



Title of Change:	NL17SZXX Family datasheet updates per PCN22038X, PCN22087X and PCN22088X.	
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:	<input type="checkbox"/> Wafer Fab <input type="checkbox"/> Assembly Change <input type="checkbox"/> Test Change <input checked="" type="checkbox"/> Other <u>Datasheet Change</u>	
Change Sub-Category(s):	<input type="checkbox"/> Manufacturing Site Addition <input type="checkbox"/> Material Change <input checked="" type="checkbox"/> Datasheet/Product Doc change <input type="checkbox"/> Manufacturing Site Transfer <input type="checkbox"/> Product specific change <input type="checkbox"/> Shipping/Packaging/Marking <input type="checkbox"/> Manufacturing Process Change <input type="checkbox"/> Other: _____	
Sites Affected:	ON Semiconductor Sites: None	External Foundry/Subcon Sites: None
Description and Purpose:		
<p>This PB is issued to notify customers of datasheet changes for the NL17SZ family per FPCN22038X, FPCN22087X and FPCN22088X.</p> <p>Provided here are comparison between the new and old datasheets regarding changing specifications and/or specification conditions.</p> <ul style="list-style-type: none"> • 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 <p>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:</p> <ul style="list-style-type: none"> • 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. • Standardization of the switching waveforms test circuit figures. • Formatting of the Device ordering information to provide more information to the customer regarding marking and Pin 1 orientation in tape or reel. 		

- Maximum voltage rating changed from 7.0V to 6.5V (Excluding Automotive Devices)
- Thermal resistance and Power Dissipation adjusted to reflect new die.
- Electrostatic Discharge/Latchup adjusted to reflect JEDEC Standard.

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 +7.0	V
V _{OUT}	DC Output Voltage (SOT-353/SC70-5/SC-88A/SOT-553/UDFN Packages)	-0.5 to +7.0	V
V _{OUT}	DC Output Voltage (SOT-953 Package)	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	-50	mA
I _{OK}	DC Output Diode Current (SOT-953 Package)	±50	mA
I _{OK}	DC Output Diode Current (SOT-353/SC70-5/SC-88A/SOT-553 Packages)	±50	mA
I _{OUT}	DC Output Current	±50	mA
I _{CC}	DC Supply Current per Supply Pin	±100	mA
T _{STG}	Storage Temperature Range	-65 to +150	°C
T _L	Lead Temperature, 1 mm from Case for 10 Seconds	260	°C
T _J	Junction Temperature Under Bias	+150	°C
θ _{JA}	Thermal Resistance	SOT-353 (Note 1) SOT-553 350 496	°C/W
P _D	Power Dissipation in Still Air at 85°C	SOT-353 SOT-553 186 135	mW
MSL	Moisture Sensitivity	Level 1	
F _R	Flammability Rating	Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in
ESD	ESD Classification	Human Body Model (Note 2) Machine Model (Note 3) Charged Device Model (Note 4)	2000 200 N/A
I _{LATCHUP}	Latchup Performance Above V _{CC} and Below GND at 125°C (Note 5)	±100	mA

New

MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
V _{CC}	DC Supply Voltage	UDFN6, SOT-553, SC-88A (NLV) SC-74A, SC-88A, SOT-953	-0.5 to +7.0
V _{IN}	DC Input Voltage	UDFN6, SOT-553, SC-88A (NLV) SC-74A, SC-88A, SOT-953	-0.5 to +6.5
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 _{OUT}	DC Output Voltage	SC-88A (NLV), UDFN6, SOT-553	-0.5 to +7.0
V _{OUT}	DC Output Voltage	SC-74A, SC-88A, SOT-953	-0.5 to +6.5
I _{IK}	DC Input Diode Current	V _{IN} < GND	-50
I _{OK}	DC Output Diode Current	V _{OUT} < GND	±50
I _{OUT}	DC Output Source/Sink Current		±50
I _{CC} or I _{GND}	DC Supply Current per Supply Pin or Ground Pin		±100
T _{STG}	Storage Temperature Range		-65 to +150
T _L	Lead Temperature, 1 mm from Case for 10 secs		260
T _J	Junction Temperature Under Bias		+150
θ _{JA}	Thermal Resistance (Note 2)	SC-88A SC-74A SOT-553 SOT-953 UDFN6	659 555 562 560 382
P _D	Power Dissipation in Still Air	SC-88A SC-74A SOT-553 SOT-953 UDFN6	190 225 222 223 327
MSL	Moisture Sensitivity		Level 1
F _R	Flammability Rating	Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in
V _{ESD}	ESD Withstand Voltage (Note 3)	Human Body Model Charged Device Model	2000 1000
I _{LATCHUP}	Latchup Performance (Note 4)		±100

- DC Output Voltage adjusted to clarify OVT protection.
- Input Rise and fall time adjusted to reflect new process.

Existing datasheet

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V _{CC}	DC Supply Voltage	1.65	5.5	V
V _{IN}	DC Input Voltage	0	5.5	V
V _{OUT}	DC Output Voltage (SOT-353/SC70-5/SC-88A/SOT-553/UDFN Packages)	0	5.5	V
V _{OUT}	DC Output Voltage (SOT-953 Package)	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 ± 0.3 V V _{CC} = 5.0 V ± 0.5 V	100 20	ns/V

New

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
V _{OUT}	DC Output Voltage	0	5.5	V
T _A	Operating Temperature Range	-55	+125	°C
t _r , t _f	Input Rise and Fall Time (SC-88A (NLV), UDFN6, SOT-553)	V _{CC} = 3.0 V to 3.6 V V _{CC} = 4.5 V to 5.5 V	0 100 20	ns/V
t _r , t _f	Input Rise and Fall Time (SC-74A, SC-88A, SOT-953)	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 10 5	ns/V



- High-Level Input Voltage and Low-Level Input Voltage specification adjusted to reflect new process.
- High-Level Output Current and Low-Level Output Current spec adjusted to align with industry standard.
- Input Leakage Current adjusted to remove crossover with Input Leakage Current specification.

Existing datasheet

DC ELECTRICAL CHARACTERISTICS								
Symbol	Parameter	Condition	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Unit
			Min	Typ	Max	Min	Max	
V _{IH}	High-Level Input Voltage		1.65 to 1.95 2.3 to 5.5			0.75 V _{CC} 0.7 V _{CC}	0.75 V _{CC} 0.7 V _{CC}	V
V _{IL}	Low-Level Input Voltage		1.65 to 1.95 2.3 to 5.5			0.25 V _{CC} 0.3 V _{CC}	0.25 V _{CC} 0.3 V _{CC}	V
V _{OH}	High-Level Output Voltage V _N = V _{OL} or V _{IH}	I _{OH} = -100 μA I _{OH} = -3 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65 2.3 3.0 3.0 4.5	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	V _{CC} 1.29 1.9 2.2 2.4 2.5 3.8	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	V
V _{OL}	Low-Level Output Voltage V _N = V _{IH} or V _{OH}	I _{OL} = 100 μA I _{OL} = 3 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	0.0 0.08 0.20 0.22 0.28 0.38 0.42	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	V
I _{IN}	Input Leakage Current	V _N = 5.5 V or GND	0 to 5.5			±0.1	±1.0	μA
I _{OFF}	Power Off Leakage Current	V _N = 5.5 V or V _{OUT} = 5.5 V	0			1	10	μA
I _{CC}	Quiescent Supply Current	V _N = 5.5 V or GND	5.5			1	10	μA

New

DC ELECTRICAL CHARACTERISTICS								
Symbol	Parameter	Condition	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 2.3 to 5.5			0.65 V _{CC} 0.70 V _{CC}	0.65 V _{CC} 0.70 V _{CC}	V
V _{IL}	Low-Level Input Voltage		1.65 to 1.95 2.3 to 5.5			0.35 V _{CC} 0.30 V _{CC}	0.35 V _{CC} 0.30 V _{CC}	V
V _{OH}	High-Level Output Voltage V _N = V _{IH} or V _{IL}	I _{OH} = -100 μA I _{OH} = -3 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.3 3.8	V _{CC} 1.29 1.9 2.1 2.2 2.3 3.8	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.3 3.8	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.3 3.8	V
V _{OL}	Low-Level Output Voltage V _N = V _{IH} or V _{IL}	I _{OL} = 100 μA I _{OL} = 3 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	0.0 0.08 0.22 0.22 0.28 0.38 0.42	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	V
I _{IN}	Input Leakage Current	V _N = 5.5 V or GND	1.65 to 5.5			±0.1*	±1.0	μA
I _{OFF}	Power Off Leakage Current	V _N = 5.5 V or V _{OUT} = 5.5 V	0			1	10	μA
I _{CC}	Quiescent Supply Current	V _N = V _{CC} or GND	5.5			1	10	μA

- Positive Input Threshold Voltage adjusted to remove Min limits. Negative Input Threshold Voltage adjusted to remove Max limits.
- High-Level Output Current and Low-Level Output Current spec adjusted to align with industry standard.
- Input Leakage Current adjusted to remove crossover with Input Leakage Current specification.

Existing datasheet

DC ELECTRICAL CHARACTERISTICS								
Symbol	Parameter	Condition	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Units
			Min	Typ	Max	Min	Max	
V _{IH}	Positive Input Threshold Voltage		1.65 2.3 2.7 3.0 4.5 5.5	0.6 1.0 1.2 1.3 1.9 2.3	1.0 1.5 1.7 1.9 2.7 3.3	0.6 1.0 1.2 1.3 1.9 2.3	1.4 1.8 2.0 2.2 3.1 3.6	V
V _{IL}	Negative Input Threshold Voltage		1.65 2.3 2.7 3.0 4.5 5.5	0.2 0.4 0.5 0.6 1.0 1.5	0.5 0.75 0.87 1.0 1.5 2.0	0.2 0.4 0.5 0.6 1.0 1.5	0.6 1.1 1.4 1.5 2.0 2.5	V
V _H	Input Hysteresis Voltage		1.65 2.3 2.7 3.0 4.5 5.5	0.1 0.25 0.3 0.4 0.6 1.2	0.4 0.75 0.83 0.93 1.2 1.9	0.1 0.25 0.3 0.4 0.6 1.2	0.9 1.1 1.15 1.2 1.5 1.7	V
V _{OH}	High-Level Output Voltage V _N = V _{IH} or V _{IL}	I _{OH} = -100 μA I _{OH} = -3 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65 2.3 3.0 3.0 4.5	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	V _{CC} 1.29 1.9 2.2 2.4 2.5 3.8	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	V
V _{OL}	Low-Level Output Voltage V _N = V _{IH} or V _{IL}	I _{OL} = 100 μA I _{OL} = 3 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	0.0 0.08 0.22 0.22 0.28 0.38 0.42	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	V
I _{IN}	Input Leakage Current	V _N = 5.5 V or GND	1.65 to 5.5			±0.1	±1.0	μA
I _{OFF}	Power Off Leakage Current (SOT-23/SOT-553 Packages)	V _N = 5.5 V or V _{OUT} = 5.5 V	0			1	10	μA
I _{CC}	Quiescent Supply Current	V _N = 5.5 V or GND	5.5			1	10	μA

New

DC ELECTRICAL CHARACTERISTICS								
Symbol	Parameter	Condition	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Units
			Min	Typ	Max	Min	Max	
V _{IH}	Positive Input Threshold Voltage		1.65 2.3 2.7 3.0 4.5 5.5	0.6 1.0 1.2 1.3 1.9 2.3	1.0 1.5 1.7 1.9 2.7 3.3	0.6 1.0 1.2 1.3 1.9 2.3	1.4 1.8 2.0 2.2 3.1 3.6	V
V _{IL}	Negative Input Threshold Voltage		1.65 2.3 2.7 3.0 4.5 5.5	0.2 0.4 0.5 0.6 1.0 1.5	0.5 0.75 0.87 1.0 1.5 2.0	0.2 0.4 0.5 0.6 1.0 1.5	0.6 1.1 1.4 1.5 2.0 2.5	V
V _H	Input Hysteresis Voltage		1.65 2.3 2.7 3.0 4.5 5.5	0.1 0.25 0.3 0.4 0.6 1.2	0.4 0.75 0.83 0.93 1.2 1.9	0.1 0.25 0.3 0.4 0.6 1.2	0.9 1.1 1.15 1.2 1.5 1.7	V
V _{OH}	High-Level Output Voltage V _N = V _{IH} or V _{IL}	I _{OH} = -100 μA I _{OH} = -3 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.3 3.8	V _{CC} 1.29 1.9 2.1 2.2 2.3 3.8	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.3 3.8	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.3 3.8	V
V _{OL}	Low-Level Output Voltage V _N = V _{IH} or V _{IL}	I _{OL} = 100 μA I _{OL} = 3 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	0.0 0.08 0.22 0.22 0.28 0.38 0.42	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55	V
I _{IN}	Input Leakage Current	V _N = 5.5 V or GND	1.65 to 5.5			±0.1*	±1.0	μA
I _{OFF}	Power Off Leakage Current	V _N = 5.5 V or V _{OUT} = 5.5 V	0			1	10	μA
I _{CC}	Quiescent Supply Current	V _N = V _{CC} or GND	5.5			1	10	μA



- Minimum limits will be removed on all propagation delay and Output Enable Time and Output Disable Time specifications

Existing datasheet

AC ELECTRICAL CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PLL}	Propagation Delay AN to YN (Figures 4 and 5, Table 1)	R _L = 1 MΩ, C _L = 15 pF	1.8 ± 0.15	2.0	9.0	10	2.0	10.5	ns	
		R _L = 1 MΩ, C _L = 15 pF	2.5 ± 0.2	1.0	7.5	1.0	8.0			
		R _L = 1 MΩ, C _L = 15 pF R _L = 500 Ω, C _L = 50 pF	3.3 ± 0.3	0.8	5.2	0.8	5.5			
		R _L = 1 MΩ, C _L = 15 pF R _L = 500 Ω, C _L = 50 pF	5.0 ± 0.5	0.5	4.5	0.5	4.8			
t _{PDH} t _{PDZ}	Output Enable Time (Figures 6, 7 and 8, Table 1)	R _L = 250 Ω, C _L = 50 pF	1.8 ± 0.15	2.0	7.8	9.5	2.0	10	ns	
		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 _{PHZ} t _{PLZ}	Output Disable Time (Figures 6, 7 and 8, Table 1)	R _L and R ₁ = 500 Ω, C _L = 50 pF	1.8 ± 0.15	2.0	8.0	10	2.0	10.5	ns	
		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				

AC ELECTRICAL CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PLL}	Propagation Delay (Figure 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	1.65	2.0	9.1	15	2.0	15.6	ns	
			1.8	2.0	7.6	12.5	2.0	13		
			2.5 ± 0.2	1.0	5.0	9.0	1.0	9.5		
			3.3 ± 0.3	1.0	3.7	6.3	1.0	6.5		
t _{PLZ}	Propagation Delay (Figure 3 and 4)	R _L = 500 Ω, C _L = 50 pF	3.3 ± 0.3	1.5	4.4	7.2	1.5	7.5	ns	
			5.0 ± 0.5	0.8	3.7	5.9	0.8	6.2		

New

AC ELECTRICAL CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PLL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	1.65 to 1.95	-	6.0	10	-	10.5	ns	
		R _L = 1 MΩ, C _L = 15 pF	2.3 to 2.7	-	3.4	7.5	-	8.0		
		R _L = 1 MΩ, C _L = 15 pF	3.0 to 3.6	-	2.5	5.2	-	5.5		
		R _L = 500 Ω, C _L = 50 pF	-	-	2.9	5.7	-	6.0		
		R _L = 1 MΩ, C _L = 15 pF	4.5 to 5.5	-	2.0	4.5	-	4.8		
		R _L = 500 Ω, C _L = 50 pF	-	-	2.3	5.0	-	5.3		
t _{PDH} t _{PDZ}	Output Enable Time, OE to Y (Figures 3 and 4)	R _L = 250 Ω, C _L = 50 pF	1.65 to 1.95	-	6.5	9.5	-	10	ns	
		2.3 to 2.7	-	3.8	8.5	-	9.0			
		3.0 to 3.6	-	2.8	6.2	-	6.5			
		4.5 to 5.5	-	2.0	5.5	-	5.8			
t _{PHZ} t _{PLZ}	Output Disable Time, OE to Y (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	5.0	10	-	10.5	ns	
		2.3 to 2.7	-	3.3	8.0	-	8.5			
		3.0 to 3.6	-	2.7	5.7	-	6.0			
		4.5 to 5.5	-	2.8	4.7	-	5.0			

AC ELECTRICAL CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PLL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	1.65 to 1.95	-	9.1	15	-	15.6	ns	
		R _L = 1 MΩ, C _L = 15 pF	2.3 to 2.7	-	5.0	9.0	-	9.5		
		R _L = 1 MΩ, C _L = 15 pF	3.0 to 3.6	-	3.7	6.3	-	6.5		
		R _L = 500 Ω, C _L = 50 pF	-	-	4.4	7.2	-	7.5		
		R _L = 1 MΩ, C _L = 15 pF	4.5 to 5.5	-	3.1	5.2	-	5.5		
		R _L = 500 Ω, C _L = 50 pF	-	-	3.7	5.9	-	6.2		

- Minimum limits will be removed on all propagation delay and Output Enable and Output Disable Time specifications.
- Capacitive characteristics adjusted to reflect new process.

Existing datasheet

AC ELECTRICAL CHARACTERISTICS (t_{tr} = t_r = 2.5 ns; C_L = 50 pF; R_L = 500 Ω)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Unit
				Min	Typ	Max	Min	Max		
t _{PDZ}	Propagation Delay (Figure 3 and 4)	R _L = R ₁ = 500 Ω, C _L = 50 pF	1.8 ± 0.15	0.8	5.3	11.6	0.8	12.0	ns	
			2.5 ± 0.2	1.2	3.7	5.8	1.2	6.4		
			3.3 ± 0.3	0.8	2.9	4.4	0.8	4.8		
			5.0 ± 0.5	0.5	2.3	3.5	0.5	3.9		
t _{PLZ}	Propagation Delay (Figure 3 and 4)	R _L = R ₁ = 500 Ω, C _L = 50 pF	1.8 ± 0.15	0.8	5.3	11.6	0.8	1.20	ns	
			2.5 ± 0.2	1.2	2.8	5.8	1.2	6.4		
			3.3 ± 0.3	0.8	2.1	4.4	0.8	4.8		
			5.0 ± 0.5	0.5	1.4	3.5	0.5	3.9		

CAPACITIVE CHARACTERISTICS

Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	> 4.0	pF
C _{PD}	Power Dissipation Capacitance (Note 6)	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	25 30	pF

CAPACITIVE CHARACTERISTICS

Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	> 2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	4.0	pF
C _{PD}	Power Dissipation Capacitance (Note 6)	10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	4.0	pF

New

AC ELECTRICAL CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PDZ}	Propagation Delay, (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	6.0	9.0	-	9.5	ns	
			2.3 to 2.7	-	3.6	6.1	-	6.5		
			3.0 to 3.6	-	2.7	5.6	-	6.0		
			4.5 to 5.5	-	2.1	4.4	-	4.8		
t _{PLZ}	Propagation Delay, (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	4.0	9.0	-	9.5	ns	
			2.3 to 2.7	-	2.8	6.1	-	6.5		
			3.0 to 3.6	-	2.5	5.6	-	6.0		
			4.5 to 5.5	-	2.2	4.4	-	4.8		

CAPACITIVE CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS (t_{tr} = t_r = 3.0 ns)

Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

- Capacitive characteristics adjusted to reflect new process.
- Output Capacitance added.

CAPACITIVE CHARACTERISTICS				
Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	> 2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 7)	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS (t _{RI} = t _{RF} = 3.0 ns)				
Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS				
Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	7.0	pF
C _{PD}	Power Dissipation Capacitance (Note 8)	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS (t _{RI} = t _{RF} = 3.0 ns)				
Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

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](#).

- | | | |
|---------------|----------------|----------------|
| NL17SZ00DFT2G | NL17SZ08DFT2G | NL17SZ17DFT2G |
| NL17SZ02DFT2G | NL17SZ125DFT2G | NL17SZ32DFT2G |
| NL17SZ04DFT2G | NL17SZ126DFT2G | NL17SZ86DFT2G |
| NL17SZ06DFT2G | NL17SZ14DFT2G | NL17SZU04DFT2G |
| NL17SZ07DFT2G | NL17SZ16DFT2G | NL18SZ125DFT2G |

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。



変更件名:	NL17SZXX ファミリー PCN22038X、PCN22087X および PCN22088X 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:	<input type="checkbox"/> ウェハファブの変更 <input type="checkbox"/> アセンブリの変更 <input type="checkbox"/> 試験の変更 <input checked="" type="checkbox"/> その他 <u>データシートの変更</u>	
変更サブカテゴリ:	<input type="checkbox"/> 製造拠点の追加 <input 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 type="checkbox"/> 製造拠点の移転 <input type="checkbox"/> 製品仕様の変更 <input type="checkbox"/> 出荷/パッケージング/表記 <input 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: なし	外部製造工場 / 下請業者拠点: なし
説明および目的:	<p>本 PB は、NL17SZ ファミリー FPCN22038X、FPCN22087X および FPCN22088X 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。</p> <p>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。</p> <ul style="list-style-type: none"> 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 <p>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。</p> <ul style="list-style-type: none"> 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。 波形切り替え試験回路図の標準化。 マーキング、およびテープまたはリールでのピン 1 の向きに関して、お客様にさらに情報を提供するための、デバイス注文情報の書式設定。 	



- 最大定格電圧を 7.0V から 6.5V に変更 (車載デバイスを除く)
- 新規のダイを反映するために熱抵抗とワット損を調整。
- JEDEC 規格を反映するために静電放電/ラッチアップを調整。

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 +7.0	V
V _{OUT}	DC Output Voltage (SOT-353/SC70-5/SC-88A/SOT-553/UDFN Packages)	-0.5 to +7.0	V
V _{OUT}	DC Output Voltage (SOT-953 Package)	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	-50	mA
I _{OK}	DC Output Diode Current (SOT-953 Package)	±50	mA
I _{OK}	DC Output Diode Current (SOT-353/SC70-5/SC-88A/SOT-553 Packages)	±50	mA
I _{OUT}	DC Output Current	±50	mA
I _{CC}	DC Supply Current per Supply Pin	±100	mA
T _{STG}	Storage Temperature Range	-65 to +150	°C
T _L	Lead Temperature, 1 mm from Case for 10 Seconds	260	°C
T _J	Junction Temperature Under Bias	+150	°C
θ _{JA}	Thermal Resistance (SOT-353 (Note 1) SOT-553)	350 496	°C/W
P _D	Power Dissipation in Still Air at 85°C (SOT-353 SOT-553)	186 135	mW
MSL	Moisture Sensitivity	Level 1	-
F ₈	Flammability Rating	Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in
ESD	ESD Classification (Human Body Model (Note 2) Machine Model (Note 3) Charged Device Model (Note 4))	2000 200 N/A	-
I _{LATCHUP}	Latchup Performance Above V _{CC} and Below GND at 125°C (Note 5)	±100	mA

New

MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
V _{CC}	DC Supply Voltage (UDFN6, SOT-553, SC-88A (NLV) SC-74A, SC-88A, SOT-953)	-0.5 to +7.0 -0.5 to +6.5	V
V _{IN}	DC Input Voltage (UDFN6, SOT-553, SC-88A (NLV) SC-74A, SC-88A, SOT-953)	-0.5 to +7.0 -0.5 to +6.5	V
V _{OUT}	DC Output Voltage (SC-88A (NLV), UDFN6, SOT-553)	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 +7.0 -0.5 to +7.0
V _{OUT}	DC Output Voltage (SC-74A, SC-88A, SOT-953)	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
I _{IK}	DC Input Diode Current	V _{IN} < GND	-50
I _{OK}	DC Output Diode Current	V _{OUT} < GND	±50
I _{OUT}	DC Output Source/Sink Current		±50
I _{CC} or I _{QDD}	DC Supply Current per Supply Pin or Ground Pin		±100
T _{STG}	Storage Temperature Range		-65 to +150
T _L	Lead Temperature, 1 mm from Case for 10 secs		260
T _J	Junction Temperature Under Bias		+150
θ _{JA}	Thermal Resistance (Note 2)	SC-88A SC-74A SOT-553 SOT-953 UDFN6	659 555 562 580 392
P _D	Power Dissipation in Still Air	SC-88A SC-74A SOT-553 SOT-953 UDFN6	190 225 222 223 327
MSL	Moisture Sensitivity		Level 1
F ₈	Flammability Rating	Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in
ESD	ESD Withstand Voltage (Note 3)	Human Body Model Charged Device Model	2000 1000
I _{LATCHUP}	Latchup Performance (Note 4)		±100

- OVT 保護について明確化するために DC 出力電圧を、調整。
- 新規プロセスを反映するために入力立ち上がり/立ち下がり時間を調整。

Existing datasheet

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V _{CC}	DC Supply Voltage	1.65	5.5	V
V _{IN}	DC Input Voltage	0	5.5	V
V _{OUT}	DC Output Voltage (SOT-353/SC70-5/SC-88A/SOT-553/UDFN Packages)	0	5.5	V
V _{OUT}	DC Output Voltage (SOT-953 Package)	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 ± 0.3 V V _{CC} = 5.0 V ± 0.5 V)	0	100 20	ns/V

New

RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristic	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 (SC-88A (NLV), UDFN6, SOT-553)	V _{CC} = 3.0 V to 3.6 V V _{CC} = 4.5 V to 5.5 V	0 100 20	ns/V
t _r , t _f	Input Rise and Fall Time (SC-74A, SC-88A, SOT-953)	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 0 10 5	ns/V



- 新規プロセスを反映するために H レベル入力電圧および L レベル入力電圧仕様を調整。
- 業界標準に合わせて H レベル出力電流および L レベル出力電流仕様を調整。
- 入力リーク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を調整。

Existing datasheet

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	T _A = 25°C			-55°C ≤ T _A ≤ 125°C		Unit
			Min	Typ	Max	Min	Max	
V _{IH}	High-Level Input Voltage		1.65 to 1.95 2.3 to 5.5	0.75 V _{CC} 0.7 V _{CC}		0.75 V _{CC} 0.7 V _{CC}		V
V _{IL}	Low-Level Input Voltage		1.65 to 1.95 2.3 to 5.5			0.25 V _{CC} 0.3 V _{CC}		V
V _{OH}	High-Level Output Voltage V _{IH} = V _{IH} or V _{IH}	I _{OH} = -100 μA I _{OH} = -3 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.4 2.5 3.8	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8			V
V _{OL}	Low-Level Output Voltage V _{IL} = V _{IL} or V _{IL}	I _{OL} = 100 μA I _{OL} = 3 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	0.08 0.24 0.20 0.3 0.4 0.4 0.42	0.1 0.24 0.3 0.4 0.4 0.55 0.55	0.1 0.24 0.3 0.4 0.4 0.55 0.55		V
I _{IN}	Input Leakage Current	V _{IN} = 5.5 V or GND	0 to 5.5			±0.1	±1.0	μA
I _{OFF}	Power Off Leakage Current	V _{IN} = 5.5 V or V _{OUT} = 5.5 V	0			1	10	μA
I _{CC}	Quiescent Supply Current	V _{IN} = 5.5 V or GND	5.5			1	10	μA

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 2.3 to 5.5	0.65 V _{CC} 0.70 V _{CC}	-	-	0.65 V _{CC} 0.70 V _{CC}	-	V
V _{IL}	Low-Level Input Voltage		1.65 to 1.95 2.3 to 5.5	-	-	0.30 V _{CC} 0.30 V _{CC}	-	0.30 V _{CC} 0.30 V _{CC}	V
V _{OH}	High-Level Output Voltage V _{IH} = V _{IH} or V _{IH}	I _{OH} = -100 μA I _{OH} = -4 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	V _{CC} - 0.1 1.29 1.9 2.1 2.2 2.4 2.5 3.8	V _{CC} 1.4 1.9 2.1 2.2 2.4 2.5 3.8	-	V _{CC} - 0.1 1.29 1.9 2.2 2.4 2.5 3.8	-	V
V _{OL}	Low-Level Output Voltage V _{IL} = V _{IL} or V _{IL}	I _{OL} = 100 μA I _{OL} = 4 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65 2.3 2.7 3.0 3.0 4.5	-	0.08 0.24 0.20 0.3 0.4 0.4 0.42	0.1 0.24 0.3 0.4 0.4 0.55 0.55	-	0.1 0.24 0.3 0.4 0.4 0.55 0.55	V
I _{IN}	Input Leakage Current	V _{IN} = 5.5 V or GND	1.65 to 5.5			±0.1*	±1.0	μA	
I _{OFF}	Power Off Leakage Current	V _{IN} = 5.5 V or V _{OUT} = 5.5 V	0			1.0	10	μA	
I _{CC}	Quiescent Supply Current	V _{IN} = V _{CC} or GND	5.5			1.0	10	μA	

- Positive Threshold voltage の下限を削除。Negative Threshold voltage の上限を削除。
- 業界標準に合わせて H レベル出力電流および L レベル出力電流仕様を調整。
- 入力リーク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を調整。

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 _{I+}	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	
V _{I-}	Negative Input Threshold Voltage		1.65	0.2	0.5	0.8	0.2	0.8	V
			2.3	0.4	0.75	1.0	0.4	1.0	
			2.7	0.5	0.87	1.1	0.5	1.1	
			3.0	0.6	1.0	1.2	0.6	1.2	
			4.5	1.0	1.5	2.0	1.0	2.0	
V _{IH}	Input Hysteresis Voltage		1.65	0.1	0.48	0.9	0.1	0.9	V
			2.3	0.25	0.75	1.1	0.25	1.1	
			2.7	0.3	0.83	1.15	0.3	1.15	
			3.0	0.4	0.89	1.2	0.4	1.2	
			4.5	0.6	1.2	1.5	0.6	1.5	
V _{OH}	High-Level Output Voltage V _{IH} = V _{IH} or V _{IH}	I _{OH} = -100 μA I _{OH} = -3 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65	V _{CC} - 0.1 1.29	V _{CC} - 0.1 1.29			V	
			2.3	1.9	2.1	1.9			
			2.7	2.2	2.4	2.2			
			3.0	2.4	2.7	2.4			
			3.0	2.3	2.5	2.3			
V _{OL}	Low-Level Output Voltage V _{IL} = V _{IL} or V _{IL}	I _{OL} = 100 μA I _{OL} = 3 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65	0.0	0.1	0.1	0.24	V	
			2.3	0.08	0.24	0.3			
			2.7	0.22	0.4	0.4			
			3.0	0.28	0.4	0.4			
			3.0	0.38	0.55	0.55			
I _{IN}	Input Leakage Current	V _{IN} = 5.5 V or GND	0 to 5.5			±0.1	±1.0	μA	
I _{OFF}	Power Off Leakage Current (SOT-23/SOT-553 Packages)	V _{IN} = 5.5 V or V _{OUT} = 5.5 V	0			1	10	μA	
I _{CC}	Quiescent Supply Current	V _{IN} = 5.5 V or GND	5.5			1	10	μA	

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 _{I+}	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	
V _{I-}	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	-	
V _{IH}	Input Hysteresis Voltage		1.65	0.1	0.48	0.9	0.1	0.9	V
			2.3	0.25	0.75	1.1	0.25	1.1	
			2.7	0.3	0.83	1.15	0.3	1.15	
			3.0	0.4	0.89	1.2	0.4	1.2	
			4.5	0.6	1.2	1.5	0.6	1.5	
V _{OH}	High-Level Output Voltage V _{IH} = V _{IH} or V _{IH}	I _{OH} = -100 μA I _{OH} = -4 mA I _{OH} = -8 mA I _{OH} = -12 mA I _{OH} = -16 mA I _{OH} = -24 mA I _{OH} = -32 mA	1.65 to 5.5 1.65	V _{CC} - 0.1 1.29	V _{CC} - 0.1 1.29			V	
			2.3	1.9	2.1	1.9			
			2.7	2.2	2.4	2.2			
			3.0	2.4	2.7	2.4			
			3.0	2.3	2.5	2.3			
V _{OL}	Low-Level Output Voltage V _{IL} = V _{IL} or V _{IL}	I _{OL} = 100 μA I _{OL} = 4 mA I _{OL} = 8 mA I _{OL} = 12 mA I _{OL} = 16 mA I _{OL} = 24 mA I _{OL} = 32 mA	1.65 to 5.5 1.65	-	0.08 0.24	0.1 0.24	0.1 0.24	V	
			2.3	-	0.22	0.4	0.3		
			2.7	-	0.28	0.4	0.4		
			3.0	-	0.38	0.55	0.4		
			3.0	-	0.42	0.55	0.55		
I _{IN}	Input Leakage Current	V _{IN} = 5.5 V or GND	1.65 to 5.5			±0.1*	±1.0	μA	
I _{OFF}	Power Off Leakage Current	V _{IN} = 5.5 V or V _{OUT} = 5.5 V	0			1.0	10	μA	
I _{CC}	Quiescent Supply Current	V _{IN} = V _{CC} or GND	5.5			1.0	10	μA	

- すべての伝播遅延と出カイン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

AC ELECTRICAL CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PHL}	Propagation Delay AN to YN (Figures 4 and 5, Table 1)	R _L = 1 MΩ, C _L = 15 pF	1.8 ± 0.15	2.0	9.0	10	2.0	10.5	ns	
			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	0.8	5.7	1.2	6.0			
t _{PHZ} t _{PLZ}	Output Enable Time (Figures 6, 7 and 8, Table 1)	R _L = 250 Ω, C _L = 50 pF	1.8 ± 0.15	2.0	7.6	9.5	2.0	10	ns	
			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 _{PHZ} t _{PLZ}	Output Disable Time (Figures 6, 7 and 8, Table 1)	R _L and R _I = 500 Ω, C _L = 50 pF	1.8 ± 0.15	2.0	8.0	10	2.0	10.5	ns	
			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			

AC ELECTRICAL CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PHL}	Propagation Delay (Figure 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	1.65	2.0	9.1	15	2.0	15.6	ns	
			1.8	2.0	7.6	12.5	2.0	13		
			2.5 ± 0.2	1.0	5.0	9.0	1.0	9.5		
			3.3 ± 0.3	1.0	3.7	6.3	1.0	6.5		
t _{PHZ} t _{PLZ}	Propagation Delay (Figure 3 and 4)	R _L = 500 Ω, C _L = 50 pF	3.3 ± 0.3	1.5	4.4	7.2	1.5	7.5	ns	
			5.0 ± 0.5	0.8	3.7	5.9	0.8	6.2		

New

AC ELECTRICAL CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	1.65 to 1.95	-	6.0	10	-	10.5	ns	
		R _L = 1 MΩ, C _L = 15 pF	2.3 to 2.7	-	3.4	7.5	-	8.0		
		R _L = 1 MΩ, C _L = 15 pF	3.0 to 3.6	-	2.5	5.2	-	5.5		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.9	5.7	-	6.0		
		R _L = 1 MΩ, C _L = 15 pF	4.5 to 5.5	-	2.0	4.5	-	4.8		
t _{PHZ} t _{PLZ}	Output Enable Time, OE to Y (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	6.5	9.5	-	10	ns	
		R _L = 500 Ω, C _L = 50 pF	2.3 to 2.7	-	3.6	6.5	-	9.0		
		R _L = 500 Ω, C _L = 50 pF	3.0 to 3.6	-	2.8	6.2	-	6.5		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.0	5.5	-	5.8		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.3	5.0	-	5.3		
t _{PHZ} t _{PLZ}	Output Disable Time, OE to Y (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	5.0	10	-	10.5	ns	
		R _L = 500 Ω, C _L = 50 pF	2.3 to 2.7	-	3.3	8.0	-	8.5		
		R _L = 500 Ω, C _L = 50 pF	3.0 to 3.6	-	2.7	5.7	-	6.0		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.0	4.7	-	5.0		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.6	4.7	-	5.0		

AC ELECTRICAL CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PLH} t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	1.65 to 1.95	-	9.1	15	-	15.6	ns	
		R _L = 1 MΩ, C _L = 15 pF	2.3 to 2.7	-	5.0	9.0	-	9.5		
		R _L = 1 MΩ, C _L = 15 pF	3.0 to 3.6	-	3.7	6.3	-	6.5		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	4.4	7.2	-	7.5		
		R _L = 1 MΩ, C _L = 15 pF	4.5 to 5.5	-	3.1	5.2	-	5.5		
t _{PHZ} t _{PLZ}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	3.7	5.9	-	6.2	ns	

- すべての伝播遅延と出カイン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。
- 容量性特性を、新規プロセスを反映するために調整。

Existing datasheet

AC ELECTRICAL CHARACTERISTICS ($t_R = t_F = 2.5 \text{ ns}$, C_L = 50 pF, R_L = 500 Ω)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Unit
				Min	Typ	Max	Min	Max		
t _{PZL}	Propagation Delay (Figure 3 and 4)	R _L = R _I = 500 Ω, C _L = 50 pF	1.8 ± 0.15	0.8	5.3	11.6	0.8	12.0	ns	
			2.5 ± 0.2	1.2	3.7	5.8	1.2	6.4		
			3.3 ± 0.3	0.8	2.9	4.4	0.8	4.8		
			5.0 ± 0.5	0.5	2.3	3.5	0.5	3.9		
t _{PLZ}	Propagation Delay (Figure 3 and 4)	R _L = R _I = 500 Ω, C _L = 50 pF	1.8 ± 0.15	0.8	5.3	11.6	0.8	12.0	ns	
			2.5 ± 0.2	1.2	2.8	5.8	1.2	6.4		
			3.3 ± 0.3	0.8	2.1	4.4	0.8	4.8		
			5.0 ± 0.5	0.5	1.4	3.5	0.5	3.9		

CAPACITIVE CHARACTERISTICS

Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	> 4.0	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	25	pF
C _{PD}	Power Dissipation Capacitance (Note 6)	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	30	pF

CAPACITIVE CHARACTERISTICS

Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	> 2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	4.0	pF
C _{PD}	Power Dissipation Capacitance (Note 6)	10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	4.0	pF

New

AC ELECTRICAL CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			-55°C ≤ T _A ≤ 125°C			Units
				Min	Typ	Max	Min	Max		
t _{PZL}	Propagation Delay, (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	6.0	9.0	-	9.5	ns	
		R _L = 500 Ω, C _L = 50 pF	2.3 to 2.7	-	3.6	6.1	-	6.5		
		R _L = 500 Ω, C _L = 50 pF	3.0 to 3.6	-	2.7	5.6	-	6.0		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.1	4.4	-	4.8		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	4.0	9.0	-	9.5		
t _{PLZ}	Propagation Delay, (Figures 3 and 4)	R _L = 500 Ω, C _L = 50 pF	1.65 to 1.95	-	4.0	9.0	-	9.5	ns	
		R _L = 500 Ω, C _L = 50 pF	2.3 to 2.7	-	2.8	6.1	-	6.5		
		R _L = 500 Ω, C _L = 50 pF	3.0 to 3.6	-	2.5	5.6	-	6.0		
		R _L = 500 Ω, C _L = 50 pF	4.5 to 5.5	-	2.2	4.4	-	4.8		

CAPACITIVE CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS ($t_R = t_F = 3.0 \text{ ns}$)

Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF



- 容量性特性を、新規プロセスを反映するために調整。
- 出力容量を追加。

CAPACITIVE CHARACTERISTICS				
Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	> 2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 7)	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS (t _R = t _F = 3.0 ns)				
Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS				
Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	7.0	pF
C _{PD}	Power Dissipation Capacitance (Note 8)	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _I = 0 V or V _{CC}	9 11	pF

CAPACITIVE CHARACTERISTICS (t _R = t _F = 3.0 ns)				
Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{OUT}	Output Capacitance	V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	2.5	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	10 MHz, V _{CC} = 3.3 V, V _{IN} = 0 V or V _{CC} 10 MHz, V _{CC} = 5.5 V, V _{IN} = 0 V or V _{CC}	9 11	pF

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 メールのお客様の特定の 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。

NL17SZ00DFT2G
 NL17SZ02DFT2G
 NL17SZ04DFT2G
 NL17SZ06DFT2G
 NL17SZ07DFT2G

NL17SZ08DFT2G
 NL17SZ125DFT2G
 NL17SZ126DFT2G
 NL17SZ14DFT2G
 NL17SZ16DFT2G

NL17SZ17DFT2G
 NL17SZ32DFT2G
 NL17SZ86DFT2G
 NL17SZU04DFT2G
 NL18SZ125DFT2G



Appendix A: Changed Products

Product	Customer Part Number
NL17SZ00DFT2G	
NL17SZ02DFT2G	
NL17SZ04DFT2G	
NL17SZ06DFT2G	
NL17SZ07DFT2G	
NL17SZ08DFT2G	
NL17SZ125DFT2G	
NL17SZ126DFT2G	
NL17SZ14DFT2G	
NL17SZ16DFT2G	
NL17SZ17DFT2G	
NL17SZ32DFT2G	
NL17SZ86DFT2G	
NL17SZU04DFT2G	
NL18SZ125DFT2G	