Title of Change:	NC7SZXX Family Datasheet updates per FPCN22057X and FPCN22090X.
Effective date:	26 June 2019
Contact information:	Contact your local ON Semiconductor Sales Office or <david.manley@onsemi.com>
Type of notification:	This Product Bulletin is for notification purposes only. ON Semiconductor will proceed with implementation of this change upon publication of this Product Bulletin.

Change Category:

☐ Wafer Fab ☐ Assembly Change ☐ Test Change ☑ Other

<u>Datasheet Change</u>

Change Sub-Category(s):

☐ Manufacturing Site Addition

☐ Manufacturing Site Transfer

☐ Manufacturing Process Change

☐ Material Change

☐ Product specific change

☑ Datasheet/Product Doc change

☐ Shipping/Packaging/Marking

☐ Other: _____

Sites Affected:	ON Semiconductor Sites: None	External Foundry/Subcon Sites: None

Description and Purpose:

This PB is issued to notify customers of the datasheet changes for the NC7SZ family per FPCN22057X and FPCN22090X.

Provided here are comparison between the new and old datasheets regarding changing specifications and/or specification conditions.
- Areas of change are circled red.
- Items from the old datasheet that will be changed are highlighted red.
- The corresponding value on the new datasheet is highlighted in green.
- Areas of change circled in yellow are changes that were found to be needed after the PCN

There will be other changes that represent a cleanup and standardization to the datasheet to represent a family oriented specification format. These changes will include forms of the following:
- Correction of clerical errors such as spelling.
- Formatting to create family standards.
- Addition of new package types and possible removal of packages no longer available.

- **Correction to references above recommended voltage rating.**

Existing datasheet

Description

The NC7SZXX is a single two-input NAND gate 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 6V, independent of V_{CC} operating voltage.

General Description

The NC7SZXX is a single 3-Input NAND Gate from Fairchild's Ultra High Speed 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 7V independent of V_{CC} operating voltage.

Description

The NC7SZXX is a single 2-Input NAND gate with open drain output stage from Fairchild's Ultra-High Speed 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 output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 6V independent of V_{CC} operating voltage. The open drain output stage tolerates voltages up to 6V independent of V_{CC} when in the high impedance state.

New

Description

The NC7SZXX is a single two-input NAND gate 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V, independent of V_{CC} operating voltage.

General Description

The NC7SZXX is a single 3-Input NAND Gate from Fairchild's Ultra High Speed 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage.

Description

The NC7SZXX is a single 2-Input NAND gate with open drain output stage from Fairchild's Ultra-High Speed 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 output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage. The open drain output stage tolerates voltages up to 5.5V independent of V_{CC} when in the high impedance state.

- **Replaced SOT23 package with SC-74A.**

Existing datasheet

Ordering Information

Part Number	Top Mark	Package	Packing Method
NC7SZXXM5X	7Z00	5-Lead SOT23, JEDEC MO-178, 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	Z00	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	YY	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	YY	6-Lead, MicroPak2™, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

Ordering Information

Part Number	Operating Temperature	Top Mark	Eco Status	Package	Packing Method
NC7SZXXM5X	-40 to +85°C	7Z14	RoHS	5-Lead, SOT23, JEDEC MO-178, 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	-40 to +85°C	Z14	RoHS	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	-40 to +85°C	B6	RoHS	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	-40 to +85°C	B6	Green	6-Lead, MicroPak2, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

New

Ordering Information

Part Number	Top Mark	Package	Packing Method
NC7SZXXM5X	7Z00	5-Lead SC-74A 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	Z00	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	YY	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	YY	6-Lead, MicroPak2™, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

Ordering Information

Part Number	Operating Temperature	Top Mark	Eco Status	Package	Packing Method
NC7SZXXM5X	-40 to +85°C	7Z14	RoHS	5-Lead, SC-74A, 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	-40 to +85°C	Z14	RoHS	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	-40 to +85°C	B6	RoHS	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	-40 to +85°C	B6	Green	6-Lead, MicroPak2, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

- **Adjusted Absolute Maximum Voltage to match new process.**

Existing datasheet | New

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC})	−0.5V to +7.0V
DC Input Voltage (V_{IN})	−0.5V to +7.0V
DC Output Voltage (V_{OUT})	−0.5V to +7.0V

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC})	−0.5V to +6.5V
DC Input Voltage (V_{IN})	−0.5V to +6.5V
DC Output Voltage (V_{OUT})	−0.5V to +6.5V

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

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

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

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

- **Replaced SOT23 package with SC-74A.**
- **Adjusted Power Dissipation to reflect new die.**
- **Adjusted Thermal Resistance to reflect new die.**

Existing datasheet | New

P_D	Power Dissipation at +85°C	SOT-23		200	mW
		SC70-5		150	
		MicroPak™-6		130	
		MicroPak2™-6		120	

P_D	Power Dissipation at +85°C	SC-74A		225	mW
		SC70-5		190	
		MicroPak™-6		327	
		MicroPak2™-6		327	

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC})	−0.5V to +6.5V
DC Input Voltage (V_{IN})	−0.5V to +6.5V
DC Output Voltage (V_{OUT})	−0.5V to +6.5V
DC Input Diode Current (I_{IK})	
@V_{IN} < −0.5V	−50 mA
@ V_{IN} > 6V	+20 mA
DC Output Diode Current (I_{OK})	
@V_{OUT} < −0.5V	−50 mA
@ V_{OUT} > 6V, V_{CC} = GND	+20 mA
DC Output Current (I_{OUT})	± 50 mA
DC V_{CC}/GND Current (I_{CC}/I_{GND})	± 50 mA
Storage Temperature (T_{STG})	−65°C to +150°C
Junction Temperature under Bias (T_J)	150°C
Junction Lead Temperature (T_L);	
(Soldering, 10 seconds)	260°C
Power Dissipation (P_D) @ +85°C	
SC70−5	150 mW

Recommended Operating Conditions (Note 2)

Supply Voltage Operating (V_{CC})	1.65V to 5.5V
Supply Voltage Data Retention (V_{CC})	1.5V to 5.5V
Input Voltage (V_{IN})	0V to 5.5V
Output Voltage (V_{OUT})	0V to V_{CC}
Operating Temperature (T_A)	−40°C to +85°C
Input Rise and Fall Time (t_r, t_f)	
V_{CC} @ 1.8V, 2.5V ±0.2V	0 ns/V to 20 ns/V
V_{CC} @ 3.3V ± 0.3V	0 ns/V to 10 ns/V
V_{CC} @ 5.0V ± 0.5V	0 ns/V to 5 ns/V
Thermal Resistance (θ_{JA})	
SC70-5	425°C/W

Note 1: Absolute maximum ratings are DC values beyond which the device may be damaged or have its useful life impaired. The datasheet specifications should be met, without exception, to ensure that the system design is reliable over its power supply, temperature, and output/input loading variables. Fairchild does not recommend operation outside datasheet specifications.

Note 2: Unused inputs must be held HIGH or LOW. They may not float.

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC})	−0.5V to +6.5V
DC Input Voltage (V_{IN})	−0.5V to +6.5V
DC Output Voltage (V_{OUT})	−0.5V to +6.5V
DC Input Diode Current (I_{IK})	
@V_{IN} < −0.5V	−50 mA
@ V_{IN} > 6V	+20 mA
DC Output Diode Current (I_{OK})	
@V_{OUT} < −0.5V	−50 mA
@ V_{OUT} > 6V, V_{CC} = GND	+20 mA
DC Output Current (I_{OUT})	± 50 mA
DC V_{CC}/GND Current (I_{CC}/I_{GND})	± 50 mA
Storage Temperature (T_{STG})	−65°C to +150°C
Junction Temperature under Bias (T_J)	150°C
Junction Lead Temperature (T_L);	
(Soldering, 10 seconds)	260°C
Power Dissipation (P_D) @ +85°C	
SC70−5	190 mW
MicroPak	327 mW

Recommended Operating Conditions (Note 2)

Supply Voltage Operating (V_{CC})	1.65V to 5.5V
Supply Voltage Data Retention (V_{CC})	1.5V to 5.5V
Input Voltage (V_{IN})	0V to 5.5V
Output Voltage (V_{OUT})	0V to V_{CC}
Operating Temperature (T_A)	−40°C to +85°C
Input Rise and Fall Time (t_r, t_f)	
V_{CC} @ 1.8V, 2.5V ±0.2V	0 ns/V to 20 ns/V
V_{CC} @ 3.3V ± 0.3V	0 ns/V to 10 ns/V
V_{CC} @ 5.0V ± 0.5V	0 ns/V to 5 ns/V
Thermal Resistance (θ_{JA})	
SC70-5	659°C/W
MicroPak	382°C/W

Note 1: Absolute maximum ratings are DC values beyond which the device may be damaged or have its useful life impaired. The datasheet specifications should be met, without exception, to ensure that the system design is reliable over its power supply, temperature, and output/input loading variables. Fairchild does not recommend operation outside datasheet specifications.

Note 2: Unused inputs must be held HIGH or LOW. They may not float.

- **Replaced SOT23 package with SC-74A.**
- **Adjusted Thermal Resistance to reflect new die.**

Existing datasheet | New

θ_{JA}	Thermal Resistance	SOT-23		300	°C/W
		SC70-5		435	
		MicroPak™-6		500	
		MicroPak2™-6		560	

θ_{JA}	Thermal Resistance	SC-74A		555	°C/W
		SC70-5		659	
		MicroPak™-6		382	
		MicroPak2™-6		382	

- **Adjusted High-Level Input Voltage and Low-Level Input Voltage to reflect new die.**

Existing datasheet

V_IH	HIGH Level Input Voltage	1.65 to 1.95	0.75V_CC		0.75V_CC	V
		2.30 to 5.50	0.70V_CC		0.70V_CC	
V_IL	LOW Level Input Voltage	1.65 to 1.95		0.25V_CC	0.25V_CC	V
		2.30 to 5.50		0.30V_CC	0.30V_CC	

New

V_IH	HIGH Level Input Voltage	1.65 to 1.95	0.65V_CC		0.65V_CC	V
		2.30 to 5.50	0.70V_CC		0.70V_CC	
V_IL	LOW Level Input Voltage	1.65 to 1.95		0.35V_CC	0.35V_CC	V
		2.30 to 5.50		0.30V_CC	0.30V_CC	

Existing datasheet

V_IH	HIGH Level Input Voltage	1.8 ± 0.15	0.75 V_CC		0.75 V_CC	V
		2.3 to 5.5	0.7 V_CC		0.7 V_CC	
V_IL	LOW Level Input Voltage	1.8 ± 0.15		0.25 V_CC	0.25 V_CC	V
		2.3 to 5.5		0.3 V_CC	0.3 V_CC	

New

V_IH	HIGH Level Input Voltage	1.8 ± 0.15	0.65 V_CC		0.65 V_CC	V
		2.3 to 5.5	0.7 V_CC		0.7 V_CC	
V_IL	LOW Level Input Voltage	1.8 ± 0.15		0.35 V_CC	0.35 V_CC	V
		2.3 to 5.5		0.3 V_CC	0.3 V_CC	

- **Positive Threshold Voltages adjusted to remove Minimum limits.**
- **Negative Threshold Voltages adjusted to remove Maximum limits.**

Existing datasheet

Symbol	Parameter	V_CC	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Min.	T_A=-40 to +85°C Max.	Units
V_P	Positive Threshold Voltage	1.65		0.60	0.99	1.40	0.60	1.40	V
		2.30		1.00	1.39	1.80	1.00	1.80	
		3.00		1.30	1.77	2.20	1.30	2.20	
		4.50		1.90	2.49	3.10	1.90	3.10	
		5.50		2.20	2.95	3.60	2.20	3.60	
V_N	Negative Threshold Voltage	1.65		0.20	0.50	0.90	0.20	0.90	V
		2.30		0.40	0.75	1.15	0.40	1.15	
		3.00		0.60	0.99	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	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Min.	T_A=-40 to +85°C Max.	Units
V_P	Positive Threshold Voltage	1.65			0.99	1.40		1.40	V
		2.30			1.39	1.80		1.80	
		3.00			1.77	2.20		2.20	
		4.50			2.49	3.10		3.10	
		5.50			2.95	3.60		3.60	
V_N	Negative Threshold Voltage	1.65		0.20	0.50		0.20		V
		2.30		0.40	0.75		0.40		
		3.00		0.60	0.99		0.60		
		4.50		1.00	1.43		1.00		
		5.50		1.20	1.70		1.20		

Symbol	Parameter	V_CC (V)	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Min.	T_A=-40 to +85°C Max.	Units
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 Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Min.	T_A=-40 to +85°C Max.	Units
V_P	Positive Threshold Voltage	1.65			1.00	1.40		1.40	V
		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		0.20		V
		1.80		0.25	0.55		0.25		
		2.30		0.40	0.75		0.40		
		3.00		0.60	1.00		0.60		
		4.50		1.00	1.43		1.00		
		5.50		1.20	1.70		1.20		

- **Input Leakage Current specification adjusted to remove crossover with Power Off Current Specification**

Existing datasheet

I_IN	Input Leakage Current	0 to 5.5	V_IN=5.5V, GND		±1	±10	µA

New

I_IN	Input Leakage Current	1.65 to 5.5	V_IN=5.5V, GND		±1	±10	µA

Existing datasheet

I_IN	Input Leakage Current	0 to 5.5		±1	±10	µA	V_IN = 5.5V, GND

New

I_IN	Input Leakage Current	1.65 to 5.5		±1	±10	µA	V_IN = 5.5V, GND

- **Removed Min limits from all Propagation Delay, Output Enable Time and Output Disable Time specifications.**

Existing datasheet   **New**

Existing datasheet

Symbol	Parameter	Vcc	Conditions	TA=25°C Min.	TA=25°C Typ.	TA=25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units	Figure
tPHL, tPLH	Propagation Delay	1.65		2.0	5.4	11.4	2.0	12.0	ns	Figure 4 Figure 5
		1.80	CL=15pF, RL=1MΩ	2.0	4.5	9.5	2.0	10.0		
		2.50±0.20		0.8	3.0	6.5	0.8	7.0		
		3.30±0.30		0.5	2.4	4.5	0.5	4.7		
		5.00±0.50		0.5	2.0	3.9	0.5	4.1		
		3.30±0.30	CL=50pF, RL=500Ω	1.5	2.9	5.0	1.5	5.2		
		5.00±0.50		0.8	2.4	4.3	0.8	4.5		

New

Symbol	Parameter	Vcc	Conditions	TA=25°C Min.	TA=25°C Typ.	TA=25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units	Figure
tPHL, tPLH	Propagation Delay	1.65			5.4	11.4		12.0	ns	Figure 4 Figure 5
		1.80	CL=15pF, RL=1MΩ		4.5	9.5		10.0		
		2.50±0.20			3.0	6.5		7.0		
		3.30±0.30			2.4	4.5		4.7		
		5.00±0.50			2.0	3.9		4.1		
		3.30±0.30	CL=50pF, RL=500Ω		2.9	5.0		5.2		
		5.00±0.50			2.4	4.3		4.5		

Existing datasheet

Symbol	Parameter	Vcc	Conditions	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units	Figure
tPZL		1.65		1.5	5.5	12.9	1.5	13.4	ns	Figure 4 Figure 5
		1.80	CL=50pF, RU=500Ω, RD=500Ω, VIN=2•Vcc	1.5	4.6	10.5	1.5	11.0		
		2.50±0.20		0.8	3.0	7.0	0.8	7.5		
		3.30±0.30		0.8	2.4	5.0	0.8	5.2		
		5.00±0.50		0.5	1.9	4.3	0.5	4.5		
tPLZ	Propagation Delay	1.65		1.5	5.0	12.9	1.5	13.4		
		1.80	CL=50pF, RU=500Ω, RD=500Ω, VIN=2•Vcc	1.5	4.1	10.5	1.5	11.0		
		2.50±0.20		0.8	2.5	7.0	0.8	7.5		
		3.30±0.30		0.8	2.1	5.0	0.8	5.2		
		5.00±0.50		0.5	1.2	4.3	0.5	4.5		

New

Symbol	Parameter	Vcc	Conditions	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units	Figure
tPZL		1.65			5.5	12.9		13.4	ns	Figure 4 Figure 5
		1.80	CL=50pF, RU=500Ω, RD=500Ω, VIN=2•Vcc		4.6	10.5		11.0		
		2.50±0.20			3.0	7.0		7.5		
		3.30±0.30			2.4	5.0		5.2		
		5.00±0.50			1.9	4.3		4.5		
tPLZ	Propagation Delay	1.65			5.0	12.9		13.4		
		1.80	CL=50pF, RU=500Ω, RD=500Ω, VIN=2•Vcc		4.1	10.5		11.0		
		2.50±0.20			2.5	7.0		7.5		
		3.30±0.30			2.1	5.0		5.2		
		5.00±0.50			1.2	4.3		4.5		

Existing datasheet

Symbol	Parameter	Vcc	Condition	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Unit	Figure
tPLH, tPHL	Propagation Delay A to Y0 or Y1	1.80±0.15	CL=15pF, RD=1MΩ, V1=OPEN	2.0	6.3	10.1	2.0	10.5	ns	Figure 4 Figure 6
		2.50±0.20		1.0	3.6	5.7	1.0	6.0		
		3.30±0.30		0.8	2.7	4.0	0.8	4.3		
		5.00±0.50		0.5	2.0	3.1	0.5	3.3		
		3.30±0.30	CL=50pF, RD=500Ω, V1=OPEN	1.2	3.4	4.9	1.2	5.4		
		5.00±0.50		0.8	2.5	3.9	0.8	4.2		
tPZL, tPHZ	Output Enable Time	1.80±0.15	CL=50pF, RD,RU=500Ω, V1=GND for tPZH V1=VIN for tPZL VIN=2 x Vcc	3.0	6.9	12.0	3.0	12.5	ns	Figure 4 Figure 6
		2.50±0.20		1.8	4.2	6.8	1.8	7.3		
		3.30±0.30		1.2	3.2	5.0	1.2	5.5		
		5.00±0.50		0.8	2.5	4.0	0.8	4.3		
	Output Disable Time	1.80±0.15	CL=50pF, RD,RU=500Ω, V1=GND for tPHZ V1=VIN for tPLZ VIN=2 x Vcc	2.5	6.0	10.0	2.5	10.5	ns	Figure 4 Figure 6
		2.50±0.20		1.5	4.0	6.8	1.5	7.1		
		3.30±0.30		0.8	2.9	4.9	0.8	5.3		
		5.00±0.50		0.3	1.8	3.5	0.3	3.7		

New

Symbol	Parameter	Vcc	Condition	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Unit	Figure
tPLH, tPHL	Propagation Delay A to Y0 or Y1	1.80±0.15	CL=15pF, RD=1MΩ, V1=OPEN		6.3	10.1		10.5	ns	Figure 4 Figure 6
		2.50±0.20			3.6	5.7		6.0		
		3.30±0.30			2.7	4.0		4.3		
		5.00±0.50			2.0	3.1		3.3		
		3.30±0.30	CL=50pF, RD=500Ω, V1=OPEN		3.4	4.9		5.4		
		5.00±0.50			2.5	3.9		4.2		
tPZL, tPHZ	Output Enable Time	1.80±0.15	CL=50pF, RD,RU=500Ω, V1=GND for tPZH V1=VIN for tPZL VIN=2 x Vcc		6.9	12.0		12.5	ns	Figure 4 Figure 6
		2.50±0.20			4.2	6.8		7.3		
		3.30±0.30			3.2	5.0		5.5		
		5.00±0.50			2.5	4.0		4.3		
	Output Disable Time	1.80±0.15	CL=50pF, RD,RU=500Ω, V1=GND for tPHZ V1=VIN for tPLZ VIN=2 x Vcc		6.0	10.0		10.5	ns	Figure 4 Figure 6
		2.50±0.20			4.0	6.8		7.1		
		3.30±0.30			2.9	4.9		5.3		
		5.00±0.50			1.8	3.5		3.7		

- **Removed Min limits from all Propagation Delay, Output Enable Time and Output Disable Time specifications.**

Existing datasheet   **New**

Existing datasheet

Symbol	Parameter	Vcc (V)	TA=+25°C Min	TA=+25°C Typ	TA=+25°C Max	TA=-40°C to +85°C Min	TA=-40°C to +85°C Max	Units	Conditions	Figure Number
tPLH tPHL	Propagation Delay D to Q	1.65	2.0	9.0	15.0	2.0	16.0	ns	CL = 15 pF, RD = 1 MΩ, S1 = Open	Figures 1, 3
		1.8	2.0	6.1	10.0	2.0	10.5			
		2.5±0.2	1.5	3.6	6.5	1.6	6.8			
		3.3±0.3	1.0	2.7	4.6	1.2	5.0			
		5.0±0.5	1.0	2.0	3.4	1.0	3.7			
		3.3±0.3	1.5	3.3	5.5	1.5	6.2		CL = 50 pF, RD = 500Ω, S1 = Open	Figures 1, 3
		5.0±0.5	1.0	2.6	4.3	1.3	4.8			
tPLH tPHL	Propagation Delay LE to Q	1.65	2.0	9.0	1.45	2.0	15.0	ns	CL = 15 pF, RD = 1 MΩ, S1 = Open	Figures 1, 3
		1.8	2.0	6.0	9.6	2.0	10.0			
		2.5±0.2	1.8	3.5	6.1	1.5	6.6			
		3.3±0.3	1.3	2.6	4.4	1.0	4.8			
		5.0±0.5	1.0	2.0	3.2	0.8	3.5			
		3.3±0.3	1.5	3.3	5.3	1.5	6.2		CL = 50 pF, RD = 500Ω, S1 = Open	Figures 1, 4
		5.0±0.5	1.3	2.6	4.2	1.2	4.6			
tPZL tPZH	Output Enable Time	1.65	2.0	9.0	13.5	2.0	14.6	ns	CL = 50 pF, VI = 2x Vcc RU, RD = 500Ω, S1 = GND for tPZH, S1 = VI for tPZL	Figures 1, 4
		1.8	2.0	6.0	9.0	2.0	9.5			
		2.5±0.2	2.0	3.7	6.0	1.8	6.6			
		3.3±0.3	1.5	2.8	5.0	1.4	5.3			
		5.0±0.5	1.0	2.2	3.7	1.0	3.9			
tPLZ tPHZ	Output Disable Time	1.65	2.0	7.7	12.0	2.0	13.0	ns	CL = 50 pF, VI = 2x Vcc RU, RD = 500Ω, S1 = GND for tPHZ, S1 = VI for tPLZ	Figures 1, 4
		1.8	2.0	5.1	8.0	2.0	8.5			
		2.5±0.2	2.0	3.5	6.0	1.8	6.3			
		3.3±0.3	1.5	2.8	4.5	1.4	4.7			
		5.0±0.5	1.0	2.3	3.7	1.0	3.9			
tS	Setup Time, D to LE	2.5±0.2			2.0			ns	CL = 50 pF, RD = 500 Ω, S1 = Open	Figures 1, 5
		3.3±0.3			1.5					
		5.0±0.5			1.5					
tH	Hold Time, D to LE	2.5±0.2			1.5			ns	CL = 50 pF, RD = 500 Ω, S1 = Open	Figures 1, 5
		3.3±0.3			1.5					
		5.0±0.5			1.5					
tW	Pulse Width, LE	2.5±0.2			3.0			ns	CL = 50 pF, RD = 500 Ω, S1 = Open	Figures 1, 5
		3.3±0.3			3.0					
		5.0±0.5			3.0					

New

Symbol	Parameter	Vcc (V)	TA=+25°C Min	TA=+25°C Typ	TA=+25°C Max	TA=-40°C to +85°C Min	TA=-40°C to +85°C Max	Units	Conditions	Figure Number
tPLH tPHL	Propagation Delay D to Q	1.65		9.0	15.0		16.0	ns	CL = 15 pF, RD = 1 MΩ, S1 = Open	Figures 1, 3
		1.8		6.1	10.0		10.5			
		2.5±0.2		3.6	6.5		6.8			
		3.3±0.3		2.7	4.6		5.0			
		5.0±0.5		2.0	3.4		3.7			
		3.3±0.3		3.3	5.5		6.2		CL = 50 pF, RD = 500Ω, S1 = Open	Figures 1, 3
		5.0±0.5		2.6	4.3		4.8			
tPLH tPHL	Propagation Delay LE to Q	1.65		9.0	1.45		15.0	ns	CL = 15 pF, RD = 1 MΩ, S1 = Open	Figures 1, 3
		1.8		6.0	9.6		10.0			
		2.5±0.2		3.5	6.1		6.6			
		3.3±0.3		2.6	4.4		4.8			
		5.0±0.5		2.0	3.2		3.5			
		3.3±0.3		3.3	5.3		6.2		CL = 50 pF, RD = 500Ω, S1 = Open	Figures 1, 4
		5.0±0.5		2.6	4.2		4.6			
tPZL tPZH	Output Enable Time	1.65		9.0	13.5		14.6	ns	CL = 50 pF, VI = 2x Vcc RU, RD = 500Ω, S1 = GND for tPZH, S1 = VI for tPZL	Figures 1, 4
		1.8		6.0	9.0		9.5			
		2.5±0.2		3.7	6.0		6.6			
		3.3±0.3		2.8	5.0		5.3			
		5.0±0.5		2.2	3.7		3.9			
tPLZ tPHZ	Output Disable Time	1.65		7.7	12.0		13.0	ns	CL = 50 pF, VI = 2x Vcc RU, RD = 500Ω, S1 = GND for tPHZ, S1 = VI for tPLZ	Figures 1, 4
		1.8		5.1	8.0		8.5			
		2.5±0.2		3.5	6.0		6.3			
		3.3±0.3		2.8	4.5		4.7			
		5.0±0.5		2.3	3.7		3.9			
tS	Setup Time, D to LE	2.5±0.2			2.0			ns	CL = 50 pF, RD = 500 Ω, S1 = Open	Figures 1, 5
		3.3±0.3			1.5					
		5.0±0.5			1.5					
tH	Hold Time, D to LE	2.5±0.2			1.5			ns	CL = 50 pF, RD = 500 Ω, S1 = Open	Figures 1, 5
		3.3±0.3			1.5					
		5.0±0.5			1.5					
tW	Pulse Width, LE	2.5±0.2			3.0			ns	CL = 50 pF, RD = 500 Ω, S1 = Open	Figures 1, 5
		3.3±0.3			3.0					
		5.0±0.5			3.0					

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.**

NC7SZ04M5X	NC7SZU04M5X	NC7SZ02M5X
NC7SZ08M5X	NC7SZ14M5X	NC7SZ86M5X
NC7SZ125M5X	NC7SZ32M5X	NC7SZ05M5X
NC7SZ126M5X	NC7SZ00M5X	NC7SZ38M5X

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.

ON Semiconductor®

製品速報

文書番号：PB22736XA
発行日：26 June 2019

変更件名：	NC7SZXX ファミリー FPCN22057X および FPCN22090X についてのデータシートの更新
発効日：	26 June 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 <david.manley@onsemi.com>にお問い合わせください。
通知種別：	本製品速報は通知目的のみのものです。オン・セミコンダクターは本製品速報の発行により本変更を実行します。
変更カテゴリ：	☐ ウェハファブの変更　　　☐ アセンブリの変更　　　☐ 試験の変更　　☑ その他　　<u>データシートの変更</u>

変更サブカテゴリ：

☐ 製造拠点の追加	☐ 材料の変更	☑ データシート/製品資料の変更
☐ 製造拠点の移転	☐ 製品仕様の変更	☐ 出荷/パッケージング/表記
☐ 製造プロセスの変更		☐ その他： _____

影響を受ける拠点：	オン・セミコンダクター拠点： なし	外部製造工場 / 下請業者拠点： なし

説明および目的：

本 PB は、NC7SZ ファミリー FPCN22057X および FPCN22090X についてのデータシートの変更をお客様にお知らせするものです。

仕様および/または仕様条件の変更に関する新旧データシート間での比較を以下に示します。
- 変更箇所は赤色の丸で囲まれています。
- 旧データシートから変更される項目は赤色でハイライトされています。
- 新データシートで対応する値は緑色でハイライトされています。
- 黄色の丸で囲んだ変更箇所は PCN の後に変更が必要であることがわかったものです

他にも、ファミリーに合わせて仕様フォーマットを表現するためにデータシートの整理と標準化をしたことによる変更があります。これらの変更は、以下のような形で行われます。
- スペルなどの事務的なミスの訂正。
- ファミリーの標準を作成するための書式設定。
- 新しいパッケージタイプの追加、および入手できなくなったパッケージの削除見込み。

- 推奨定格電圧を超えるリファレンスを訂正。

Existing datasheet

Description

The NC7SZXX is a single two-input NAND gate 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 6V, independent of V_{CC} operating voltage.

General Description

The NC7SZXX is a single 3-Input NAND Gate from Fairchild's Ultra High Speed 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 7V independent of V_{CC} operating voltage.

Description

The NC7SZXX is a single 2-Input NAND gate with open drain output stage from Fairchild's Ultra-High Speed 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 output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 6V independent of V_{CC} operating voltage. The open drain output stage tolerates voltages up to 6V independent of V_{CC} when in the high impedance state.

New

Description

The NC7SZXX is a single two-input NAND gate 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V, independent of V_{CC} operating voltage.

General Description

The NC7SZXX is a single 3-Input NAND Gate from Fairchild's Ultra High Speed 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 broad V_{CC} operating range. The device is specified to operate over the 1.65V to 5.5V V_{CC} operating range. The inputs and output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage.

Description

The NC7SZXX is a single 2-Input NAND gate with open drain output stage from Fairchild's Ultra-High Speed 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 output are high impedance when V_{CC} is 0V. Inputs tolerate voltages up to 5.5V independent of V_{CC} operating voltage. The open drain output stage tolerates voltages up to 5.5V independent of V_{CC} when in the high impedance state.

- SOT23 パッケージを SC-74A に置き換え。

Existing datasheet

Ordering Information

Part Number	Top Mark	Package	Packing Method
NC7SZXXM5X	7Z00	5-Lead SOT23, JEDEC MO-178 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	Z00	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	YY	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	YY	6-Lead, MicroPak2™, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

Ordering Information

Part Number	Operating Temperature	Top Mark	Eco Status	Package	Packing Method
NC7SZXXM5X	-40 to +85°C	7Z14	RoHS	5-Lead, SOT23, JEDEC MO-178, 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	-40 to +85°C	Z14	RoHS	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	-40 to +85°C	B6	RoHS	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	-40 to +85°C	B6	Green	6-Lead, MicroPak2, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

New

Ordering Information

Part Number	Top Mark	Package	Packing Method
NC7SZXXM5X	7Z00	5-Lead SC-74A 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	Z00	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	YY	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	YY	6-Lead, MicroPak2™, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

Ordering Information

Part Number	Operating Temperature	Top Mark	Eco Status	Package	Packing Method
NC7SZXXM5X	-40 to +85°C	7Z14	RoHS	5-Lead, SC-74A, 1.6mm	3000 Units on Tape & Reel
NC7SZXXP5X	-40 to +85°C	Z14	RoHS	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3000 Units on Tape & Reel
NC7SZXXL6X	-40 to +85°C	B6	RoHS	6-Lead MicroPak™, 1.00mm Wide	5000 Units on Tape & Reel
NC7SZXXFHX	-40 to +85°C	B6	Green	6-Lead, MicroPak2, 1x1mm Body, .35mm Pitch	5000 Units on Tape & Reel

- 新規プロセスに合わせて絶対最大電圧を調整。

- SOT23 パッケージを SC-74A に置き換え。
- 新規のダイを反映するためにワット損を調整。
- 新規のダイを反映するために熱抵抗を調整。

- SOT23 パッケージを SC-74A に置き換え。
- 新規のダイを反映するために熱抵抗を調整。

- H レベル入力電圧および L レベル入力電圧を、新規のダイを反映するために H レベル入力電圧および L レベル入力電圧を調整。

Existing datasheet

VIH	HIGH Level Input Voltage	1.65 to 1.95		0.75VCC		0.75VCC		V
		2.30 to 5.50		0.70VCC		0.70VCC		
VIL	LOW Level Input Voltage	1.65 to 1.95			0.25VCC		0.25VCC	V
		2.30 to 5.50			0.30VCC		0.30VCC	

New

VIH	HIGH Level Input Voltage	1.65 to 1.95		0.65VCC		0.65VCC		V
		2.30 to 5.50		0.70VCC		0.70VCC		
VIL	LOW Level Input Voltage	1.65 to 1.95			0.35VCC		0.35VCC	V
		2.30 to 5.50			0.30VCC		0.30VCC	

Existing datasheet

VIH	HIGH Level Input Voltage	1.8 ± 0.15	0.75 VCC		0.75 VCC		V
		2.3 to 5.5	0.7 VCC		0.7 VCC		
VIL	LOW Level Input Voltage	1.8 ± 0.15		0.25 VCC		0.25 VCC	V
		2.3 to 5.5		0.3 VCC		0.3 VCC	

New

VIH	HIGH Level Input Voltage	1.8 ± 0.15	0.65 VCC		0.65 VCC		V
		2.3 to 5.5	0.7 VCC		0.7 VCC		
VIL	LOW Level Input Voltage	1.8 ± 0.15		0.35 VCC		0.35 VCC	V
		2.3 to 5.5		0.3 VCC		0.3 VCC	

- **Positive Threshold voltage** の下限を削除。
- **Negative Threshold voltage** の上限を削除。

Existing datasheet

Symbol	Parameter	VCC	Conditions	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units
VP	Positive Threshold Voltage	1.65		0.60	0.99	1.40	0.60	1.40	V
		2.30		1.00	1.39	1.80	1.00	1.80	
		3.00		1.30	1.77	2.20	1.30	2.20	
		4.50		1.90	2.49	3.10	1.90	3.10	
		5.50		2.20	2.95	3.60	2.20	3.60	
VN	Negative Threshold Voltage	1.65		0.20	0.50	0.90	0.20	0.90	V
		2.30		0.40	0.75	1.15	0.40	1.15	
		3.00		0.60	0.99	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	VCC	Conditions	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units
VP	Positive Threshold Voltage	1.65			0.99	1.40		1.40	V
		2.30			1.39	1.80		1.80	
		3.00			1.77	2.20		2.20	
		4.50			2.49	3.10		3.10	
		5.50			2.95	3.60		3.60	
VN	Negative Threshold Voltage	1.65		0.20	0.50		0.20		V
		2.30		0.40	0.75		0.40		
		3.00		0.60	0.99		0.60		
		4.50		1.00	1.43		1.00		
		5.50		1.20	1.70		1.20		

Existing datasheet

Symbol	Parameter	VCC (V)	Conditions	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units
VP	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	
VN	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	VCC (V)	Conditions	TA=+25°C Min.	TA=+25°C Typ.	TA=+25°C Max.	TA=-40 to +85°C Min.	TA=-40 to +85°C Max.	Units
VP	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	
VN	Negative Threshold Voltage	1.65		0.20	0.50		0.20		V
		1.80		0.25	0.55		0.25		
		2.30		0.40	0.75		0.40		
		3.00		0.60	1.00		0.60		
		4.50		1.00	1.43		1.00		
		5.50		1.20	1.70		1.20		

- 電源オフ電流仕様でクロスオーバーを除去したのに合わせて入力リーク電流仕様を調整

Existing datasheet

IIN	Input Leakage Current	0 to 5.5	VIN=5.5V, GND		±1	±10	µA

New

IIN	Input Leakage Current	1.65 to 5.5	VIN=5.5V, GND		±1	±10	µA

Existing datasheet

IIN	Input Leakage Current	0 to 5.5		±1	±10	µA	VIN = 5.5V, GND

New

IIN	Input Leakage Current	1.65 to 5.5		±1	±10	µA	VIN = 5.5V, GND

- すべての伝播遅延と出力イネーブル時間と出力ディスエーブル時間の仕様から下限を削除

Existing datasheet

Symbol	Parameter	V_CC	Conditions	TA=25°C Min.	Typ.	Max.	TA=-40 to +85°C Min.	Max.	Units	Figure
tPHL, tPLH	Propagation Delay	1.65	C_L=15pF, R_L=1MΩ	2.0	5.4	11.4	2.0	12.0	ns	Figure 4 Figure 5
		1.80		2.0	4.5	9.5	2.0	10.0		
		2.50 ± 0.20		0.8	3.0	6.5	0.8	7.0		
		3.30 ± 0.30		0.5	2.4	4.5	0.5	4.7		
		5.00 ± 0.50		0.5	2.0	3.9	0.5	4.1		
		3.30 ± 0.30	C_L=50pF, R_L=500Ω	1.5	2.9	5.0	1.5	5.2		
		5.00 ± 0.50		0.8	2.4	4.3	0.8	4.5		

Symbol	Parameter	V_CC	Conditions	TA=+25°C Min.	Typ.	Max.	TA=-40 to +85°C Min.	Max.	Units	Figure
tPZL		1.65	C_L=50pF, RU=500Ω, RD=500Ω, V_IN=2·V_CC	1.5	5.5	12.9	1.5	13.4	ns	Figure 4 Figure 5
		1.80		1.5	4.6	10.5	1.5	11.0		
		2.50 ± 0.20		0.8	3.0	7.0	0.8	7.5		
		3.30 ± 0.30		0.8	2.4	5.0	0.8	5.2		
	Propagation Delay	5.00 ± 0.50		0.5	1.9	4.3	0.5	4.5		
tPLZ		1.65	C_L=50pF, RU=500Ω, RD=500Ω, V_IN=2·V_CC	1.5	5.0	12.9	1.5	13.4		
		1.80		1.5	4.1	10.5	1.5	11.0		
		2.50 ± 0.20		0.8	2.5	7.0	0.8	7.5		
		3.30 ± 0.30		0.8	2.1	5.0	0.8	5.2		
		5.00 ± 0.50		0.5	1.2	4.3	0.5	4.5		

New

Symbol	Parameter	V_CC	Conditions	TA=25°C Min.	Typ.	Max.	TA=-40 to +85°C Min.	Max.	Units	Figure
tPHL, tPLH	Propagation Delay	1.65	C_L=15pF, R_L=1MΩ		5.4	11.4		12.0	ns	Figure 4 Figure 5
		1.80			4.5	9.5		10.0		
		2.50 ± 0.20			3.0	6.5		7.0		
		3.30 ± 0.30			2.4	4.5		4.7		
		5.00 ± 0.50			2.0	3.9		4.1		
		3.30 ± 0.30	C_L=50pF, R_L=500Ω		2.9	5.0		5.2		
		5.00 ± 0.50			2.4	4.3		4.5		

Symbol	Parameter	V_CC	Conditions	TA=+25°C Min.	Typ.	Max.	TA=-40 to +85°C Min.	Max.	Units	Figure
tPZL		1.65	C_L=50pF, RU=500Ω, RD=500Ω, V_IN=2·V_CC		5.5	12.9		13.4	ns	Figure 4 Figure 5
		1.80			4.6	10.5		11.0		
		2.50 ± 0.20			3.0	7.0		7.5		
		3.30 ± 0.30			2.4	5.0		5.2		
	Propagation Delay	5.00 ± 0.50			1.9	4.3		4.5		
tPLZ		1.65			5.0	12.9		13.4		
		1.80	C_L=50pF, RU=500Ω, RD=500Ω, V_IN=2·V_CC		4.1	10.5		11.0		
		2.50 ± 0.20			2.5	7.0		7.5		
		3.30 ± 0.30			2.1	5.0		5.2		
		5.00 ± 0.50			1.2	4.3		4.5		

Existing (lower table):

Symbol	Parameter	V_CC	Condition	TA=+25°C Min.	Typ.	Max.	TA=-40 to +85°C Min.	Max.	Unit	Figure
tPLH, tPHL	Propagation Delay A to Y0 or Y1	1.80 ± 0.15	C_L=15pF, R_D=1MΩ, V_1=OPEN	2.0	6.3	10.1	2.0	10.5	ns	Figure 4 Figure 6
		2.50 ± 0.20		1.0	3.6	5.7	1.0	6.0		
		3.30 ± 0.30		0.8	2.7	4.0	0.8	4.3		
		5.00 ± 0.50		0.5	2.0	3.1	0.5	3.3		
		3.30 ± 0.30	C_L=50pF, R_D=500Ω, V_1=OPEN	1.2	3.4	4.9	1.2	5.4		
		5.00 ± 0.50		0.8	2.5	3.9	0.8	4.2		
tPZL, tPHZ	Output Enable Time	1.80 ± 0.15	C_L=50pF, R_D,R_U=500Ω, V_1=GND for tPZH V_1=V_IN for tPZL V_IN=2 x V_CC	3.0	6.9	12.0	3.0	12.5	ns	Figure 4 Figure 6
		2.50 ± 0.20		1.8	4.2	6.8	1.8	7.3		
		3.30 ± 0.30		1.2	3.2	5.0	1.2	5.5		
		5.00 ± 0.50		0.8	2.5	4.0	0.8	4.3		
	Output Disable Time	1.80 ± 0.15	C_L=50pF, R_D,R_U=500Ω, V_1=GND for tPHZ V_1=V_IN for tPLZ V_IN=2 x V_CC	2.5	6.0	10.0	2.5	10.5	ns	Figure 4 Figure 6
		2.50 ± 0.20		1.5	4.0	6.8	1.5	7.1		
		3.30 ± 0.30		0.8	2.9	4.9	0.8	5.3		
		5.00 ± 0.50		0.3	1.8	3.5	0.3	3.7		

New (lower table):

Symbol	Parameter	V_CC	Condition	TA=+25°C Min.	Typ.	Max.	TA=-40 to +85°C Min.	Max.	Unit	Figure
tPLH, tPHL	Propagation Delay A to Y0 or Y1	1.80 ± 0.15	C_L=15pF, R_D=1MΩ, V_1=OPEN		6.3	10.1		10.5	ns	Figure 4 Figure 6
		2.50 ± 0.20			3.6	5.7		6.0		
		3.30 ± 0.30			2.7	4.0		4.3		
		5.00 ± 0.50			2.0	3.1		3.3		
		3.30 ± 0.30	C_L=50pF, R_D=500Ω, V_1=OPEN		3.4	4.9		5.4		
		5.00 ± 0.50			2.5	3.9		4.2		
tPZL, tPHZ	Output Enable Time	1.80 ± 0.15	C_L=50pF, R_D,R_U=500Ω, V_1=GND for tPZH V_1=V_IN for tPZL V_IN=2 x V_CC		6.9	12.0		12.5	ns	Figure 4 Figure 6
		2.50 ± 0.20			4.2	6.8		7.3		
		3.30 ± 0.30			3.2	5.0		5.5		
		5.00 ± 0.50			2.5	4.0		4.3		
	Output Disable Time	1.80 ± 0.15	C_L=50pF, R_D,R_U=500Ω, V_1=GND for tPHZ V_1=V_IN for tPLZ V_IN=2 x V_CC		6.0	10.0		10.5	ns	Figure 4 Figure 6
		2.50 ± 0.20			4.0	6.8		7.1		
		3.30 ± 0.30			2.9	4.9		5.3		
		5.00 ± 0.50			1.8	3.5		3.7		

- すべての伝播遅延と出力イネーブル時間と出力ディスエーブル時間の仕様から下限を削除

Existing datasheet

Symbol	Parameter	V_CC (V)	TA = +25°C Min	Typ	Max	TA = -40°C to +85°C Min	Max	Units	Conditions	Figure Number
tPLH tPHL	Propagation Delay D to Q	1.65	2.0	9.0	15.0	2.0	16.0	ns	C_L = 15 pF R_D = 1 MΩ S_1 = Open	Figures 1, 3
		1.8	2.0	6.1	10.0	2.0	10.5			
		2.5 ± 0.2	1.5	3.6	6.5	1.6	6.8			
		3.3 ± 0.3	1.0	2.7	4.6	1.2	5.0			
		5.0 ± 0.5	1.0	2.0	3.4	1.0	3.7			
		3.3 ± 0.3	1.5	3.3	5.5	1.5	6.2		C_L = 50 pF R_D = 500Ω, S_1 = Open	Figures 1, 3
		5.0 ± 0.5	1.0	2.6	4.3	1.8	4.8			
tPLH tPHL	Propagation Delay LE to Q	1.65	2.0	9.0	1.45	2.0	15.0		C_L = 15 pF R_D = 1 MΩ S_1 = Open	Figures 1, 3
		1.8	2.0	6.0	9.6	2.0	10.0			
		2.5 ± 0.2	1.8	3.5	6.1	1.0	6.6	ns		
		3.3 ± 0.3	1.3	2.6	4.4	1.0	4.8			
		5.0 ± 0.5	1.0	2.0	3.2	0.8	3.5			
		3.3 ± 0.3	1.5	3.3	5.3	1.5	6.2		C_L = 50 pF R_D = 500Ω, S_1 = Open	Figures 1, 4
		5.0 ± 0.5	1.3	2.6	4.2	1.2	4.6			
tPZL tPZH	Output Enable Time	1.65	2.0	9.0	13.5	2.0	14.6		C_L = 50 pF, V_I = 2x V_CC R_U, R_D = 500Ω S1 = GND for tPZH S_1 = V_I for tPZL	Figures 1, 4
		1.8	2.0	6.0	9.0	2.0	9.5			
		2.5 ± 0.2	2.0	3.7	6.0	1.8	6.6			
		3.3 ± 0.3	1.5	2.8	5.0	1.4	5.3			
		5.0 ± 0.5	1.0	2.2	3.7	1.0	3.9			
tPLZ tPHZ	Output Disable Time	1.65	2.0	7.7	12.0	2.0	13.0		C_L = 50 pF, V_I = 2x V_CC R_U, R_D = 500Ω S_1 = GND for tPHZ S_1 = V_I for tPLZ	Figures 1, 4
		1.8	2.0	5.1	8.0	2.0	8.5			
		2.5 ± 0.2	2.0	3.5	6.0	1.8	6.3			
		3.3 ± 0.3	1.5	2.8	4.5	1.4	4.7			
		5.0 ± 0.5	1.0	2.3	3.7	1.0	3.9			
tS	Setup Time, D to LE	2.5 ± 0.2					2.0	ns	C_L = 50 pF R_D = 500 Ω, S_1 = Open	Figures 1, 5
		3.3 ± 0.3					1.5			
		5.0 ± 0.5					1.5			
tH	Hold Time, D to LE	2.5 ± 0.2					1.5	ns	C_L = 50 pF R_D = 500 Ω, S_1 = Open	Figures 1, 5
		3.3 ± 0.3					1.5			
		5.0 ± 0.5					1.5			
tW	Pulse Width, LE	2.5 ± 0.2					3.0	ns	C_L = 50 pF R_D = 500 Ω, S_1 = Open	Figures 1, 5
		3.3 ± 0.3					3.0			
		5.0 ± 0.5					3.0			

New

Symbol	Parameter	V_CC (V)	TA = +25°C Min	Typ	Max	TA = -40°C to +85°C Min	Max	Units	Conditions	Figure Number
tPLH tPHL	Propagation Delay D to Q	1.65		9.0	15.0		16.0	ns	C_L = 15 pF R_D = 1 MΩ S_1 = Open	Figures 1, 3
		1.8		6.1	10.0		10.5			
		2.5 ± 0.2		3.6	6.5		6.8			
		3.3 ± 0.3		2.7	4.6		5.0			
		5.0 ± 0.5		2.0	3.4		3.7			
		3.3 ± 0.3		3.3	5.5		6.2		C_L = 50 pF R_D = 500Ω, S_1 = Open	Figures 1, 3
		5.0 ± 0.5		2.6	4.3		4.8			
tPLH tPHL	Propagation Delay LE to Q	1.65		9.0	1.45		15.0		C_L = 15 pF R_D = 1 MΩ S_1 = Open	Figures 1, 3
		1.8		6.0	9.6		10.0			
		2.5 ± 0.2		3.5	6.1		6.6	ns		
		3.3 ± 0.3		2.6	4.4		4.8			
		5.0 ± 0.5		2.0	3.2		3.5			
		3.3 ± 0.3		3.3	5.3		6.2		C_L = 50 pF R_D = 500Ω, S_1 = Open	Figures 1, 4
		5.0 ± 0.5		2.6	4.2		4.6			
tPZL tPZH	Output Enable Time	1.65		9.0	13.5		14.6		C_L = 50 pF, V_I = 2x V_CC R_U, R_D = 500Ω S1 = GND for tPZH S_1 = V_I for tPZL	Figures 1, 4
		1.8		6.0	9.0		9.5			
		2.5 ± 0.2		3.7	6.0		6.6			
		3.3 ± 0.3		2.8	5.0		5.3			
		5.0 ± 0.5		2.2	3.7		3.9			
tPLZ tPHZ	Output Disable Time	1.65		7.7	12.0		13.0		C_L = 50 pF, V_I = 2x V_CC R_U, R_D = 500Ω S_1 = GND for tPHZ S_1 = V_I for tPLZ	Figures 1, 4
		1.8		5.1	8.0		8.5			
		2.5 ± 0.2		3.5	6.0		6.3			
		3.3 ± 0.3		2.8	4.5		4.7			
		5.0 ± 0.5		2.3	3.7		3.9			
tS	Setup Time, D to LE	2.5 ± 0.2					2.0	ns	C_L = 50 pF R_D = 500 Ω, S_1 = Open	Figures 1, 5
		3.3 ± 0.3					1.5			
		5.0 ± 0.5					1.5			
tH	Hold Time, D to LE	2.5 ± 0.2					1.5	ns	C_L = 50 pF R_D = 500 Ω, S_1 = Open	Figures 1, 5
		3.3 ± 0.3					1.5			
		5.0 ± 0.5					1.5			
tW	Pulse Width, LE	2.5 ± 0.2					3.0	ns	C_L = 50 pF R_D = 500 Ω, S_1 = Open	Figures 1, 5
		3.3 ± 0.3					3.0			
		5.0 ± 0.5					3.0			

影響を受ける部品の一覧：

注: 標準の部品番号（既製品）のみが部品一覧に記載されます。 本 PCN に影響を受けるカスタム 部品は、PCN メールの顧客の特定の PCN の付属文書、または PCN カスタマイズポータルに記載されています。

NC7SZ04M5X	NC7SZU04M5X	NC7SZ02M5X
NC7SZ08M5X	NC7SZ14M5X	NC7SZ86M5X
NC7SZ125M5X	NC7SZ32M5X	NC7SZ05M5X
NC7SZ126M5X	NC7SZ00M5X	NC7SZ38M5X