Portland

	変更前	変更後
製品表示変更	<p>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</p> <p>Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min)</p> <p>1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K)</p> <p>2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A)</p> <p>既存の工場コードは H および G です</p>	<p>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</p> <p>Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min)</p> <p>1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K)</p> <p>2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A)</p> <p>新しい工場コードは S です</p>

データシートの変更: 元のデータシートは、本 FPCN が実施されるまで、比較目的でお客様向け Web サイト(www.onsemi.com)に掲載されます。新たなデータシートは、本 FPCN が実施された時点で Web サイト上での閲覧が可能になります。

NC7S ファミリー

Existing datasheet

Absolute Maximum Ratings^(Note 1)

Supply Voltage (V_{CC}) -0.5V to +7.0V
DC Input Diode Current (I_{IK})

Recommended Operating Conditions^(Note 2)

Supply Voltage (V_{CC}) 2.0V to 6.0V

New Datasheet

Absolute Maximum Ratings^(Note 1)

Supply Voltage (V_{CC}) -0.5V to +6.5V
DC Input Diode Current (I_{IK})

Recommended Operating Conditions^(Note 2)

Supply Voltage (V_{CC}) 2.0V to 6.0V

DC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	$T_A = +25^\circ\text{C}$			$T_A = -40^\circ\text{C to } +85^\circ\text{C}$		Units	Conditions
			Min	Typ	Max	Min	Max		
V_P	Positive Threshold Voltage	2.0	1.0	1.29	1.5	1.0	1.6	V	
		3.0	1.5	1.90	2.2	1.5	2.2		
		4.5	2.3	2.73	3.15	2.3	3.15		
		6.0	3.0	3.56	4.2	3.0	4.2		
		6.0	1.5	2.24	2.6	1.5	2.6		
V_N	Negative Threshold Voltage	2.0	0.3	0.70	0.9	0.3	0.9	V	
		3.0	0.6	1.05	1.35	0.6	1.35		
		4.5	1.13	1.66	2.0	1.13	2.0		
		6.0	1.5	2.24	2.6	1.5	2.6		
		6.0	1.5	2.24	2.6	1.5	2.6		

DC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	$T_A = +25^\circ\text{C}$			$T_A = -40^\circ\text{C to } +85^\circ\text{C}$		Units	Conditions
			Min	Typ	Max	Min	Max		
V_P	Positive Threshold Voltage	2.0	1.29	1.5	1.6	V			
		3.0	1.90	2.2	2.2				
		4.5	2.73	3.15	3.15				
		6.0	3.56	4.2	4.2				
		6.0	1.5	2.24	2.6				
V_N	Negative Threshold Voltage	2.0	0.3	0.70	0.9	V			
		3.0	0.6	1.05	1.35				
		4.5	1.13	1.66	2.0				
		6.0	1.5	2.24	2.6				
		6.0	1.5	2.24	2.6				

Input Rise and Fall Time (t_r, t_f)

V_{CC} @ 2.0V 0 to 1000 ns
 V_{CC} @ 3.0V 0 to 750 ns
 V_{CC} @ 4.5V 0 to 500 ns
 V_{CC} @ 6.0V 0 to 400 ns

Input Rise and Fall Time (t_r, t_f)

V_{CC} @ 2.0V 0 to 20 ns
 V_{CC} @ 3.0V 0 to 20 ns
 V_{CC} @ 4.5V 0 to 10 ns
 V_{CC} @ 6.0V 0 to 5 ns

NC7SZ Family

Existing datasheet

Features

- Ultra-High Speed: t_{tr} 3.2ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: $\pm 24\text{mA}$ at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCM when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Transition
- Proprietary Noise/EMI Reduction Circuitry
- Ultra-Small MicroPak™ Packages
- Space-Saving SC70 Package

Description

The XXXXXX is a dual inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) Series of TinyLogic. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 7V independent of V_{CC} operating voltage. Schmitt trigger inputs achieve typically 1V hysteresis between the positive-and negative-going input threshold voltage at 5V.

New

Features

- Ultra-High Speed: t_{tr} 3.2ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: $\pm 24\text{mA}$ at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCM when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Transition
- Proprietary Noise/EMI Reduction Circuitry

Description

The XXXXXX is a dual inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) Series of TinyLogic. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage. Schmitt trigger inputs achieve typically 1V hysteresis between the positive-and negative-going input threshold voltage at 5V.

Symbol	Parameter	Min.	Max.	Unit
V_{CC}	Supply Voltage	-0.5	7.0	V
V_{IN}	DC Input Voltage	-0.5	7.0	V
V_{OUT}	DC Output Voltage	-0.5	7.0	V

Symbol	Parameter	Min.	Max.	Unit
V_{CC}	Supply Voltage	-0.5	6.5	V
V_{IN}	DC Input Voltage	-0.5	6.5	V
V_{OUT}	DC Output Voltage	-0.5	6.5	V

I_{IK}	Input Leakage Current	0 to 5.5	$0 \geq V_{IN} \geq 5.5\text{ V}$		± 1	± 10	μA

I_{IK}	Input Leakage Current	1.65 to 5.5	$0 \geq V_{IN} \geq 5.5\text{ V}$		± 1	± 10	μA



Existing datasheet

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units
				Min.	Typ.	Max.	Min.	Max.		
V _P	Positive Threshold Voltage	1.65		0.60	1.00	1.40	0.60	1.40	V	
		1.80		0.70	1.10	1.50	0.70	1.50		
		2.30		1.00	1.40	1.80	1.00	1.80		
		3.00		1.30	1.75	2.20	1.30	2.20		
		4.50		1.90	2.45	3.10	1.90	3.10		
		5.50		2.20	2.90	3.60	2.20	3.60		
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.80	0.20	0.80	V	
		1.80		0.25	0.55	0.90	0.25	0.90		
		2.30		0.40	0.75	1.15	0.40	1.15		
		3.00		0.60	1.00	1.50	0.60	1.50		
		4.50		1.00	1.43	2.00	1.00	2.00		
		5.50		1.20	1.70	2.30	1.20	2.30		

New

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units
				Min.	Typ.	Max.	Min.	Max.		
V _P	Positive Threshold Voltage	1.65		0.60	1.00	1.40	0.60	1.40	V	
		1.80		0.70	1.10	1.50	0.70	1.50		
		2.30		1.00	1.40	1.80	1.00	1.80		
		3.00		1.30	1.75	2.20	1.30	2.20		
		4.50		1.90	2.45	3.10	1.90	3.10		
		5.50		2.20	2.90	3.60	2.20	3.60		
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.80	0.20	0.80	V	
		1.80		0.25	0.55	0.90	0.25	0.90		
		2.30		0.40	0.75	1.15	0.40	1.15		
		3.00		0.60	1.00	1.50	0.60	1.50		
		4.50		1.00	1.43	2.00	1.00	2.00		
		5.50		1.20	1.70	2.30	1.20	2.30		

Symbol	Parameter	V _{CC}	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Max.			
t _{PLH} , t _{PLL}	Propagation Delay	1.65		2.0	6.4	13.2	2.0	13.8	ns	Figure 4 Figure 6	
		1.80	C _L =15 pF, R _P =1 MΩ, S _I =OPEN	2.0	5.3	11.0	2.0	11.5			
		2.50 ±0.20		0.8	3.4	7.5	0.8	8.0			
		3.30 ±0.30		0.5	2.5	5.2	0.5	5.5			
		5.00 ±0.50		0.5	2.1	4.5	0.5	4.8			
		3.30 ±0.30	C _L =50 pF, R _P =500 Ω, S _I =OPEN	1.5	3.2	5.7	1.5	6.0			
t _{OE} , t _{OEZ}	Output Enable Time	1.65	C _L =50 pF, R _P =500 Ω	2.0	8.4	15.0	2.0	15.6	ns	Figure 4 Figure 6	
		1.80	R _I =500 Ω	2.0	7.0	12.5	2.0	13.0			
		2.50 ±0.20	S _I =GND for t _{OEZ}	1.5	4.6	8.5	1.5	9.0			
		3.30 ±0.30	S _I =V _{IN} for t _{OE}	1.5	3.5	6.2	1.5	6.5			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.8	2.8	5.5	0.8	5.8			
		3.30 ±0.30	C _L =50 pF, R _P =500 Ω	2.0	6.5	13.2	2.0	14.5			
t _{OD} , t _{ODZ}	Output Disable Time	1.65	C _L =50 pF, R _P =500 Ω	2.0	5.4	11.0	2.0	12.0	ns	Figure 4 Figure 6	
		1.80	R _I =500 Ω	2.0	4.7	10.0	2.0	11.0			
		2.50 ±0.20	S _I =GND for t _{ODZ}	1.5	3.5	8.0	1.5	8.5			
		3.30 ±0.30	S _I =V _{IN} for t _{OD}	1.0	2.8	5.7	1.0	6.0			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.5	2.1	4.7	0.5	5.0			
		3.30 ±0.30	C _L =50 pF, R _P =500 Ω	2.0	6.5	13.2	2.0	14.5			

Symbol	Parameter	V _{CC}	Conditions	T _A =+25°C			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Max.			
t _{PLH} , t _{PLL}	Propagation Delay	1.65		2.0	6.4	13.2	2.0	13.8	ns	Figure 4 Figure 6	
		1.80	C _L =15 pF, R _P =1 MΩ, S _I =OPEN	2.0	5.3	11.0	2.0	11.5			
		2.50 ±0.20		0.8	3.4	7.5	0.8	8.0			
		3.30 ±0.30		0.5	2.5	5.2	0.5	5.5			
		5.00 ±0.50		0.5	2.1	4.5	0.5	4.8			
		3.30 ±0.30	C _L =50 pF, R _P =500 Ω, S _I =OPEN	1.5	3.2	5.7	1.5	6.0			
t _{OE} , t _{OEZ}	Output Enable Time	1.65	C _L =50 pF, R _P =500 Ω	2.0	8.4	15.0	2.0	15.6	ns	Figure 4 Figure 6	
		1.80	R _I =500 Ω	2.0	7.0	12.5	2.0	13.0			
		2.50 ±0.20	S _I =GND for t _{OEZ}	1.5	4.6	8.5	1.5	9.0			
		3.30 ±0.30	S _I =V _{IN} for t _{OE}	1.5	3.5	6.2	1.5	6.5			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.8	2.8	5.5	0.8	5.8			
		3.30 ±0.30	C _L =50 pF, R _P =500 Ω	2.0	6.5	13.2	2.0	14.5			
t _{OD} , t _{ODZ}	Output Disable Time	1.65	C _L =50 pF, R _P =500 Ω	2.0	5.4	11.0	2.0	12.0	ns	Figure 4 Figure 6	
		1.80	R _I =500 Ω	2.0	4.7	10.0	2.0	11.0			
		2.50 ±0.20	S _I =GND for t _{ODZ}	1.5	3.5	8.0	1.5	8.5			
		3.30 ±0.30	S _I =V _{IN} for t _{OD}	1.0	2.8	5.7	1.0	6.0			
		5.00 ±0.50	V _{IN} =2·V _{CC}	0.5	2.1	4.7	0.5	5.0			
		3.30 ±0.30	C _L =50 pF, R _P =500 Ω	2.0	6.5	13.2	2.0	14.5			

NC7WZ Family

Existing datasheet

Features

- Ultra-High Speed: t_{PD} 3.7ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: ±24mA at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCX when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Translation
- Proprietary Noise/EMI Reduction Circuitry
- Ultra-Small MicroPak™ Packages
- Space-Saving SOT23 and SC70 Packages

Description

The NC7SZ14 is a single inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) series of TinyLogic®. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 6V independent of V_{CC} operating voltage.

New

Features

- Ultra-High Speed: t_{PD} 3.7ns (Typical) into 50pF at 5V V_{CC}
- High Output Drive: ±24mA at 3V V_{CC}
- Broad V_{CC} Operating Range: 1.65V to 5.5V
- Matches Performance of LCX when Operated at 3.3V V_{CC}
- Power Down High Impedance Inputs/Outputs
- Over-Voltage Tolerance Inputs Facilitate 5V to 3V Translation
- Proprietary Noise/EMI Reduction Circuitry

Description

The NC7SZ14 is a single inverter with Schmitt trigger input from ON Semiconductor's Ultra-High Speed (UHS) series of TinyLogic®. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive while maintaining low static power dissipation over a very broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} range. The inputs and outputs are high-impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage.

Symbol	Parameter	Min.	Max.	Unit
V _{CC}	Supply Voltage	-0.5	6.0	V
V _{IN}	DC Input Voltage	-0.5	6.0	V
V _{OUT}	DC Output Voltage	-0.5	6.0	V

Symbol	Parameter	Min.	Max.	Unit
V _{CC}	Supply Voltage	-0.5	6.5	V
V _{IN}	DC Input Voltage	-0.5	6.5	V
V _{OUT}	DC Output Voltage	-0.5	6.5	V

I _{IN}	Input Leakage Current	0 to 5.5	0 ≤ V _{IN} ≤ 5.5 V	±1	±10	µA
-----------------	-----------------------	----------	-----------------------------	----	-----	----

I _{IN}	Input Leakage Current	1.65 to 5.5	0 ≤ V _{IN} ≤ 5.5 V	±1	±10	µA
-----------------	-----------------------	-------------	-----------------------------	----	-----	----



Existing datasheet

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =-40 to +85°C		T _A =-40 to +125°C		Units
				Min.	Typ.	Max.	Min.	Max.	Min.	Max.	
V _P	Positive Threshold Voltage	1.65		0.60	1.40	0.60	1.40	0.60	1.40	V	
		1.80		0.70	1.50	0.70	1.50	0.70	1.50		
		2.30		1.00	1.80	1.00	1.80	1.00	1.80		
		3.00		1.30	2.20	1.30	2.20	1.30	2.20		
		4.50		1.90	3.10	1.90	3.10	2.00	3.20		
		5.50		2.20	3.60	2.20	3.60	2.30	3.70		
V _N	Negative Threshold Voltage	1.65		0.20	0.50	0.20	0.80	0.30	0.90	V	
		1.80		0.25	0.56	0.25	0.90	0.35	1.00		
		2.30		0.40	0.75	1.15	0.40	1.15	0.50		1.20
		3.00		0.60	0.98	1.50	0.60	1.50	0.70		1.60
		4.50		1.00	1.42	2.00	1.00	2.00	1.10		2.20
		5.50		1.20	1.68	2.30	1.20	2.30	1.40		2.50

New

Symbol	Parameter	V _{CC} (V)	Conditions	T _A =+25°C			T _A =-40 to +85°C		T _A =-40 to +125°C		Units
				Min.	Typ.	Max.	Min.	Max.	Min.	Max.	
V _P	Positive Threshold Voltage	1.65				1.40		1.40		1.40	V
		1.80				1.50		1.50		1.50	
		2.30				1.80		1.80		1.80	
		3.00				2.20		2.20		2.20	
		4.50				3.10		3.10		3.20	
		5.50				3.60		3.60		3.70	
V _N	Negative Threshold Voltage	1.65		0.20	0.50		0.20		0.30	V	
		1.80		0.25	0.56		0.25		0.35		
		2.30		0.40	0.75		0.40		0.50		
		3.00		0.60	0.98		0.60		0.70		
		4.50		1.00	1.42		1.00		1.10		
		5.50		1.20	1.68		1.20		1.40		

Symbol	Parameter	V _{CC} (V)	T _A =+25°C			T _A =-40 to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PH}	Propagation Delay	1.8 ± 0.15	2.0		12.0	2.0	13.0	ns	C _L = 15 pF R _O = 1 MΩ S1 = Open	Figure 1.3
t _{PL}	A _H to V _N	2.5 ± 0.2	1.0		7.5	1.0	8.0			
		3.3 ± 0.3	0.8		5.2	0.8	5.5			
		5.0 ± 0.3	0.5		4.5	0.5	4.8			
t _{PL}	Propagation Delay	3.3 ± 0.3	1.2		5.7	1.2	6.0	ns	C _L = 50 pF R _O = 500 Ω S1 = Open	Figure 1.3
t _{NL}	A _N to V _P	5.0 ± 0.5	0.8		5.0	0.8	5.3			
t _{OSLH}	Output to Output Skew (Note 5)	3.3 ± 0.3			1.0		1.0	ns	C _L = 50 pF R _O = 500 Ω S1 = Open	Figure 1.3
t _{OSHL}		5.0 ± 0.5			0.8		0.8			
t _{PL}	Output Enable Time	1.8 ± 0.15	3.0		14.0	3.0	15.0	ns	C _L = 15 pF R _O , R _U = 500 Ω S1 = GND for I _{QZH} S1 = V _I for I _{QZL} V _I = 2 × V _{CC}	Figure 1.3
t _{PL}		2.5 ± 0.2	1.8		8.5	1.8	9.0			
		3.3 ± 0.3	1.2		6.2	1.2	6.5			
		5.0 ± 0.3	0.8		5.5	0.8	5.8			
t _{PL}	Output Disable Time	1.8 ± 0.15	2.5		12.0	2.5	13.0	ns	C _L = 50 pF R _O , R _U = 500 Ω S1 = GND for I _{QZH} S1 = V _I for I _{QZL} V _I = 2 × V _{CC}	Figure 1.3
t _{NL}		2.5 ± 0.2	1.5		8.0	1.5	8.5			
		3.3 ± 0.3	0.8		5.7	0.8	6.0			
		5.0 ± 0.5	0.3		4.7	0.3	5.0			

Symbol	Parameter	V _{CC} (V)	T _A =+25°C			T _A =-40 to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PH}	Propagation Delay	1.8 ± 0.15			12.0		13.0	ns	C _L = 15 pF R _O = 1 MΩ S1 = Open	Figure 1.3
t _{PL}	A _H to V _N	2.5 ± 0.2			7.5		8.0			
		3.3 ± 0.3			5.2		5.5			
		5.0 ± 0.3			4.5		4.8			
t _{PL}	Propagation Delay	3.3 ± 0.3			5.7		6.0	ns	C _L = 50 pF R _O = 500 Ω S1 = Open	Figure 1.3
t _{NL}	A _N to V _P	5.0 ± 0.5			5.0		5.3			
t _{OSLH}	Output to Output Skew (Note 5)	3.3 ± 0.3			1.0		1.0	ns	C _L = 50 pF R _O = 500 Ω S1 = Open	Figure 1.3
t _{OSHL}		5.0 ± 0.5			0.8		0.8			
t _{PL}	Output Enable Time	1.8 ± 0.15			14.0		15.0	ns	C _L = 15 pF R _O , R _U = 500 Ω S1 = GND for I _{QZH} S1 = V _I for I _{QZL} V _I = 2 × V _{CC}	Figure 1.3
t _{PL}		2.5 ± 0.2			8.5		9.0			
		3.3 ± 0.3			6.2		6.5			
		5.0 ± 0.3			5.5		5.8			
t _{PL}	Output Disable Time	1.8 ± 0.15			12.0		13.0	ns	C _L = 50 pF R _O , R _U = 500 Ω S1 = GND for I _{QZH} S1 = V _I for I _{QZL} V _I = 2 × V _{CC}	Figure 1.3
t _{NL}		2.5 ± 0.2			8.0		8.5			
		3.3 ± 0.3			5.7		6.0			
		5.0 ± 0.5			4.7		5.0			

信頼性データの要約:

デバイス名 : NC7S14L6X

RMS: W45204

パッケージ: SIP-6 (MicroPAK 1.45 x1.00mm 6L)

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C at max rated Vcc	1008 hours	0/80
HTSL	JESD22-A103	Ta= 150°C	2016 hours	0/80
PC	J-STD-020 JESD-A113	MSL 1@260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	1000 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, Vcc bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/10



デバイス名 : NC7SZ18FHX

RMS: W44998

パッケージ: UDFN-6 (MicroPAK2 1.00x1.00mm 6L)

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	0/80
HTSL	JESD22-A103	Ta= 150°C	2016 hours	0/80
PC	J-STD-020 JESD-A113	MSL 1@260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	1000 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, Vcc bias	192 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/10

デバイス名 : NC7SZ374L6X

RMS: W45056

パッケージ: SIP-6 (MicroPAK 1.45 x1.00mm 6L)

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	0/80
HTSL	JESD22-A103	Ta= 150°C	2016 hours	0/80
PC	J-STD-020 JESD-A113	MSL 1@260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	1000 cycles	0/240
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, Vcc bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/10

電気特性の要約:

電気的特性の提出は要求に基づきます。



影響を受ける部品の一覧:

注: 部品一覧には標準部品番号 (既製品) のみが記載されています。本 PCN の影響を受けるカスタム部品番号は、PCN メールで提供される顧客個別の付録、または PCN カスタマイズポータルに記載されています。

部品番号	認定試験用ピークル
NC7WZ17L6X	NC7S14L6X
NC7SZ125L6X	NC7S14L6X
NC7SZ00L6X	NC7S14L6X
NC7WZ07L6X	NC7S14L6X
NC7SZ04L6X	NC7S14L6X
NC7WZ04L6X	NC7S14L6X
NC7WZ14L6X	NC7S14L6X
NC7SZ11L6X	NC7SZ374L6X
NC7SZ57L6X	NC7SZ374L6X
NC7S08L6X	NC7S14L6X
NC7WZ16L6X	NC7S14L6X
NC7SZ08L6X	NC7S14L6X
NC7SZ58L6X	NC7SZ374L6X
NC7SZ32L6X	NC7S14L6X
NC7SZ126L6X	NC7S14L6X
NC7SZ175L6X	NC7SZ374L6X
NC7SZ86L6X	NC7S14L6X
NC7SZ157L6X	NC7SZ374L6X
NC7SZ332L6X	NC7SZ374L6X
NC7S04L6X	NC7S14L6X
NC7SZ02L6X	NC7S14L6X
NC7SZ14L6X	NC7S14L6X
NC7SU04L6X	NC7S14L6X
NC7SZ19L6X	NC7SZ18FHX
NC7SZ373L6X	NC7SZ374L6X
NC7SZ05L6X	NC7S14L6X
NC7WZU04L6X	NC7S14L6X
NC7S00L6X	NC7S14L6X
NC7SZ27L6X	NC7SZ374L6X
NC7SZ18L6X	NC7SZ18FHX
NC7SZ10L6X	NC7SZ374L6X
NC7ST08L6X	NC7S14L6X



NC7SZU04L6X	NC7S14L6X
NC7S86L6X	NC7S14L6X
NC7ST86L6X	NC7S14L6X
NC7ST02L6X	NC7S14L6X
NC7S02L6X	NC7S14L6X
NC7SZ38L6X	NC7S14L6X
NC7SZ386L6X	NC7SZ374L6X
NC7ST32L6X	NC7S14L6X
NC7ST00L6X	NC7S14L6X
NC7S32L6X	NC7S14L6X
NC7SZ374L6X	NC7SZ374L6X
NC7S14L6X	NC7S14L6X
NC7WZ17FHX	NC7S14L6X
NC7SZ157FHX	NC7SZ374L6X
NC7SZ32FHX	NC7S14L6X
NC7SZ08FHX	NC7S14L6X
NC7WZ07FHX	NC7S14L6X
NC7WZ04FHX	NC7S14L6X
NC7SZ126FHX	NC7S14L6X
NC7SZ57FHX	NC7SZ374L6X
NC7SZ125FHX	NC7S14L6X
NC7SZ05FHX	NC7S14L6X
NC7SZ58FHX	NC7SZ374L6X
NC7SZ04FHX	NC7S14L6X
NC7SZ14FHX	NC7S14L6X
NC7SZ00FHX	NC7S14L6X
NC7WZ14FHX	NC7S14L6X
NC7SZU04FHX	NC7S14L6X
NC7WZ16FHX	NC7S14L6X
NC7SZ02FHX	NC7S14L6X
NC7SZ19FHX	NC7SZ18FHX
NC7SZ38FHX	NC7S14L6X
NC7SZ18FHX	NC7SZ18FHX
NC7SZ86FHX	NC7S14L6X

Appendix A: Changed Products

Product	Customer Part Number	Qualification Vehicle
NC7S00L6X		NC7S14L6X
NC7S02L6X		NC7S14L6X
NC7S04L6X		NC7S14L6X
NC7S08L6X		NC7S14L6X
NC7S14L6X		NC7S14L6X
NC7S32L6X		NC7S14L6X
NC7S86L6X		NC7S14L6X
NC7ST00L6X		NC7S14L6X
NC7ST02L6X		NC7S14L6X
NC7ST08L6X		NC7S14L6X
NC7ST32L6X		NC7S14L6X
NC7ST86L6X		NC7S14L6X
NC7SU04L6X		NC7S14L6X
NC7SZ00FHX		NC7S14L6X
NC7SZ00L6X		NC7S14L6X
NC7SZ02FHX		NC7S14L6X
NC7SZ02L6X		NC7S14L6X
NC7SZ04FHX		NC7S14L6X
NC7SZ04L6X		NC7S14L6X
NC7SZ05FHX		NC7S14L6X
NC7SZ05L6X		NC7S14L6X
NC7SZ08FHX		NC7S14L6X
NC7SZ08L6X		NC7S14L6X
NC7SZ10L6X		NC7SZ374L6X
NC7SZ11L6X		NC7SZ374L6X
NC7SZ125FHX		NC7S14L6X
NC7SZ125L6X		NC7S14L6X
NC7SZ126FHX		NC7S14L6X
NC7SZ126L6X		NC7S14L6X
NC7SZ14FHX		NC7S14L6X
NC7SZ14L6X		NC7S14L6X
NC7SZ157FHX		NC7SZ374L6X
NC7SZ157L6X		NC7SZ374L6X
NC7SZ175L6X		NC7SZ374L6X
NC7SZ18FHX		NC7SZ18FHX
NC7SZ18L6X		NC7SZ18FHX
NC7SZ19FHX		NC7SZ18FHX
NC7SZ19L6X		NC7SZ18FHX
NC7SZ27L6X		NC7SZ374L6X
NC7SZ32FHX		NC7S14L6X
NC7SZ32L6X		NC7S14L6X
NC7SZ332L6X		NC7SZ374L6X
NC7SZ373L6X		NC7SZ374L6X
NC7SZ374L6X		NC7SZ374L6X
NC7SZ386L6X		NC7SZ374L6X
NC7SZ38FHX		NC7S14L6X
NC7SZ38L6X		NC7S14L6X
NC7SZ57FHX		NC7SZ374L6X
NC7SZ57L6X		NC7SZ374L6X
NC7SZ58FHX		NC7SZ374L6X
NC7SZ58L6X		NC7SZ374L6X
NC7SZ86FHX		NC7S14L6X
NC7SZ86L6X		NC7S14L6X
NC7SZU04FHX		NC7S14L6X
NC7SZU04L6X		NC7S14L6X
NC7WZ04FHX		NC7S14L6X
NC7WZ04L6X		NC7S14L6X
NC7WZ07FHX		NC7S14L6X
NC7WZ07L6X		NC7S14L6X



NC7WZ14FHX		NC7S14L6X
NC7WZ14L6X		NC7S14L6X
NC7WZ16FHX		NC7S14L6X
NC7WZ16L6X		NC7S14L6X
NC7WZ17FHX		NC7S14L6X
NC7WZ17L6X		NC7S14L6X
NC7WZU04L6X		NC7S14L6X