



Final Product/Process Change Notification

Document #:FPCN25572X32

Issue Date: 02 Jun 2024

Title of Change:	Update to FPCN25572X - To include the reliability data for 3V MicroPak 6lds package Qualification of Vanguard Fab and Assembly related changes for Logic parts.	
Proposed First Ship date:	09 Sep 2024 or earlier if approved by customer	
Contact Information:	Contact your local onsemi Sales Office or < logic.fpcn@onsemi.com >	
PCN Samples Contact:	Contact your local onsemi Sales Office. 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. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.	
Additional Reliability Data:	Contact your local onsemi Sales Office or ChangKit.Mok@onsemi.com	
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. onsemi 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	
Marking of Parts/ Traceability of Change:	Custom source on label will show TW instead of US/JP to indicate new die source from Vanguard. Changed material may be identified by plant code or lot code too.	
Change Category:	Wafer Fab Change, Assembly Change, Test Change	
Change Sub-Category(s):	Manufacturing Site Transfer, Datasheet/Product Doc change	
Sites Affected:		
onsemi Sites	External Foundry/Subcon Sites	
None	STARS Microelectronics, Thailand	
	Vanguard International Semiconductor, Taiwan	
Description and Purpose:		
With reference to FPCN25572X , this FPCN presents the information solely for 3V MicroPak 6lds package and the pertinent reliability data.		
	From	To
Fab Site	TPSCo and Diodes Maine	Vanguard International Semiconductor (VIS)
Assembly Site	Stars, Hana, UTAC	Stars
Wire	PCC, Au, Au	PCC
Mold Compound	EME G700LTD, CEL9220HF13H, G770HCD	EME G700LTD
Die Attach	HR-5104, 8006NS, 8006NS	HR-5104

Reliability Data Summary:

QV DEVICE NAME : NC7SPU04L6X
RMS : S88230 / S95242
PACKAGE : SIP-6

Test	Specification	Condition	Interval	Results
High Temperature Operating Life	JESD22-A108	Ta=125°C, 100 % max rated Vcc	1008 hrs	0/77
High Temperature Storage Life	JESD22-A103	Ta=150°C	1008 hrs	0/77
Preconditioning	J-STD-020 / JESD-A113	MSL 1 @ 260°C, Pre TC, uHAST, HAST for surface mount pkgs only	-	0/231
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cyc	0/77
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/77
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/77
Resistance to Solder Heat	JESD22- B106	Ta = 265°C, 10 sec Required for through hole devices only	-	0/10

Electrical Characteristics Summary:

	From	To
Datasheet	Current Revision	New Revision

- Datasheet Existing vs Updated Comparison for NC7SP08L6X.

NC7SP08 – AC Characteristics

Existing

AC ELECTRICAL CHARACTERISTICS

Symbol	Description	Condition	V _{CC}	T _A = 25°C			T _A = -40°C to +85°C			Unit
				Min	Typ	Max	Min	Max		
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 10 pF	0.9	-	42.7	-	-	-	-	ns
			1.10 to 1.30	-	11.8	24.6	-	34.3	-	-
			1.40 to 1.60	-	6.2	14.8	-	15.0	-	-
			1.65 to 1.95	-	4.4	12.0	-	12.2	-	-
			2.3 to 2.7	-	2.9	9.4	-	9.9	-	-
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	44.1	-	-	-	-	ns
			1.10 to 1.30	-	12.4	25.7	-	37.3	-	-
			1.40 to 1.60	-	6.6	15.5	-	16.5	-	-
			1.65 to 1.95	-	4.8	12.6	-	13.6	-	-
			2.3 to 2.7	-	3.2	9.9	-	10.8	-	-
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 30 pF	0.9	-	48.3	-	-	-	-	ns
			1.10 to 1.30	-	13.9	29.5	-	46.3	-	-
			1.40 to 1.60	-	7.9	17.8	-	18.2	-	-
			1.65 to 1.95	-	5.8	14.4	-	15.9	-	-
			2.3 to 2.7	-	3.9	11.3	-	12.8	-	-
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 30 pF	0.9	-	48.3	-	-	-	-	ns
			1.10 to 1.30	-	13.9	29.5	-	46.3	-	-
			1.40 to 1.60	-	7.9	17.8	-	18.2	-	-
			1.65 to 1.95	-	5.8	14.4	-	15.9	-	-
			2.3 to 2.7	-	3.9	11.3	-	12.8	-	-

New

AC ELECTRICAL CHARACTERISTICS

Symbol	Remarks	Condition	V _{CC} = 0	T _A = 25°C			T _A = -40°C to +85°C			Unit
				Min	Typ	Max	Min	Max		
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 10 pF	0.9	-	59.4	-	-	-	-	ns
			1.10 to 1.30	-	14.4	38.7	-	46.4	-	-
			1.40 to 1.60	-	6.2	14.8	-	15.0	-	-
			1.65 to 1.95	-	4.4	12.0	-	12.2	-	-
			2.3 to 2.7	-	2.9	9.4	-	9.9	-	-
			3.0 to 3.6	-	2.3	8.3	-	9.0	-	-
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	60.9	-	-	-	-	ns
			1.10 to 1.30	-	15.1	40.3	-	48.3	-	-
			1.40 to 1.60	-	6.6	15.5	-	16.5	-	-
			1.65 to 1.95	-	4.8	12.6	-	13.6	-	-
			2.3 to 2.7	-	3.2	9.9	-	10.8	-	-
			3.0 to 3.6	-	2.5	8.7	-	9.5	-	-
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 30 pF	0.9	-	65.2	-	-	-	-	ns
			1.10 to 1.30	-	17.2	45.1	-	53.8	-	-
			1.40 to 1.60	-	7.9	17.8	-	18.2	-	-
			1.65 to 1.95	-	5.8	14.4	-	15.9	-	-
			2.3 to 2.7	-	3.9	11.3	-	12.8	-	-
			3.0 to 3.6	-	3.1	9.2	-	10.7	-	-

- Datasheet Existing vs Updated Comparison for NC7SP14L6X

NC7SP14 – AC Characteristics

Existing

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	T _A = 25°C			T _A = -40°C to +85°C			Unit
			V _{CC} = 0	Min	Typ	Max	Min	Max	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 10 pF	0.9	-	47.9	-	-	-	ns
			1.10 to 1.30	-	12.8	27.0	-	34.3	
			1.40 to 1.60	-	6.6	14.8	-	15.0	
			1.65 to 1.95	-	4.7	12.0	-	12.2	
			2.3 to 2.7	-	3.1	9.4	-	9.9	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	49.3	-	-	-	ns
			1.10 to 1.30	-	13.3	28.3	-	37.3	
			1.40 to 1.60	-	7.0	15.5	-	16.5	
			1.65 to 1.95	-	5.1	12.6	-	13.6	
			2.3 to 2.7	-	3.4	9.9	-	10.8	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 30 pF	0.9	-	53.6	-	-	-	ns
			1.10 to 1.30	-	14.9	32.4	-	46.3	
			1.40 to 1.60	-	8.3	17.8	-	18.2	
			1.65 to 1.95	-	6.2	14.4	-	15.9	
			2.3 to 2.7	-	4.1	11.3	-	12.8	

New

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	T _A = 25°C			T _A = -40°C to +85°C			Unit
			V _{CC} = 0	Min	Typ	Max	Min	Max	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 10 pF	0.9	-	72.8	-	-	-	ns
			1.10 to 1.30	-	17.2	43.7	-	51.4	
			1.40 to 1.60	-	6.6	14.8	-	15.0	
			1.65 to 1.95	-	4.7	12.0	-	12.2	
			2.3 to 2.7	-	3.1	9.4	-	9.9	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	74.5	-	-	-	ns
			1.10 to 1.30	-	17.7	45.4	-	53.2	
			1.40 to 1.60	-	7.0	15.5	-	16.5	
			1.65 to 1.95	-	5.1	12.6	-	13.6	
			2.3 to 2.7	-	3.4	9.9	-	10.8	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 30 pF	0.9	-	79.6	-	-	-	ns
			1.10 to 1.30	-	19.4	50.3	-	58.8	
			1.40 to 1.60	-	8.3	17.8	-	18.2	
			1.65 to 1.95	-	6.2	14.4	-	15.9	
			2.3 to 2.7	-	4.1	11.3	-	12.8	

- Datasheet Existing vs Updated Comparison for NC7SPU04L6X.

NC7SPU04 – Max Ratings

Existing

Absolute Maximum Ratings (Note 1)

Supply Voltage (V _{CC})	-0.5V to +4.6V
DC Input Voltage (V _{IN})	-0.5V to +4.6V
DC Output Voltage (V _{OUT})	-0.5V to V _{CC} + 0.5V
HIGH or LOW State (Note 2)	-0.5V to 4.6V
V _{CC} = 0V	-0.5V to 4.6V
DC Input Diode Current (I _{IK}) V _{IN} < 0V	±50 mA
DC Output Diode Current (I _{OK})	±50 mA
V _{OUT} > 0V	-50 mA
V _{OUT} < V _{CC}	±50 mA
DC Output Source/Sink Current (I _{OH} /I _{OL})	±50 mA
DC V _{CC} or Ground Current per Supply Pin (I _{CC} or Ground)	±50 mA
Storage Temperature Range (T _{STG})	-65°C to +150°C

Recommended Operating Conditions (Note 3)

Supply Voltage	0.9V to 3.6V
Input Voltage (V _{IN})	0V to 3.6V
Output Voltage (V _{OUT})	0V to V _{CC}
HIGH or LOW State	0V to 3.6V
V _{CC} = 0V	0V to 3.6V
Output Current in I _{OH} /I _{OL}	±2.6 mA
V _{CC} = 3.0V to 3.6V	±2.1 mA
V _{CC} = 2.3V to 2.7V	±1.5 mA
V _{CC} = 1.65V to 1.95V	±1 mA
V _{CC} = 1.40V to 1.60V	±0.5 mA
V _{CC} = 1.10V to 1.30V	±0.5 mA
V _{CC} = 0.9V	±0.5 mA
Free Air Operating Temperature (T _A)	-40°C to +85°C
Minimum Input Edge Rate (ΔV/ΔT)	10 ns/V
V _{IN} = 0.8V to 2.0V, V _{CC} = 3.0V	

New

MAXIMUM RATINGS

Symbol	Parameter	Value	Rating	
V _{CC}	DC Supply Voltage	-0.5 to +4.3	V	
V _{IN}	DC Input Voltage	-0.5 to +4.3	V	
V _{OUT}	DC Output Voltage	-0.5 to V _{CC} + 0.5	V	
I _{IK}	DC Input Diode Current	V _{IN} < GND	±50 mA	
I _{OK}	DC Output Diode Current		±50 mA	
I _{OUT}	DC Output Source/Sink Current		±50 mA	
I _{CC} or I _{GND}	DC Supply Current Per Supply Pin or Ground Pin		±50 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 (Note 2)	SC-88A MicroPak	659 382	°C/W
P _D	Power Dissipation in Still Air at 25°C	SC-88A MicroPak	190 327	mW
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	4000 2000	V
LATCHUP	Latchup Performance (Note 4)		±100	mA

NC7SPU04 – DC Characteristics

Existing

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		T _A = -40°C to +85°C		Units	Conditions
			Min	Max	Min	Max		
V _{IH}	HIGH Level Input Voltage	0.90	0.8 × V _{CC}	0.8 × V _{CC}	0.8 × V _{CC}		V	
		1.10 ≤ V _{CC} ≤ 1.30	0.8 × V _{CC}	0.8 × V _{CC}	0.8 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.60	0.8 × V _{CC}	0.8 × V _{CC}	0.8 × V _{CC}			
		1.65 ≤ V _{CC} ≤ 1.95	0.8 × V _{CC}	0.8 × V _{CC}	0.8 × V _{CC}			
		2.30 ≤ V _{CC} ≤ 2.70	0.8 × V _{CC}	0.8 × V _{CC}	0.8 × V _{CC}			
		3.00 ≤ V _{CC} ≤ 3.60	0.8 × V _{CC}	0.8 × V _{CC}	0.8 × V _{CC}			
V _{IL}	LOW Level Input Voltage	0.90	0.2 × V _{CC}	0.2 × V _{CC}	0.2 × V _{CC}		V	
		1.10 ≤ V _{CC} ≤ 1.30	0.2 × V _{CC}	0.2 × V _{CC}	0.2 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.60	0.2 × V _{CC}	0.2 × V _{CC}	0.2 × V _{CC}			
		1.65 ≤ V _{CC} ≤ 1.95	0.2 × V _{CC}	0.2 × V _{CC}	0.2 × V _{CC}			
		2.30 ≤ V _{CC} ≤ 2.70	0.2 × V _{CC}	0.2 × V _{CC}	0.2 × V _{CC}			
		3.00 ≤ V _{CC} ≤ 3.60	0.2 × V _{CC}	0.2 × V _{CC}	0.2 × V _{CC}			
V _{OH}	HIGH Level Output Voltage	0.90	V _{CC} - 0.2	V _{CC} - 0.2	V _{CC} - 0.2	I _{OH} = -10 μA	V	
		1.10 ≤ V _{CC} ≤ 1.30	V _{CC} - 0.2	V _{CC} - 0.2	V _{CC} - 0.2	I _{OH} = -20 μA		
		1.40 ≤ V _{CC} ≤ 1.60	V _{CC} - 0.2	V _{CC} - 0.2	V _{CC} - 0.2	I _{OH} = -0.5 mA		
		1.65 ≤ V _{CC} ≤ 1.95	V _{CC} - 0.2	V _{CC} - 0.2	V _{CC} - 0.2	I _{OH} = -1 mA		
		2.30 ≤ V _{CC} ≤ 2.70	V _{CC} - 0.2	V _{CC} - 0.2	V _{CC} - 0.2	I _{OH} = -1.5 mA		
		3.00 ≤ V _{CC} ≤ 3.60	V _{CC} - 0.2	V _{CC} - 0.2	V _{CC} - 0.2	I _{OH} = -2.1 mA		
						I _{OH} = -2.6 mA		
V _{OL}	LOW Level Output Voltage	0.90	0.1	0.1	0.1	I _{OL} = 10 μA	V	
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1	0.1	I _{OL} = 20 μA		
		1.40 ≤ V _{CC} ≤ 1.60	0.1	0.1	0.1			
		1.65 ≤ V _{CC} ≤ 1.95	0.1	0.1	0.1			
		2.30 ≤ V _{CC} ≤ 2.70	0.1	0.1	0.1			
		3.00 ≤ V _{CC} ≤ 3.60	0.1	0.1	0.1			
			0.30 × V _{CC}	0.30 × V _{CC}	0.30 × V _{CC}	I _{OL} = 0.5 mA		
			0.31	0.31	0.31	I _{OL} = 1 mA		
			0.31	0.31	0.31	I _{OL} = 1.5 mA		
			0.31	0.31	0.31	I _{OL} = 2.1 mA		
			0.31	0.31	0.31	I _{OL} = 2.6 mA		
I _{IN}	Input Leakage Current	0.90 to 3.60	±0.1	±0.5	±0.5	0 ≤ V _I ≤ 3.6V	μA	
I _{CC}	Quiescent Supply Current	0.90 to 3.60	0.9	0.9	0.9	V _I = V _{CC} or GND	μA	

New

DC ELECTRICAL CHARACTERISTICS											
Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit	
				Min	Typ	Max	Min	Max			
V _{IH}	High-Level Input Voltage	0.9	-	0.9 × V _{CC}	-	-	0.8 × V _{CC}	-	-	V	
		1.1 to 1.3	-	0.8 × V _{CC}	-	-	0.8 × V _{CC}	-	-		
		1.4 to 1.6	-	0.8 × V _{CC}	-	-	0.8 × V _{CC}	-	-		
		1.65 to 1.95	-	0.8 × V _{CC}	-	-	0.8 × V _{CC}	-	-		
		2.3 to 2.7	-	0.8 × V _{CC}	-	-	0.8 × V _{CC}	-	-		
		3.0 to 3.6	-	0.8 × V _{CC}	-	-	0.8 × V _{CC}	-	-		
V _{IL}	Low-Level Input Voltage	0.9	-	0.2 × V _{CC}	-	-	-	-	-	V	
		1.1 to 1.3	-	-	0.2 × V _{CC}	-	-	0.2 × V _{CC}	-	-	
		1.4 to 1.6	-	-	0.2 × V _{CC}	-	-	0.2 × V _{CC}	-	-	
		1.65 to 1.95	-	-	0.2 × V _{CC}	-	-	0.2 × V _{CC}	-	-	
		2.3 to 2.7	-	-	0.2 × V _{CC}	-	-	0.2 × V _{CC}	-	-	
		3.0 to 3.6	-	-	0.2 × V _{CC}	-	-	0.2 × V _{CC}	-	-	
V _{OH}	High-Level Output Voltage	V _{IH} = V _{CC} or GND	0.9	-	V _{CC} - 0.2	-	-	-	-	V	
		I _{OH} = -5 μA	1.1 to 1.3	V _{CC} - 0.2	-	-	V _{CC} - 0.2	-	-		
		I _{OH} = -20 μA	1.4 to 1.6	V _{CC} - 0.2	-	-	V _{CC} - 0.2	-	-		
		1.65 to 1.95	V _{CC} - 0.2	-	-	V _{CC} - 0.2	-	-			
		2.3 to 2.7	V _{CC} - 0.2	-	-	V _{CC} - 0.2	-	-			
		3.0 to 3.6	V _{CC} - 0.2	-	-	V _{CC} - 0.2	-	-			
		I _{OH} = -0.5 mA	1.1 to 1.3	0.75 × V _{CC}	-	-	0.70 × V _{CC}	-	-		
		I _{OH} = -1 mA	1.4 to 1.6	1.07	-	-	0.99	-	-		
		I _{OH} = -1.5 mA	1.65 to 1.95	1.24	-	-	1.22	-	-		
		I _{OH} = -2.1 mA	2.3 to 2.7	1.95	-	-	1.87	-	-		
		I _{OH} = -2.6 mA	3.0 to 3.6	2.61	-	-	2.55	-	-		
		V _{IL}	Low-Level Output Voltage	V _{IL} = V _{CC} or GND	0.9	-	0.2	-	-	-	V
		I _{OL} = 5 μA		1.1 to 1.3	-	-	0.2	-	-	0.2	
		I _{OL} = 20 μA		1.4 to 1.6	-	-	0.2	-	-	0.2	
		1.65 to 1.95		-	-	0.2	-	-	0.2		
2.3 to 2.7	-	-		0.2	-	-	0.2				
3.0 to 3.6	-	-		0.2	-	-	0.2				
I _{OL} = 0.5 mA	1.1 to 1.3	-		-	0.3 × V _{CC}	-	-	0.3 × V _{CC}			
I _{OL} = 1 mA	1.4 to 1.6	-		-	0.31	-	-	0.37			
I _{OL} = 1.5 mA	1.65 to 1.95	-		-	0.31	-	-	0.35			
I _{OL} = 2.1 mA	2.3 to 2.7	-		-	0.31	-	-	0.33			
I _{OL} = 2.6 mA	3.0 to 3.6	-		-	0.31	-	-	0.33			
I _{IN}	Input Leakage Current	V _{IH} = 0 V to 3.6 V		0.9 to 3.6	-	-	±0.1	-	±0.5	μA	
I _{CC}	Quiescent Supply Current	V _{IH} = V _{CC} or GND		0.9 to 3.6	-	-	0.9	-	0.9	μA	

NC7SPU04 – AC Characteristics

Existing

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		T _A = -40°C to +85°C		Units	Conditions	Figure Number	
			Min	Max	Min	Max				
t _{PHL}	Propagation Delay	0.90		27			ns	C _L = 10 pF R _L = 1 MΩ	Figures 1, 2	
		1.10 ≤ V _{CC} ≤ 1.30	3.5	11	21.8	3.0				34.3
		1.40 ≤ V _{CC} ≤ 1.60	2.5	7	14.8	2.0				15.0
		1.65 ≤ V _{CC} ≤ 1.95	2.0	6	12.0	1.5				12.2
		2.30 ≤ V _{CC} ≤ 2.70	1.5	5	9.4	1.0				9.9
		3.00 ≤ V _{CC} ≤ 3.60	1.0	4	8.3	1.0				9.0
t _{PHL}	Propagation Delay	0.90		30			ns	C _L = 15 pF R _L = 1 MΩ	Figures 1, 2	
		1.10 ≤ V _{CC} ≤ 1.30	4.0	11	22.8	3.5				37.3
		1.40 ≤ V _{CC} ≤ 1.60	3.0	8	15.5	2.5				16.5
		1.65 ≤ V _{CC} ≤ 1.95	2.5	6	12.6	2.0				13.6
		2.30 ≤ V _{CC} ≤ 2.70	2.0	5	9.9	1.5				10.8
		3.00 ≤ V _{CC} ≤ 3.60	1.5	4	8.7	1.0				9.5
t _{PHL}	Propagation Delay	0.90		32			ns	C _L = 30 pF R _L = 1 MΩ	Figures 1, 2	
		1.10 ≤ V _{CC} ≤ 1.30	5.0	13	25.9	4.0				46.3
		1.40 ≤ V _{CC} ≤ 1.60	4.0	9	17.8	3.5				18.2
		1.65 ≤ V _{CC} ≤ 1.95	3.0	7	14.4	2.0				15.9
		2.30 ≤ V _{CC} ≤ 2.70	2.0	6	11.3	1.5				12.8
		3.00 ≤ V _{CC} ≤ 3.60	1.5	5	9.2	1.0				10.7

New

AC ELECTRICAL CHARACTERISTICS										
Symbol	Parameter	Test Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit
				Min	Typ	Max	Min	Max		
t _{PHL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ C _L = 10 pF	0.9	-	15.6	-	-	-	-	ns
			1.1 to 1.3	-	8.0	21.8	-	34.3		
			1.4 to 1.6	-	7.0	14.8	-	15.0		
			1.65 to 1.95	-	6.0	12.0	-	12.2		
			2.3 to 2.7	-	5.0	9.4	-	9.9		
			3.0 to 3.6	-	4.0	8.3	-	9.0		
		R _L = 1 MΩ C _L = 15 pF	0.9	-	16.3	-	-	-	-	ns
			1.1 to 1.3	-	9.0	22.8	-	37.3		
			1.4 to 1.6	-	8.0	15.5	-	16.5		
			1.65 to 1.95	-	6.0	12.6	-	13.6		
			2.3 to 2.7	-	5.0	9.9	-	10.8		
			3.0 to 3.6	-	4.0	8.7	-	9.5		
	R _L = 1 MΩ C _L = 30 pF	0.9	-	18.3	-	-	-	-	ns	
		1.1 to 1.3	-	10.0	25.9	-	46.3			
		1.4 to 1.6	-	9.0	17.8	-	18.2			
		1.65 to 1.95	-	7.0	14.4	-	15.9			
		2.3 to 2.7	-	6.0	11.3	-	12.8			
		3.0 to 3.6	-	5.0	9.2	-	10.7			

- Datasheet Existing vs Updated Comparison for NC7SV125L6X.

NC7SV125 - AC Characteristics

Existing

New

AC ELECTRICAL CHARACTERISTICS										
Symbol	Parameter	Condition	V _{CC} = 0V	T _A = 25°C			T _A = -40°C to +85°C			Unit
				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	0.9	-	13	-	-	-	ns	
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	6.0	9.8	-	14.9	-	
			1.4 to 1.6	-	3.5	5.3	-	5.7	-	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	3.0	4.3	-	4.6	-	
			2.3 to 2.7	-	2.0	2.8	-	3.0	-	
			2.7 to 3.6	-	1.0	2.6	-	2.8	-	
t _{2H} , t _{2L}	Output Enable Time, OE to Y (Figures 3 and 4)	R ₁ = R ₂ = 1 kΩ, C _L = 30 pF	0.9	-	14	-	-	-	ns	
			1.1 to 1.3	-	6.0	9.7	-	16.4	-	
			1.4 to 1.6	-	4.0	6.0	-	7.5	-	
			1.65 to 1.95	-	3.0	4.5	-	5.0	-	
			2.3 to 2.7	-	2.0	3.0	-	3.4	-	
			2.7 to 3.6	-	1.2	2.6	-	2.9	-	

AC ELECTRICAL CHARACTERISTICS										
Symbol	Parameter	Condition	V _{CC} = 0V	T _A = 25°C			T _A = -40°C to +85°C			Unit
				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	0.9	-	24.5	-	-	-	ns	
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	6.9	16.2	-	19.0		
			1.4 to 1.6	-	3.5	5.3	-	5.7		
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	3.0	4.3	-	4.6		
			2.3 to 2.7	-	2.0	2.8	-	3.0		
			2.7 to 3.6	-	1.0	2.6	-	2.8		
t _{2H} , t _{2L}	Output Enable Time, OE to Y (Figures 3 and 4)	R ₁ = R _L = 1 kΩ, C _L = 30 pF	0.9	-	21.3	-	-	-	ns	
			1.1 to 1.3	-	6.3	15.5	-	18.3		
			1.4 to 1.6	-	4.0	6.0	-	7.5		
			1.65 to 1.95	-	3.0	4.5	-	5.0		
			2.3 to 2.7	-	2.0	3.0	-	3.4		
			2.7 to 3.6	-	1.2	2.6	-	2.9		

- Datasheet Existing vs Updated Comparison for NC7SV157L6X.

NC7SV157 - AC Characteristics

Existing

New

AC ELECTRICAL CHARACTERISTICS										
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit
				Min	Typ	Max	Min	Max		
t _{PLH} , t _{PHL}	Propagation Delay, (S or I ₀ or I ₁) to Z (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	19.1	-	-	-	ns	
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	6.3	15.5	-	18.8	-	
			1.4 to 1.6	-	3.8	8.5	-	9.5	-	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	3.1	6.7	-	7.5	-	
			2.3 to 2.7	-	2.2	4.1	-	4.4	-	
			2.7 to 3.6	-	1.9	3.4	-	3.6	-	

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C		Unit
				Min	Typ	Max	Min	Max	
t _{PLH} , t _{PHL}	Propagation Delay, (S or I ₀ or I ₁) to Z [†] (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	26.2	-	-	-	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	7.2	17.7	-	20.5	
			1.4 to 1.6	-	3.8	8.5	-	9.5	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	3.1	6.7	-	7.5	
			2.3 to 2.7	-	2.2	4.1	-	4.4	
			2.7 to 3.6	-	1.9	3.4	-	3.6	

- Datasheet Existing vs Updated Comparison for NC7SV34L6X.

NC7SV34 - AC Characteristics

Existing

New

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} = 0.0	T _A = 25°C			T _A = -40°C to +85°C		Unit
				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	0.9	-	11.7	-	-	-	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	4.6	13.0	-	16.9	
			1.4 to 1.6	-	2.8	6.1	-	7.0	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	2.3	5.2	-	6.2	
			2.3 to 2.7	-	1.7	3.7	-	4.4	
			2.7 to 3.6	-	1.4	3.3	-	3.8	

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -55°C to +125°C		Unit
				Min	Typ	Max	Min	Max	
t _{PLH} , t _{PHL}	Propagation Delay, A to Y ¹ (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	-	18.49	-	-	-	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	5.4	13.0	-	16.9	
			1.4 to 1.6	-	2.8	6.1	-	7.0	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	2.3	5.2	-	6.2	
			2.3 to 2.7	-	1.7	3.7	-	4.4	
			2.7 to 3.6	-	1.4	3.3	-	3.8	

- Datasheet Existing vs Updated Comparison for NC7WV17L6X.

NC7WV17 - AC Characteristics

Existing

AC ELECTRICAL CHARACTERISTICS										
Symbol	Parameter	Condition	V _{DD} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit
				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	0.9	-	17.4	-	-	-	-	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	6.1	14.5	-	19.9	-	
			1.4 to 1.6	-	3.9	7.0	-	7.5	-	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	3.3	5.2	-	6.2	-	
			2.3 to 2.7	-	2.6	3.9	-	4.9	-	
			2.7 to 3.6	-	2.2	3.8	-	4.2	-	

New

AC ELECTRICAL CHARACTERISTICS										
Symbol	Parameter	Condition	V _{DD} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit
				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	0.9	-	-	-	-	-	-	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	-	24.5	15.5	-	19.9	-	
			1.4 to 1.6	-	3.9	7.0	-	7.5	-	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.95	-	3.3	5.2	-	6.2	-	
			2.3 to 2.7	-	2.6	3.9	-	4.9	-	
			2.7 to 3.6	-	2.2	3.8	-	4.2	-	

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
NC7SP08L6X	NC7SPU04L6X
NC7SP14L6X	NC7SPU04L6X
NC7SPU04L6X	NC7SPU04L6X
NC7SV125L6X	NC7SPU04L6X
NC7SV157L6X	NC7SPU04L6X
NC7WV17L6X	NC7SPU04L6X
NC7SV34L6X	NC7SPU04L6X