



Final Product/Process Change Notification

Document #: FPCN22964X

Issue Date: 01 Sep 2021

Title of Change:	MiniGates Fab, Assembly Material and Test Change (SC88) with datasheet update.
Proposed First Ship date:	08 Dec 2021 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 or < PCN.samples@onsemi.com >. Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Additional Reliability Data:	Contact your local onsemi Office or ChangKit.Mok@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com
Marking of Parts/ Traceability of Change:	For NC7 parts, the marking style will be different. The CS code on the reel label will be changed from US to JP.
Change Category:	Test Change, Assembly Change, Wafer Fab Change
Change Sub-Category(s):	Manufacturing Site Transfer, Shipping/Packaging/Marking, Datasheet/Product Doc change, Material Change, Manufacturing Process Change

Sites Affected:

onsemi Sites	External Foundry/Subcon Sites
Leshan Phoenix Semiconductor, China	HANA Microelectronics, China
onsemi Cebu, Philippines	Tower Semiconductor, Israel
onsemi Maine, United States	Towerjazz Semiconductor, Japan (Toyama)

Description and Purpose:

FPCN22964X is issued to qualify new die source in Japan for TinyLogic® to increase the front end and back end capacity and standardizing materials.

For NC7 family:

Material to be changed	Before Change (Existing flow)		After Change (New flow)
Assy Site	Subcon China	onsemi Philippines	onsemi Leshan
Wire	Au	Au	Cu
Lead frame	LF SC88 6L 70X86 PPF	LF SC 88 6L C194 STAMPED	SC88 Lead frame with Vgroove
Mold Compound	MC SUMITOMO G600 HF	MC GREEN PA CK5000A 13MMX3.9G	Henkel GR640 HV-L1
Die Attach	DA EPOXY ABLESTICK 2200D	DA EPXY HE ABLESTIK 84-1LMISR4 5CC	Eutectic
Plating	Preplated	100% Sn	100% Sn
Die Source	On South Portland	On South Portland	Foundry Japan

	From		To
	Subcon China	onsemi Philippines	New Flow
Product marking change	针对于: SC70-5L, SC70-6L Year code Week code Pin 1 dot Plant Code (公司代码) Above marking is for subcon China, For onsemi Philippines there will be no plant code identifier		MA = Device Marking M = Date Code* ▪ = Pb-Free Package (Note: Microdot may be in either location) *Date Code orientation and/or position may vary depending upon manufacturing location.

Datasheet Update:

Datasheet Changes:

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.
- Please note that these changes are examples of changes to be made as a family specification. Changes to limits affecting individual part numbers will be noted as such.

There will be other changes that represent a clean-up 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.
- 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.

NC7SP/WP – Absolute Maximum Ratings

Existing Datasheet

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

New

Maximum Ratings

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

NC7SP/NC7WP – DC Input Characteristics

Existing Datasheet NC7SP157/NC7SP157 DC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		T _A = -40°C to +85°C		Units	Conditions
			Min	Max	Min	Max		
V _{IL}	Input Low Voltage	0.80	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	V	
V _{IH}	Input High Voltage	1.12 × V _{CC} ≤ 1.30	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	V	
		1.40 × V _{CC} ≤ 1.80	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}		
		1.65 × V _{CC} ≤ 1.85	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}		
		2.30 × V _{CC} ≤ 2.70	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}		
		3.00 × V _{CC} ≤ 3.60	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}		

NC7SP57/NC7SP58 DC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units
				Min	Max	Min	Max	
V _{TH}	Positive Threshold Voltage	0.80		0.3	0.6	0.2	0.6	V
V _{TL}	Negative Threshold Voltage	1.10		0.4	0.8	0.4	0.8	V
		1.40		0.5	1.2	0.5	1.2	
		1.65		0.7	1.5	0.7	1.5	
		2.30		1.0	1.8	1.0	1.8	
		3.00		1.5	2.6	1.5	2.6	
V _{HY}	Hysteresis Voltage	0.80		0.07	0.3	0.07	0.3	V
V _{OL}	Output Low Voltage	1.10		0.08	0.8	0.08	0.8	V
		1.40		0.08	0.8	0.08	0.8	
		1.65		0.10	1.0	0.10	1.0	
		2.30		0.20	1.1	0.20	1.1	
		3.00		0.40	1.8	0.40	1.8	

Existing Datasheet NC7WP14 DC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	Conditions	T _A = -25°C		T _A = -40°C to +85°C		Units
				Min	Max	Min	Max	
V _{TH}	Positive Threshold Voltage	0.80		0.35	0.65	0.35	0.65	V
V _{TL}	Negative Threshold Voltage	1.10		0.4	1.0	0.4	1.0	V
		1.40		0.5	1.2	0.5	1.2	
		1.65		0.7	1.5	0.7	1.5	
		2.30		1.0	1.8	1.0	1.8	
		3.00		1.5	2.6	1.5	2.6	
V _{HY}	Hysteresis Voltage	0.80		0.07	0.3	0.07	0.3	V
V _{OL}	Output Low Voltage	1.10		0.08	0.8	0.08	0.8	V
		1.40		0.08	0.8	0.08	0.8	
		1.65		0.10	1.0	0.10	1.0	
		2.30		0.20	1.1	0.20	1.1	
		3.00		0.40	1.8	0.40	1.8	

New

DC Electrical Characteristics

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C		T _A = -40°C to +85°C		Units
				Min	Typ	Max	Max	
V _{IL}	Input Low Voltage		0.8	0.05	0.05	0.05	0.05	V
V _{IH}	Input High Voltage		1.12 to 1.3	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	V
			1.40 to 1.6	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	
			1.65 to 1.85	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	
			2.30 to 2.7	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	
			3.00 to 3.6	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	0.05 × V _{CC}	

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C		T _A = -40°C to +85°C		Units
				Min	Typ	Max	Max	
V _{TH}	Positive Threshold Voltage		0.8	0.35	0.35	0.35	0.35	V
V _{TL}	Negative Threshold Voltage		1.1	0.4	0.4	0.4	0.4	V
			1.4	0.5	0.5	0.5	0.5	
			1.65	0.7	0.7	0.7	0.7	
			2.30	1.0	1.0	1.0	1.0	
			3.00 to 3.6	1.5	1.5	1.5	1.5	
V _{HY}	Hysteresis Voltage		0.8	0.07	0.07	0.07	0.07	V
V _{OL}	Output Low Voltage		1.1	0.08	0.08	0.08	0.08	V
			1.4	0.08	0.08	0.08	0.08	
			1.65	0.1	0.1	0.1	0.1	
			2.30	0.20	0.20	0.20	0.20	
			3.00	0.4	0.4	0.4	0.4	

New

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C		T _A = -40°C to +85°C		Units
				Min	Typ	Max	Max	
V _{TH}	Positive Threshold Voltage		0.8	0.35	0.35	0.35	0.35	V
V _{TL}	Negative Threshold Voltage		1.1	0.4	0.4	0.4	0.4	V
			1.4	0.5	0.5	0.5	0.5	
			1.65	0.7	0.7	0.7	0.7	
			2.30	1.0	1.0	1.0	1.0	
			3.00 to 3.6	1.5	1.5	1.5	1.5	
V _{HY}	Hysteresis Voltage		0.8	0.07	0.07	0.07	0.07	V
V _{OL}	Output Low Voltage		1.1	0.08	0.08	0.08	0.08	V
			1.4	0.08	0.08	0.08	0.08	
			1.65	0.1	0.1	0.1	0.1	
			2.30	0.20	0.20	0.20	0.20	
			3.00	0.4	0.4	0.4	0.4	

Existing Datasheet

DC Electrical Characteristics								
Symbol	Parameter	V _{CC} (V)	T _A = -25°C		T _A = -40°C to +85°C		Units	Conditions
			Min	Max	Min	Max		
V _{OH}	High Level	0.90	V _{CC} - 0.1		V _{CC} - 0.1		V	I _{CC} = 20 μA
	Output Voltage	1.10 ≤ V _{CC} ≤ 1.30	V _{CC} - 0.1		V _{CC} - 0.1			
		1.40 ≤ V _{CC} ≤ 1.80	V _{CC} - 0.1		V _{CC} - 0.1			
		1.85 ≤ V _{CC} ≤ 1.95	V _{CC} - 0.1		V _{CC} - 0.1			
		2.30 ≤ V _{CC} ≤ 2.70	V _{CC} - 0.1		V _{CC} - 0.1			
		3.00 ≤ V _{CC} ≤ 3.60	V _{CC} - 0.1		V _{CC} - 0.1			
		1.10 ≤ V _{CC} ≤ 1.30	0.75 × V _{CC}		0.75 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.80	1.07		0.99			
		1.85 ≤ V _{CC} ≤ 1.95	1.24		1.22			
		2.30 ≤ V _{CC} ≤ 2.70	1.45		1.37			
		3.00 ≤ V _{CC} ≤ 3.60	2.61		2.55			
V _{OL}	Low Level	0.90	0.1		0.1		V	I _{CC} = 20 μA
	Output Voltage	1.10 ≤ V _{CC} ≤ 1.30	0.1		0.1			
		1.40 ≤ V _{CC} ≤ 1.80	0.1		0.1			
		1.85 ≤ V _{CC} ≤ 1.95	0.1		0.1			
		2.30 ≤ V _{CC} ≤ 2.70	0.1		0.1			
		3.00 ≤ V _{CC} ≤ 3.60	0.1		0.1			
		1.10 ≤ V _{CC} ≤ 1.30	0.30 × V _{CC}		0.30 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.80	0.37		0.37			
		1.85 ≤ V _{CC} ≤ 1.95	0.37		0.38			
		2.30 ≤ V _{CC} ≤ 2.70	0.37		0.33			
		3.00 ≤ V _{CC} ≤ 3.60	0.37		0.33			

New

DC Electrical Characteristics							
Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Unit
V _{OH}	High-Level Output Voltage	V _{CC} = V _{DDH} V _I I _{CC} = -20 μA	0.9	—	—	—	V
			1.10 to 1.30	—	—	—	
			1.40 to 1.80	—	—	—	
			1.85 to 1.95	—	—	—	
			2.30 to 2.7	—	—	—	
			3.00 to 3.6	—	—	—	
			1.10 to 1.3	0.75 × V _{CC}	—	—	
			1.40 to 1.8	1.07	—	0.99	
			1.85 to 1.95	1.24	—	1.22	
			2.30 to 2.7	1.45	—	1.37	
V _{OL}	Low-Level Output Voltage	V _{CC} = V _{DDH} V _I I _{CC} = 20 μA	0.9	—	0.1	—	V
			1.10 to 1.30	—	0.1	—	
			1.40 to 1.80	—	0.1	—	
			1.85 to 1.95	—	0.1	—	
			2.30 to 2.7	—	0.1	—	
			3.00 to 3.6	—	0.1	—	
			1.10 to 1.3	—	0.3 × V _{CC}	0.3 × V _{CC}	
			1.40 to 1.8	—	0.37	—	
			1.85 to 1.95	—	0.37	—	
			2.30 to 2.7	—	0.37	—	

NC7WP14 – AC Characteristics

Existing Datasheet

AC Electrical Characteristics							
Symbol	Parameter	V _{CC} (V)	T _A = -25°C		T _A = -40°C to +85°C		Units
			Min	Typ	Max	Max	
t _{PLH}	Propagation Delay, A to Y	0.9V	—	21	—	—	ns
		1.10 ≤ V _{CC} ≤ 1.30	3.5	11	28.8	3.0	
		1.40 ≤ V _{CC} ≤ 1.80	3.5	7	16.8	2.0	
		1.85 ≤ V _{CC} ≤ 1.95	3.0	8	12.0	1.0	
		2.30 ≤ V _{CC} ≤ 2.70	1.0	8	8.4	1.0	
		3.00 ≤ V _{CC} ≤ 3.60	1.0	4	6.0	1.0	
t _{PLH}	Propagation Delay, A to Y	0.9V	—	30	—	—	ns
		1.10 ≤ V _{CC} ≤ 1.30	4.0	11	29.8	3.3	
		1.40 ≤ V _{CC} ≤ 1.80	3.0	8	16.8	2.3	
		1.85 ≤ V _{CC} ≤ 1.95	2.0	8	12.0	2.0	
		2.30 ≤ V _{CC} ≤ 2.70	2.0	8	8.4	1.0	
		3.00 ≤ V _{CC} ≤ 3.60	1.0	4	6.7	1.0	
t _{PLH}	Propagation Delay, A to Y	0.9V	—	32	—	—	ns
		1.10 ≤ V _{CC} ≤ 1.30	5.0	13	32.5	4.0	
		1.40 ≤ V _{CC} ≤ 1.80	4.0	9	16.8	3.5	
		1.85 ≤ V _{CC} ≤ 1.95	3.0	7	14.4	2.0	
		2.30 ≤ V _{CC} ≤ 2.70	2.0	8	11.3	1.5	
		3.00 ≤ V _{CC} ≤ 3.60	1.0	8	9.2	1.0	

New

AC ELECTRICAL CHARACTERISTICS							
Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Unit
t _{PLH}	Propagation Delay, A to Y	R _L = 1 MΩ, C _L = 10 pF	0.9	—	21.2	—	ns
			1.10 to 1.30	—	14.0	28.8	
			1.40 to 1.80	—	7.8	16.8	
			1.85 to 1.95	—	5.4	12.0	
			2.30 to 2.7	—	3.7	8.4	
			3.00 to 3.6	—	3.0	6.0	
t _{PLH}	Propagation Delay, A to Y	R _L = 1 MΩ, C _L = 15 pF	0.9	—	30.7	—	ns
			1.10 to 1.30	—	19.0	30.0	
			1.40 to 1.80	—	7.8	16.8	
			1.85 to 1.95	—	5.8	12.0	
			2.30 to 2.7	—	4.0	8.4	
			3.00 to 3.6	—	3.2	6.7	
t _{PLH}	Propagation Delay, A to Y	R _L = 1 MΩ, C _L = 30 pF	0.9	—	39.0	—	ns
			1.10 to 1.30	—	19.2	34.0	
			1.40 to 1.80	—	8.3	16.8	
			1.85 to 1.95	—	6.0	14.4	
			2.30 to 2.7	—	4.7	11.3	
			3.00 to 3.6	—	3.6	9.2	

NC7SP19 – AC Characteristics

Existing Datasheet

AC Electrical Characteristics							
Symbol	Parameter	V _{CC} (V)	T _A = -25°C		T _A = -40°C to +85°C		Units
			Min	Typ	Max	Max	
t _{PLH}	Propagation Delay	0.9V	—	30	—	—	ns
		1.10 ≤ V _{CC} ≤ 1.30	3.5	11	23.4	3.0	
		1.40 ≤ V _{CC} ≤ 1.80	3.0	7	15.1	1.5	
		1.85 ≤ V _{CC} ≤ 1.95	1.5	5	11.5	1.0	
		2.30 ≤ V _{CC} ≤ 2.70	1.0	4	8.1	0.8	
		3.00 ≤ V _{CC} ≤ 3.60	1.0	4	6.6	0.5	
t _{PLH}	Propagation Delay	0.9V	—	32	—	—	ns
		1.10 ≤ V _{CC} ≤ 1.30	4.0	12	24.8	3.0	
		1.40 ≤ V _{CC} ≤ 1.80	3.0	8	16.0	2.0	
		1.85 ≤ V _{CC} ≤ 1.95	2.0	8	12.1	2.0	
		2.30 ≤ V _{CC} ≤ 2.70	1.0	5	8.6	1.0	
		3.00 ≤ V _{CC} ≤ 3.60	1.0	4	7.1	0.5	
t _{PLH}	Propagation Delay	0.9V	—	40	—	—	ns
		1.10 ≤ V _{CC} ≤ 1.30	4.5	14	28.1	4.0	
		1.40 ≤ V _{CC} ≤ 1.80	4.0	9	18.8	3.0	
		1.85 ≤ V _{CC} ≤ 1.95	2.0	7	14.1	2.0	
		2.30 ≤ V _{CC} ≤ 2.70	1.0	5	10.8	1.0	
		3.00 ≤ V _{CC} ≤ 3.60	1.0	4	9.2	0.5	

New

AC ELECTRICAL CHARACTERISTICS							
Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Unit
t _{PLH}	Propagation Delay	R _L = 1 MΩ, C _L = 10 pF	0.9	—	31.4	—	ns
			1.10 to 1.30	—	12.8	28.8	
			1.40 to 1.80	—	8.3	15.1	
			1.85 to 1.95	—	6.2	11.8	
			2.30 to 2.7	—	3.9	8.1	
			3.00 to 3.6	—	3.2	6.6	
t _{PLH}	Propagation Delay	R _L = 1 MΩ, C _L = 15 pF	0.9	—	33.0	—	ns
			1.10 to 1.30	—	19.5	30.0	
			1.40 to 1.80	—	8.7	16.0	
			1.85 to 1.95	—	6.8	12.1	
			2.30 to 2.7	—	5.2	8.6	
			3.00 to 3.6	—	3.5	7.0	
t _{PLH}	Propagation Delay	R _L = 1 MΩ, C _L = 30 pF	0.9	—	37.9	—	ns
			1.10 to 1.30	—	19.0	34.7	
			1.40 to 1.80	—	8.1	16.8	
			1.85 to 1.95	—	5.7	14.1	
			2.30 to 2.7	—	5.0	10.8	
			3.00 to 3.6	—	3.8	9.2	

NC7SP57/58– AC Characteristics

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A = -25°C			T _A = -40°C to +85°C			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max				
t _{PLH}	Propagation Delay	0.90	—	40	—	—	—	—	ns	C _L = 10 pF R _L = 1 MΩ	Figures 11, 12
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	3.5	14	28.0	3.0	31.0				
t _{PLH}		1.40 ≤ V _{CC} ≤ 1.60	4.5	10	17.0	4.0	21.0				
t _{PLH}		1.80 ≤ V _{CC} ≤ 1.90	3.0	8	14.0	3.0	17.0				
t _{PLH}		2.30 ≤ V _{CC} ≤ 2.70	2.0	6	10.0	2.0	13.0				
t _{PLH}		3.00 ≤ V _{CC} ≤ 3.60	1.0	5	9.0	1.0	12.0				

AC 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		
t _{PLH} , t _{PLL}	Propagation Delay 20 nV to 10 mV (Figures 12 and 13)	R _L = 1 MΩ, C _L = 10 pF	0.9	—	34.3	—	—	—	ns	
t _{PLH} , t _{PLL}			1.10 to 1.30	—	15.7	33.8	—	57.0		
t _{PLH} , t _{PLL}			1.40 to 1.60	—	9.2	17.3	—	21.0		
t _{PLH} , t _{PLL}			1.80 to 1.90	—	8.0	14.0	—	17.0		
t _{PLH} , t _{PLL}			2.3 to 2.7	—	6.0	10.0	—	13.0		
t _{PLH} , t _{PLL}			3.0 to 3.6	—	3.4	6.0	—	12.0		
t _{PLH} , t _{PLL}	Propagation Delay, 30 nV to 10 mV (Figures 12 and 13)	R _L = 1 MΩ, C _L = 10 pF	0.9	—	35.8	—	—	59.0	ns	
t _{PLH} , t _{PLL}			1.10 to 1.30	—	15.8	32.7	—	32.0		
t _{PLH} , t _{PLL}			1.40 to 1.60	—	9.8	18.0	—	22.0		
t _{PLH} , t _{PLL}			1.80 to 1.90	—	8.0	15.0	—	18.0		
t _{PLH} , t _{PLL}			2.3 to 2.7	—	6.0	11.0	—	14.0		
t _{PLH} , t _{PLL}			3.0 to 3.6	—	3.9	6.0	—	12.0		
t _{PLH} , t _{PLL}	Propagation Delay, 30 nV to 10 mV (Figures 12 and 13)	R _L = 1 MΩ, C _L = 30 pF	0.9	—	60.2	—	—	—	ns	
t _{PLH} , t _{PLL}			1.10 to 1.30	—	17.2	33.8	—	35.0		
t _{PLH} , t _{PLL}			1.40 to 1.60	—	9.8	20.0	—	24.0		
t _{PLH} , t _{PLL}			1.80 to 1.90	—	7.8	17.0	—	20.0		
t _{PLH} , t _{PLL}			2.3 to 2.7	—	6.0	12.0	—	15.0		
t _{PLH} , t _{PLL}			3.0 to 3.6	—	4.7	11.0	—	14.0		

NC7SP157– AC Characteristics

Existing Datasheet											New											
AC Electrical Characteristics											AC ELECTRICAL CHARACTERISTICS											
Symbol	Parameter	V _{DD} (V)	T _A = 25°C			T _A = -40°C to +85°C			Units	Conditions	Figure Number	Symbol	Parameter	Conditions	V _{DD} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit
			Min	Typ	Max	Min	Max	Min								Typ	Max	Min	Max			
t _{PLH}	Propagation Delay	0.90	30						ns	C _L = 10 pF R _L = 1 MΩ	Figure 1, 2	t _{PLH} , t _{PLH}	Propagation Delay (Z to 1 or 1 to Z) to Z (Figures 3 and 4)	R _L = 1 MΩ, C _L = 10 pF	0.9	54.5	—	—	—	—	ns	
t _{PLH}	Propagation Delay	1.10 ≤ V _{DD} ≤ 1.30	3.5	11	23.4	3.0	30.7	1.10 to 1.30				14.6	32.0	—	37.7							
t _{PLH}	Propagation Delay	1.40 ≤ V _{DD} ≤ 1.60	2.0	7	16.1	1.5	16.8	1.40 to 1.60				7.9	16.1	—	16.0							
t _{PLH}	Propagation Delay	1.80 ≤ V _{DD} ≤ 1.90	1.0	5	11.5	1.0	12.5	1.80 to 1.90				5.4	11.5	—	12.0							
t _{PLH}	Propagation Delay	2.30 ≤ V _{DD} ≤ 2.70	1.0	4	8.1	0.8	9.1	2.30 to 2.7				3.8	8.1	—	9.1							
t _{PLH}	Propagation Delay	3.00 ≤ V _{DD} ≤ 3.60	0.5	3	6.8	0.5	7.7	3.00 to 3.6	2.9	6.8	—	7.7										
t _{PLH}	Propagation Delay	0.90	32						ns	C _L = 15 pF R _L = 1 MΩ	Figure 1, 2	t _{PLH} , t _{PLH}	Propagation Delay (Z to 1 or 1 to Z) to Z (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	55.0	—	—	—	—	ns	
t _{PLH}	Propagation Delay	1.10 ≤ V _{DD} ≤ 1.30	4.0	12	24.8	3.0	30.7	1.10 to 1.30				16.1	33.7	—	30.7							
t _{PLH}	Propagation Delay	1.40 ≤ V _{DD} ≤ 1.60	3.0	8	16.0	2.0	17.2	1.40 to 1.60				9.0	16.0	—	17.2							
t _{PLH}	Propagation Delay	1.80 ≤ V _{DD} ≤ 1.90	2.0	6	12.1	2.0	13.1	1.80 to 1.90				5.8	12.1	—	12.1							
t _{PLH}	Propagation Delay	2.30 ≤ V _{DD} ≤ 2.70	1.0	5	8.8	1.0	8.7	2.3 to 2.7				3.8	8.8	—	9.7							
t _{PLH}	Propagation Delay	3.00 ≤ V _{DD} ≤ 3.60	1.0	4	7.0	0.5	8.1	3.0 to 3.6	3.1	7.0	—	8.1										
t _{PLH}	Propagation Delay	0.90	40						ns	C _L = 30 pF R _L = 1 MΩ	Figure 1, 2	t _{PLH} , t _{PLH}	Propagation Delay (Z to 1 or 1 to Z) to Z (Figures 3 and 4)	R _L = 1 MΩ, C _L = 30 pF	0.9	60.2	—	—	—	—	ns	
t _{PLH}	Propagation Delay	1.10 ≤ V _{DD} ≤ 1.30	4.0	14	28.1	4.0	47.7	1.10 to 1.30				16.7	37.8	—	47.7							
t _{PLH}	Propagation Delay	1.40 ≤ V _{DD} ≤ 1.60	4.0	9	18.8	3.0	19.5	1.40 to 1.60				9.1	18.8	—	19.5							
t _{PLH}	Propagation Delay	1.80 ≤ V _{DD} ≤ 1.90	3.0	7	14.1	2.0	15.3	1.80 to 1.90				6.0	14.1	—	15.3							
t _{PLH}	Propagation Delay	2.30 ≤ V _{DD} ≤ 2.70	1.0	5	10.0	1.0	11.2	2.3 to 2.7				4.5	10.0	—	11.2							
t _{PLH}	Propagation Delay	3.00 ≤ V _{DD} ≤ 3.60	1.0	4	8.0	0.5	9.0	3.0 to 3.6	3.7	8.2	—	9.0										

NC7SV/WV – Absolute Maximum Ratings

Existing Datasheet

Absolute Maximum Ratings (Note 1)

Supply Voltage (V _{CC})	-0.5V to +4.5V
DC Input Voltage (V _{IN})	-0.5V to +4.6V
DC Output Voltage (V _{OUT})	
HIGH or LOW State (Note 2)	-0.5V to V _{CC} + 0.5V
V _{CC} = 0V	-0.5V to +4.6V

New

Maximum Ratings

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

Symbol	Parameter	Rating
V _{CC}	Supply Voltage	-0.5V to +4.6V
V _{IN}	DC Input Voltage	-0.5V to +4.6V
V _{OUT}	DC Output Voltage	
	HIGH or LOW State ⁽¹⁾	-0.5V to V _{CC} + 0.5V
	V _{CC} = 0V	-0.5V to +4.6V

Maximum Ratings

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

NC7SV/WV – Thermal Characteristics

Existing Datasheet

θ_{JA}	Thermal Resistance	SC70-6	425	°C/W
		MicroPak™-6	500	
		MicroPak2™-6	500	
P_D	Power Dissipation at +85°C	MicroPak™-6	130	mW
		SC70-6	150	
		MicroPak2™-6	120	

New

θ_{JA}	Thermal Resistance (Note 2)	SC-88 MicroPak	377 154	°C/W
P_D	Power Dissipation in Still Air	SC-88 MicroPak	332 812	mW

NC7SV/NC7WV– DC Input Characteristics

Existing Datasheet

NC7SV11/NC7SV19/NC7SV157/NC7WV04/NC7WV07/NC7WV16

Symbol	Parameter	V_{CC} (V)	$T_A = -55^{\circ}\text{C}$ Min	$T_A = -55^{\circ}\text{C}$ Typ	$T_A = -55^{\circ}\text{C}$ Max	Units	Conditions
V_{IH}	Input Voltage	0.0	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
V_{IL}	Input Voltage	0.0	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	

New

Symbol	Parameter	Condition	V_{CC} (V)	Min	Typ	Max	Min	Max	Unit
V_{IH}	High-Level Input Voltage		0.0	0.0	0.0	0.0	0.0	V	
			1.1 to 1.2	0.0	0.0	0.0	0.0	V	
			1.4 to 1.5	0.0	0.0	0.0	0.0	V	
			1.8 to 1.9	0.0	0.0	0.0	0.0	V	
			2.0 to 2.1	0.0	0.0	0.0	0.0	V	
V_{IL}	Low-Level Input Voltage		0.0	0.0	0.0	0.0	0.0	V	
			1.1 to 1.2	0.0	0.0	0.0	0.0	V	
			1.4 to 1.5	0.0	0.0	0.0	0.0	V	
			1.8 to 1.9	0.0	0.0	0.0	0.0	V	
			2.0 to 2.1	0.0	0.0	0.0	0.0	V	

NC7WV17

Symbol	Parameter	V_{CC} (V)	$T_A = -55^{\circ}\text{C}$ Min	$T_A = -55^{\circ}\text{C}$ Typ	$T_A = -55^{\circ}\text{C}$ Max	Units	Conditions
V_{IH}	Input Voltage	0.0	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
V_{IL}	Input Voltage	0.0	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	
		1.0 to $V_{DD} - 0.1$	0.0	0.0	0.0	V	

Symbol	Parameter	Condition	V_{CC} (V)	Min	Typ	Max	Min	Max	Unit
V_{IH}	High-Level Input Voltage		0.0	0.0	0.0	0.0	0.0	V	
			1.1	0.0	0.0	0.0	0.0	V	
			1.4	0.0	0.0	0.0	0.0	V	
			1.8	0.0	0.0	0.0	0.0	V	
			2.0	0.0	0.0	0.0	0.0	V	
V_{IL}	Low-Level Input Voltage		0.0	0.0	0.0	0.0	0.0	V	
			1.1	0.0	0.0	0.0	0.0	V	
			1.4	0.0	0.0	0.0	0.0	V	
			1.8	0.0	0.0	0.0	0.0	V	
			2.0	0.0	0.0	0.0	0.0	V	

Existing Datasheet

NC7SV57/NC7SV58/NC7WV14

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Units
				Min	Max	Min	Max	
V_{OH}	Positive Threshold Voltage	1.50		2.25	2.75	2.25	2.75	V
		1.75		2.25	2.75	2.25	2.75	
		1.40		2.25	2.75	2.25	2.75	
		1.80		2.25	2.75	2.25	2.75	
		2.00		2.25	2.75	2.25	2.75	
V_{OL}	Negative Threshold Voltage	0.00		0.15	0.35	0.15	0.35	V
		0.00		0.15	0.35	0.15	0.35	
		1.00		0.15	0.35	0.15	0.35	
		1.40		0.15	0.35	0.15	0.35	
		2.00		0.15	0.35	0.15	0.35	
V_{IL}	Reference Voltage	0.00		0.15	0.35	0.15	0.35	V
		0.00		0.15	0.35	0.15	0.35	
		1.00		0.15	0.35	0.15	0.35	
		1.40		0.15	0.35	0.15	0.35	
		2.00		0.15	0.35	0.15	0.35	

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	$V_{CC} = 3.0V$			$V_{CC} = 4.0V \pm 0.15V$			Unit
			Min	Typ	Max	Min	Max		
V_{OH}	Positive Threshold Voltage		0.0	—	0.05	—	—	—	V
			1.7	—	—	1.5	—	1.9	
			1.4	—	—	1.05	—	1.05	
			1.05	—	—	1.0	—	1.0	
			2.3	—	—	1.0	—	1.0	
V_{OL}	Negative Threshold Voltage		0.0	—	0.0	0.0	0.0	—	V
			0.0	0.15	—	—	0.15	—	
			1.6	0.2	—	—	0.2	—	
			1.05	0.25	—	—	0.25	—	
			0.0	0.1	—	—	0.1	—	
V_{IL}	Reference Voltage		0.0	0.0	—	—	0.0	—	V
			0.0	—	0.05	—	—	—	
			1.1	0.05	—	0.0	0.05	0.1	
			1.4	0.05	—	0.0	0.05	0.1	
			2.05	0.15	—	0.0	0.15	0.1	
V_{IH}	Reference Voltage		0.0	—	0.05	—	—	—	V
			1.1	0.05	—	0.0	0.05	0.1	
			1.4	0.05	—	0.0	0.05	0.1	
			2.05	0.15	—	0.0	0.15	0.1	
			2.0	0.25	—	0.0	0.25	0.1	
V_{TH}	Threshold Voltage		0.0	0.0	—	0.0	0.0	0.0	V
			0.0	—	—	—	—	—	

NC7SV/NC7WV except NC7WV07 – DC Output Characteristics

Existing Datasheet

Symbol	Parameter	V_{CC} (V)	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Units
				Min	Max	Min	Max	
V_{OH}	HIGH Level Output Voltage	0.00		$V_{CC} - 0.1$	$V_{CC} - 0.1$	$V_{CC} - 0.1$	$V_{CC} - 0.1$	V
		1.50 $\leq V_{CC} \leq 1.50$		$V_{CC} - 0.1$	$V_{CC} - 0.1$	$V_{CC} - 0.1$	$V_{CC} - 0.1$	
		1.40 $\leq V_{CC} \leq 1.60$		$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	
		1.65 $\leq V_{CC} \leq 1.95$		$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	
		2.30 $\leq V_{CC} \leq 2.70$		$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	
		2.70 $\leq V_{CC} \leq 3.00$		$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	$V_{CC} - 0.2$	
		1.50 $\leq V_{CC} \leq 1.50$	$I_{OH} = -100 \mu\text{A}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	
		1.40 $\leq V_{CC} \leq 1.60$	$I_{OH} = -100 \mu\text{A}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	
		1.65 $\leq V_{CC} \leq 1.95$	$I_{OH} = -100 \mu\text{A}$	1.25	1.25	1.25	1.25	
		2.30 $\leq V_{CC} \leq 2.70$	$I_{OH} = -100 \mu\text{A}$	2.0	2.0	2.0	2.0	
		2.70 $\leq V_{CC} \leq 3.00$	$I_{OH} = -100 \mu\text{A}$	2.2	2.2	2.2	2.2	
		1.50 $\leq V_{CC} \leq 1.50$	$I_{OH} = -2 \text{ mA}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	
		1.40 $\leq V_{CC} \leq 1.60$	$I_{OH} = -2 \text{ mA}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	
		1.65 $\leq V_{CC} \leq 1.95$	$I_{OH} = -2 \text{ mA}$	1.25	1.25	1.25	1.25	
		2.30 $\leq V_{CC} \leq 2.70$	$I_{OH} = -2 \text{ mA}$	2.0	2.0	2.0	2.0	
V_{OL}	LOW Level Output Voltage	0.00		0.1	0.1	0.1	0.1	V
		1.50 $\leq V_{CC} \leq 1.50$		0.1	0.1	0.1	0.1	
		1.40 $\leq V_{CC} \leq 1.60$		0.2	0.2	0.2	0.2	
		1.65 $\leq V_{CC} \leq 1.95$		0.2	0.2	0.2	0.2	
		2.30 $\leq V_{CC} \leq 2.70$		0.2	0.2	0.2	0.2	
		2.70 $\leq V_{CC} \leq 3.00$		0.2	0.2	0.2	0.2	
		1.50 $\leq V_{CC} \leq 1.50$	$I_{OL} = 2 \text{ mA}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	
		1.40 $\leq V_{CC} \leq 1.60$	$I_{OL} = 2 \text{ mA}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	
		1.65 $\leq V_{CC} \leq 1.95$	$I_{OL} = 2 \text{ mA}$	0.3	0.3	0.3	0.3	
		2.30 $\leq V_{CC} \leq 2.70$	$I_{OL} = 2 \text{ mA}$	0.4	0.4	0.4	0.4	
		2.70 $\leq V_{CC} \leq 3.00$	$I_{OL} = 2 \text{ mA}$	0.4	0.4	0.4	0.4	
		1.50 $\leq V_{CC} \leq 1.50$	$I_{OL} = 4 \text{ mA}$	0.3	0.3	0.3	0.3	
		1.40 $\leq V_{CC} \leq 1.60$	$I_{OL} = 4 \text{ mA}$	0.4	0.4	0.4	0.4	
		1.65 $\leq V_{CC} \leq 1.95$	$I_{OL} = 4 \text{ mA}$	0.4	0.4	0.4	0.4	
		2.30 $\leq V_{CC} \leq 2.70$	$I_{OL} = 4 \text{ mA}$	0.4	0.4	0.4	0.4	

New

Symbol	Parameter	Condition	$V_{CC} (V)$	Min	Typ	Max	Min	Max	Units
V_{OH}	High-Level Output Voltage	$V_{OH} = V_{CC} - V_{OL}$		0.0	0.1	0.1	0.0	0.1	V
		$I_{OH} = -100 \mu\text{A}$		0.0	0.1	0.1	0.0	0.1	
		$I_{OH} = -100 \mu\text{A}$		1.1 to 1.3	$V_{CC} - 0.1$	$V_{CC} - 0.1$	1.1 to 1.3	$V_{CC} - 0.1$	
		$I_{OH} = -100 \mu\text{A}$		1.4 to 1.6	$V_{CC} - 0.1$	$V_{CC} - 0.1$	1.4 to 1.6	$V_{CC} - 0.1$	
		$I_{OH} = -100 \mu\text{A}$		1.65 to 1.95	$V_{CC} - 0.1$	$V_{CC} - 0.1$	1.65 to 1.95	$V_{CC} - 0.1$	
		$I_{OH} = -100 \mu\text{A}$		2.3 to 2.7	$V_{CC} - 0.1$	$V_{CC} - 0.1$	2.3 to 2.7	$V_{CC} - 0.1$	
		$I_{OH} = -2 \text{ mA}$		0.75 to 0.75	$V_{CC} - 0.2$	$V_{CC} - 0.2$	0.75 to 0.75	$V_{CC} - 0.2$	
		$I_{OH} = -2 \text{ mA}$		2.7 to 2.7	$V_{CC} - 0.2$	$V_{CC} - 0.2$	2.7 to 2.7	$V_{CC} - 0.2$	
		$I_{OH} = -4 \text{ mA}$		1.1 to 1.3	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	1.1 to 1.3	$0.75 \times V_{CC}$	
		$I_{OH} = -4 \text{ mA}$		1.4 to 1.6	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	1.4 to 1.6	$0.75 \times V_{CC}$	
		$I_{OH} = -6 \text{ mA}$		1.65 to 1.95	$0.75 \times V_{CC}$	$0.75 \times V_{CC}$	1.65 to 1.95	$0.75 \times V_{CC}$	
		$I_{OH} = -12 \text{ mA}$		2.3 to 2.7	1.7	1.7	2.3 to 2.7	1.7	
		$I_{OH} = -18 \text{ mA}$		2.7 to 2.7	1.7	1.7	2.7 to 2.7	1.7	
		$I_{OH} = -24 \text{ mA}$		2.7 to 2.7	1.7	1.7	2.7 to 2.7	1.7	
		$I_{OH} = -30 \text{ mA}$		2.7 to 2.7	1.7	1.7	2.7 to 2.7	1.7	
V_{OL}	Low-Level Output Voltage	$V_{OH} = V_{CC} - V_{OL}$		0.0	0.1	0.1	0.0	0.1	V
		$I_{OL} = 100 \mu\text{A}$		0.0	0.1	0.1	0.0	0.1	
		$I_{OL} = 100 \mu\text{A}$		1.1 to 1.3	—	—	0.1	—	
		$I_{OL} = 100 \mu\text{A}$		1.4 to 1.6	—	—	0.1	—	
		$I_{OL} = 100 \mu\text{A}$		1.65 to 1.95	—	—	0.2	—	
		$I_{OL} = 100 \mu\text{A}$		2.3 to 2.7	—	—	0.2	—	
		$I_{OL} = 2 \text{ mA}$		0.75 to 0.75	—	—	0.2	—	
		$I_{OL} = 2 \text{ mA}$		2.7 to 2.7	—	—	0.2	—	
		$I_{OL} = 4 \text{ mA}$		1.1 to 1.3	—	—	$0.25 \times V_{CC}$	—	
		$I_{OL} = 4 \text{ mA}$		1.4 to 1.6	—	—	$0.25 \times V_{CC}$	—	
		$I_{OL} = 6 \text{ mA}$		1.65 to 1.95	—	—	$0.25 \times V_{CC}$	—	
		$I_{OL} = 12 \text{ mA}$		2.3 to 2.7	—	—	0.4	—	
		$I_{OL} = 18 \text{ mA}$		2.7 to 2.7	—	—	0.4	—	
		$I_{OL} = 24 \text{ mA}$		2.7 to 2.7	—	—	0.4	—	
		$I_{OL} = 30 \text{ mA}$		2.7 to 2.7	—	—	0.4	—	

NC7WV07 – DC Output Characteristics

Existing Datasheet

Symbol	Parameter	V_{CC}	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Units
				Min	Max	Min	Max	
V_{OH}	HIGH Level Output Voltage	0.00		0.1	0.1	0.1	0.1	V
		1.50 $\leq V_{CC} \leq 1.50$		0.1	0.1	0.1	0.1	
		1.40 $\leq V_{CC} \leq 1.60$		0.2	0.2	0.2	0.2	
		1.65 $\leq V_{CC} \leq 1.95$		0.2	0.2	0.2	0.2	
		2.30 $\leq V_{CC} \leq 2.70$		0.2	0.2	0.2	0.2	
		2.70 $\leq V_{CC} \leq 3.00$		0.2	0.2	0.2	0.2	
		1.50 $\leq V_{CC} \leq 1.50$	$I_{OH} = 2 \text{ mA}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	
		1.40 $\leq V_{CC} \leq 1.60$	$I_{OH} = 2 \text{ mA}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	$0.25 \times V_{CC}$	
		1.65 $\leq V_{CC} \leq 1.95$	$I_{OH} = 2 \text{ mA}$	0.3	0.3	0.3	0.3	
		2.30 $\leq V_{CC} \leq 2.70$	$I_{OH} = 2 \text{ mA}$	0.4	0.4	0.4	0.4	
		2.70 $\leq V_{CC} \leq 3.00$	$I_{OH} = 2 \text{ mA}$	0.4	0.4	0.4	0.4	
		1.50 $\leq V_{CC} \leq 1.50$	$I_{OH} = 4 \text{ mA}$	0.3	0.3	0.3	0.3	
		1.40 $\leq V_{CC} \leq 1.60$	$I_{OH} = 4 \text{ mA}$	0.4	0.4	0.4	0.4	
		1.65 $\leq V_{CC} \leq 1.95$	$I_{OH} = 4 \text{ mA}$	0.4	0.4	0.4	0.4	
		2.30 $\leq V_{CC} \leq 2.70$	$I_{OH} = 4 \text{ mA}$	0.4	0.4	0.4	0.4	

New

Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C			Unit
				Min	Typ	Max	Min	Max		
V _{OL}	Low-Level Output Voltage	V _{OL} = V _{CC} × V _{OL}		0.0	0.1	0.1	0.0	0.1		
		I _{OL} = 100 µA		0.0	0.1	0.1	0.0	0.1		
		0.0 to 1.0	—	—	0.1	—	0.1			
		1.0 to 3.0	—	—	0.1	—	0.1			
		3.0 to 5.0	—	—	0.2	—	0.2			
		5.0 to 10	—	—	0.2	—	0.2			
		10 to 15	—	—	0.2	—	0.2			
		15 to 3.0	—	—	0.2	—	0.2			
		I _{OL} = 0 mA	1.0 to 1.5	—	0.25 × V _{CC}	—	0.25 × V _{CC}			
		I _{OL} = 4 mA	1.4 to 3.0	—	0.28 × V _{CC}	—	0.28 × V _{CC}			
		I _{OL} = 6 mA	1.6 to 3.0	—	0.30 × V _{CC}	—	0.30 × V _{CC}			
		I _{OL} = 10 mA	2.0 to 3.0	—	0.4	—	0.4			

NC7WV14-AC Characteristics

Existing Datasheet

Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure Number
				Min	Typ	Max	Min		
t _{PLH} , t _{PLH}	Propagation Delay	0.00	C _L = 15 pF, R _L = 1 MΩ	12				ns	Figure 1
		1.10 ≤ V _{CC} ≤ 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	8.8	14.5	1.0	10.0	Figure 2
		1.40 ≤ V _{CC} ≤ 1.60		1.0	3.2	6.3	0.0	7.0	
		1.65 ≤ V _{CC} ≤ 1.85	C _L = 30 pF, R _L = 200 Ω	1.0	2.0	3.2	0.1	6.2	
		2.30 ≤ V _{CC} ≤ 2.70		0.0	1.0	3.7	0.0	4.4	
		2.70 ≤ V _{CC} ≤ 3.60		0.7	1.5	3.3	0.0	3.8	

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	Max	
t _{PLH} , t _{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	18.7	—	—	—	—	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	8.0	12.2	—	—	16.8	
			1.4 to 1.6	—	3.8	8.3	—	—	7.0	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.85	—	3.2	5.2	—	—	6.2	
			2.3 to 2.7	—	2.0	3.7	—	—	4.4	
			2.7 to 3.6	—	2.2	3.3	—	—	3.8	

NC7WV07-AC Characteristics

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40 to +85°C		Units	Figure Number
				Min	Typ	Max	Min		
t _{PLH} , t _{PLH}	Propagation Delay	0.00	C _L = 15 pF, R _L = 1 MΩ	12				ns	Figure 4
		1.10 ≤ V _{CC} ≤ 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	0.0	15.0	1.0	15.0	Figure 5
		1.40 ≤ V _{CC} ≤ 1.60		1.0	3.2	6.7	1.0	9.7	
		1.65 ≤ V _{CC} ≤ 1.85	C _L = 30 pF, R _L = 200 Ω	1.0	2.0	3.2	0.1	6.2	
		2.30 ≤ V _{CC} ≤ 2.70		0.7	1.2	3.8	0.0	4.7	
		2.70 ≤ V _{CC} ≤ 3.60		0.9	1.0	3.3	0.4	4.3	

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	Max	
t _{PLH} , t _{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	14.4	—	—	—	—	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	5.1	15.0	—	—	18.6	
			1.4 to 1.6	—	3.8	8.7	—	—	8.7	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.85	—	2.4	6.0	—	—	6.8	
			2.3 to 2.7	—	1.9	3.8	—	—	4.7	
			2.7 to 3.6	—	1.8	3.3	—	—	4.3	

NC7SV11-AC Characteristics

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure Number
				Min	Typ	Max	Min		
t _{PLH} , t _{PLH}	Propagation Delay	0.00	C _L = 15 pF, R _L = 1 MΩ	12				ns	Figure 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	8.8	14.5	1.0	10.0	
		1.40 ≤ V _{CC} ≤ 1.60		1.0	3.2	6.3	0.0	7.0	
		1.65 ≤ V _{CC} ≤ 1.85	C _L = 30 pF, R _L = 200 Ω	1.0	2.0	3.2	0.1	6.2	
		2.30 ≤ V _{CC} ≤ 2.70		0.0	1.0	3.7	0.0	4.4	
		2.70 ≤ V _{CC} ≤ 3.60		0.7	1.5	3.3	0.0	3.8	

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	Max	
t _{PLH} , t _{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	14.4	—	—	—	—	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	5.0	17.0	—	—	18.2	
			1.4 to 1.6	—	3.8	10.2	—	—	12.0	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.85	—	2.7	7.3	—	—	8.2	
			2.3 to 2.7	—	2.0	3.2	—	—	3.9	
			2.7 to 3.6	—	1.7	4.0	—	—	4.8	

NC7SV57/58-AC Characteristics

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40 to +85°C		Units	Figure Number
				Min	Typ	Max	Min		
t _{PLH} , t _{PLH}	Propagation Delay	0.00	C _L = 15 pF, R _L = 1 MΩ	12				ns	Figure 15
		1.10 ≤ V _{CC} ≤ 1.30	C _L = 15 pF, R _L = 2 kΩ	4.0	8.8	14.5	3.3	31.0	Figure 16
		1.40 ≤ V _{CC} ≤ 1.60		2.0	3.2	6.3	2.0	12.0	
		1.65 ≤ V _{CC} ≤ 1.85	C _L = 30 pF, R _L = 200 Ω	2.0	4.0	6.2	1.0	10.0	
		2.30 ≤ V _{CC} ≤ 2.70		1.0	3.1	6.2	1.4	6.7	
		2.70 ≤ V _{CC} ≤ 3.60		1.0	3.3	6.4	1.2	6.1	

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	Max	
t _{PLH} , t _{PLH}	Propagation Delay, (5 to 6 or 7) to 2 (Figures 12 and 13)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	22.2	—	—	—	—	ns
		R _L = 2 kΩ, C _L = 15 pF	1.10 to 1.30	—	7.1	16.5	—	—	21.0	
			1.40 to 1.60	—	4.4	10.0	—	—	12.0	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.85	—	3.7	8.1	—	—	10.0	
			2.3 to 2.7	—	2.9	6.2	—	—	6.7	
			2.7 to 3.6	—	2.4	5.4	—	—	6.1	

NC7SV157-AC Characteristics

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure Number
				Min	Typ	Max	Min		
t _{PLH} , t _{PLH}	Propagation Delay	0.00	C _L = 15 pF, R _L = 1 MΩ	12				ns	Figure 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	C _L = 15 pF, R _L = 2 kΩ	3.0	8.8	14.5	3.2	18.0	
		1.40 ≤ V _{CC} ≤ 1.60		2.0	3.2	6.3	1.0	9.5	
		1.65 ≤ V _{CC} ≤ 1.85	C _L = 30 pF, R _L = 200 Ω	1.0	2.0	3.2	1.2	7.2	
		2.30 ≤ V _{CC} ≤ 2.70		1.0	2.1	6.2	0.8	4.4	
		2.70 ≤ V _{CC} ≤ 3.60		0.8	1.0	3.4	0.7	3.8	

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	Max	
t _{PLH} , t _{PLH}	Propagation Delay, (3 to 4 or 5) to 2 (Figures 1 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	18.7	—	—	—	—	ns
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	8.0	15.5	—	—	18.8	
			1.4 to 1.6	—	3.8	8.3	—	—	9.5	
		R _L = 500 Ω, C _L = 30 pF	1.65 to 1.85	—	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	—	—	3.8	

NC7SV19-- AC Characteristics

Existing Datasheet

AC Electrical Characteristics										
Symbol	Parameter	V _{CC} (V)	T _A = -25°C			T _A = -40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PLH}	Propagation Delay	0.30	ns					ns	C _L = 15 pF, R _L = 1 MΩ	Figure 1.2
t _{PLH}	0 to 2	1.10 ≤ V _{CC} ≤ 1.30	3.0	8	13.0	2.2	18.0			
		1.40 ≤ V _{CC} ≤ 1.80	3.0	4	9.0	1.8	9.0			
		1.80 ≤ V _{CC} ≤ 1.90	1.0	3	6.7	1.2	7.5			
		2.30 ≤ V _{CC} ≤ 2.70	1.0	2	4.1	0.8	4.4			
		2.70 ≤ V _{CC} ≤ 3.00	0.8	1.5	3.4	0.7	3.8			

New

AC ELECTRICAL CHARACTERISTICS							
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Min
t _{PLH}	Propagation Delay, (0 to 1, or 1 to 2) (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	16.6	—	—
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	6.2	—	18.0
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.8	—	3.2	—	9.5
			1.85 to 1.95	—	3.7	—	7.5
			2.3 to 2.7	—	2.3	—	4.4
			2.7 to 3.0	—	1.7	—	3.8

NC7WV04-- AC Characteristics

Existing Datasheet

AC Electrical Characteristics										
Symbol	Parameter	V _{CC} (V)	T _A = -25°C			T _A = -40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PLH}	Propagation Delay	0.30	ns						C _L = 15 pF, R _L = 1 MΩ	Figure 1.2
t _{PLH}	1 to 2	1.10 ≤ V _{CC} ≤ 1.30	3.0	6	12.1	1.0	14.9		C _L = 10 pF, R _L = 2 kΩ	
		1.40 ≤ V _{CC} ≤ 1.80	1.0	3.2	5.4	0.9	8.0			
		1.80 ≤ V _{CC} ≤ 1.90	1.0	3.0	4.8	0.7	5.2			
		2.30 ≤ V _{CC} ≤ 2.70	0.8	1.8	3.8	0.8	3.8			
		2.70 ≤ V _{CC} ≤ 3.00	0.7	1.6	3.0	0.5	3.5			
			ns							
			ns						C _L = 30 pF R _L = 500 Ω	

New

AC ELECTRICAL CHARACTERISTICS							
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Min
t _{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	17.4	—	—
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	4.8	—	14.9
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.8	—	3.8	—	8.0
			1.85 to 1.95	—	3.5	—	5.2
			2.3 to 2.7	—	1.8	—	3.8
			2.7 to 3.0	—	1.6	—	3.5

NC7WV16-- AC Characteristics

Existing Datasheet

AC Electrical Characteristics										
Symbol	Parameter	V _{CC} (V)	T _A = -25°C			T _A = -40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PLH}	Propagation Delay	0.30	ns							
t _{PLH}	1 to 2	1.10 ≤ V _{CC} ≤ 1.30	3.0	6.8	13.0	1.8	17.9	ns	C _L = 15 pF, R _L = 150 Ω	Figure 1.2
		1.40 ≤ V _{CC} ≤ 1.80	1.0	3.2	6.8	0.8	7.8		C _L = 15 pF, R _L = 2 kΩ	
		1.80 ≤ V _{CC} ≤ 1.90	1.0	3.0	6.2	0.7	6.2		C _L = 30 pF, R _L = 500 Ω	
		2.30 ≤ V _{CC} ≤ 2.70	0.8	1.8	3.7	0.8	4.4			
		2.70 ≤ V _{CC} ≤ 3.00	0.7	1.6	3.3	0.8	3.8			

New

AC ELECTRICAL CHARACTERISTICS							
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Min
t _{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	12.8	—	—
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	4.1	—	17.9
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.8	—	3.7	—	7.8
			1.85 to 1.95	—	3.5	—	6.2
			2.3 to 2.7	—	1.8	—	4.4
			2.7 to 3.0	—	1.6	—	3.8

NC7WV17-- AC Characteristics

Existing Datasheet

AC Electrical Characteristics										
Symbol	Parameter	V _{CC} (V)	T _A = -25°C			T _A = -40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t _{PLH}	Propagation Delay	0.30	ns					ns	C _L = 15 pF, R _L = 1 MΩ C _L = 10 pF C _L = 30 pF R _L = 500 Ω	Figure 1.7
t _{PLH}	1 to 2	1.10 ≤ V _{CC} ≤ 1.30	3.0	5.8	14.3	1.8	18.9			
		1.40 ≤ V _{CC} ≤ 1.80	1.0	3.2	7.0	0.9	7.8			
		1.80 ≤ V _{CC} ≤ 1.90	1.0	3.0	6.2	0.7	6.2			
		2.30 ≤ V _{CC} ≤ 2.70	0.8	1.8	3.9	0.8	4.6			
		2.70 ≤ V _{CC} ≤ 3.00	0.7	1.6	3.3	0.5	4.2			

New

AC ELECTRICAL CHARACTERISTICS							
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C
				Min	Typ	Max	Min
t _{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.9	—	17.2	—	—
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	5.1	—	18.9
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.8	—	3.8	—	7.8
			1.85 to 1.95	—	3.3	—	6.2
			2.3 to 2.7	—	2.6	—	4.6
			2.7 to 3.0	—	2.3	—	4.2



Final Product/Process Change Notification

Document #: FPCN22964X

Issue Date: 01 Sep 2021

Reliability Data Summary:

QV DEVICE NAME: NL17SG373ADFT2G

RMS: S72646 / S65396 / S51765

PACKAGE: SC88

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	2016 hrs	0/240
TC + PC	JESD22-A104	Ta= -65°C to + 150°C	1000 cyc	0/240
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs	0/240
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/240
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/720

Electrical Characteristics Summary:

Electrical characteristics available upon request.

List of Affected Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the [PCN Customized Portal](#).

Part Number	Qualification Vehicle
NC7WV16P6X	NL17SG373ADFT2G
NC7SP57P6X	NL17SG373ADFT2G
NC7WV04P6X	NL17SG373ADFT2G
NC7SV157P6X	NL17SG373ADFT2G
NC7SV57P6X	NL17SG373ADFT2G
NC7WV14P6X	NL17SG373ADFT2G
NC7WP14P6X	NL17SG373ADFT2G
NC7SV19P6X	NL17SG373ADFT2G
NC7SP157P6X	NL17SG373ADFT2G
NC7SP58P6X	NL17SG373ADFT2G
NC7WV17P6X	NL17SG373ADFT2G
NC7SV58P6X	NL17SG373ADFT2G
NC7WV07P6X	NL17SG373ADFT2G
NC7SV11P6X	NL17SG373ADFT2G
NC7SP19P6X	NL17SG373ADFT2G
NL17SG373ADFT2G	NL17SG373ADFT2G

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

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

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

最終製品/プロセス変更通知

文書番号: FPCN22964X

発行日: 01 Sep 2021

変更件名:	データシート更新を伴う MiniGates のウエハー工場、組立拠点と材料、およびテスト変更 (SC88)		
初回出荷予定日:	2021 年 12 月 08 日またはお客様からの承認が得られた場合はそれ以前.		
連絡先情報:	現地のオンセミ営業所または< logic.fpcn@onsemi.com >にお問い合わせください。		
サンプル:	現地のオンセミ営業所または < PCN.Samples@onsemi.com >にお問い合わせください。 サンプルは、この変更の初回 PCN または最終 PCN の最初の通知 の日付から 30 日以内に要求してください。 サンプル納入時は、依頼日、数量、特別梱包材/ラベル条件によって異なります。		
追加の信頼性データ:	お客さまの地域のオンセミ営業所または< ChangKit.Mok@onsemi.com >にお問い合わせください。		
通知種別:	これは、お客様宛の最終製品 / プロセス変更通知(FPCN)です。FPCN は、変更実施の 90 日前に発行されます。 オンセミは、この通知の送付から 30 日以内に書面による問い合わせがない限り、この変更が承諾されたものとみなします。 お問い合わせは、< PCN.Support@onsemi.com > 宛てにお願いします。		
変更部品の識別:	NC7 製品では、マーキングスタイルは異なるものになります。リールラベルの CSコードは US から JP に変更されます。		
変更カテゴリ: テストの変更, アセンブリの変更, ウェハファブの変更			
変更サブカテゴリ: 製造拠点の移管, 出荷/梱包/マーキング, データシート/製品資料の変更, 材料の変更, 製造プロセスの変更			
影響を受ける拠点:			
オン・セミコンダクター拠点:		外部製造工場 / 下請業者拠点:	
Leshan Phoenix Semiconductor, China		HANA Microelectronics, China	
onsemi Cebu, Philippines		Tower Semiconductor, Israel	
onsemi Maine, United States		Towerjazz Semiconductor, Japan (Toyama)	
説明および目的:			
FPCN22964X は、前工程および後工程の生産能力拡大のため、また材料を標準化するために、TinyLogic®の日本における新規のダイソースを認定することを目的として発行されます。			
NC7 ファミリー向け:			
変更される材料	変更前の表記 (既存のフロー)		変更後の表記 (新規フロー)
組み立て拠点	Subcon China	onsemi Philippines	onsemi Leshan
ワイヤ	Au	Au	Cu
リードフレーム	LF SC88 6L 70X86 PPF	LF SC 88 6L C194 STAMPED	SC88 Lead frame with Vgroove
モールド・コンパウンド	MC SUMITOMO G600 HF	MC GREEN PA CK5000A 13MMX3.9G	Henkel GR640 HV-L1
ダイ接着剤	DA EPOXY ABLESTICK 2200D	DA EPXY HE ABLESTIK 84-1LMISR4 5CC	Eutectic
メッキ	Preplated	100% Sn	100% Sn
ダイソース	On South Portland	On South Portland	Foundry Japan

	変更前		変更後
	サブコン中国	オンセミフィリピン	新規フロー
製品マーキング変更	針対子: SC70-5L, SC70-6L Year code Week code Pin 1 dot Plant Code (公司代码) 上記のマーキングはサブコン中国向けです。オンセミフィリピンについては、プラントコード識別子はありせん。		MA = Device Marking M = Date Code* Pb-free symbol = Pb-free Package (Note: Microdot may be in either location) *Date Code orientation and/or position may vary depending upon manufacturing location.

データシートの更新:

データシートの変更:

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。
- これらの変更はファミリー仕様として加えられる変更の例ですのでご注意ください。個々の製品番号に影響を及ぼす規格への変更はそうに記述されます。

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。
- スイッチング波形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、お客様にさらなる情報を提供するための、デバイス注文情報の書式設定。

NC7SP/WP – 絶対最大定格

Existing Datasheet

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC})	-0.5V to +4.5V
DC Input Voltage (V_{in})	-0.5V to +4.5V
DC Output Voltage (V_{out})	-0.5V to $V_{CC} + 0.5V$
HIGH or LOW State (Note 2)	-0.5V to +4.5V
$V_{CC} = 0V$	-0.5V to +4.5V

New

Maximum Ratings

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

NC7SP/NC7WP – DC 入力特性

Existing Datasheet

NC7SP19/NC7SP157

DC Electrical Characteristics

Symbol	Parameter	V_{DD} (V)	$T_A = -55^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to }+85^{\circ}\text{C}$		Units	Conditions
			Min	Max	Min	Max		
V_{IH}	Input Level	0.90	$0.85 \times V_{DD}$		$0.85 \times V_{DD}$			
V_{IL}	Input Voltage	$1.12 \times V_{DD} \leq 1.30$	$0.85 \times V_{DD}$		$0.85 \times V_{DD}$		V	
		$1.40 \times V_{DD} \leq 1.80$	$0.85 \times V_{DD}$		$0.85 \times V_{DD}$			
		$1.85 \times V_{DD} \leq 1.85$	$0.85 \times V_{DD}$		$0.85 \times V_{DD}$			
		$2.30 \times V_{DD} \leq 2.70$	1.8		1.8			
		$3.00 \times V_{DD} \leq 3.80$	2.1		2.1			
V_{OL}	Output Level	0.90	$0.35 \times V_{DD}$		$0.35 \times V_{DD}$			
V_{IL}	Input Voltage	$1.12 \times V_{DD} \leq 1.30$	$0.35 \times V_{DD}$		$0.35 \times V_{DD}$		V	
		$1.40 \times V_{DD} \leq 1.80$	$0.35 \times V_{DD}$		$0.35 \times V_{DD}$			
		$1.85 \times V_{DD} \leq 1.85$	$0.35 \times V_{DD}$		$0.35 \times V_{DD}$			
		$2.30 \times V_{DD} \leq 2.70$	0.7		0.7			
		$3.00 \times V_{DD} \leq 3.80$	0.9		0.9			

NC7SP57/NC7SP58

DC Electrical Characteristics

Symbol	Parameter	V_{DD} (V)	Conditions	$T_A = +25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to }+85^{\circ}\text{C}$		Units
				Min	Max	Min	Max	
V_{th}	Positive Threshold Voltage	0.90		0.3	0.4	0.2	0.3	V
		1.10		0.4	0.6	0.3	0.5	
		1.40		0.5	1.2	0.3	1.2	
		1.85		0.7	1.5	0.7	1.5	
		2.30		1.0	1.9	1.0	1.9	
V_{th}	Negative Threshold Voltage	0.90		0.3	0.5	0.2	0.3	V
		1.10		0.15	0.7	0.15	0.7	
		1.40		0.2	0.9	0.2	0.9	
		1.85		0.25	0.9	0.25	0.9	
		2.30		0.4	1.05	0.4	1.15	
V_{th}	Hysteresis Voltage	0.90		0.0	1.3	0.0	1.5	V
		1.10		0.07	0.5	0.07	0.5	
		1.40		0.08	0.8	0.08	0.8	
		1.85		0.10	1.0	0.10	1.0	
		2.30		0.25	1.1	0.25	1.1	

Existing Datasheet

NC7WP14

DC Electrical Characteristics

Symbol	Parameter	V_{DD} (V)	$T_A = -55^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to }+85^{\circ}\text{C}$		Units	Conditions
			Min	Max	Min	Max		
V_{th}	Positive Threshold Voltage	0.90	0.35	0.55	0.35	0.65	V	
		1.10	0.4	1.0	0.4	1.0		
		1.40	0.5	1.2	0.5	1.2		
		1.85	0.7	1.5	0.7	1.5		
		2.30	1.0	1.9	1.0	1.9		
V_{th}	Negative Threshold Voltage	0.90	0.1	0.6	0.1	0.5	V	
		1.10	0.15	0.7	0.15	0.7		
		1.40	0.2	0.9	0.2	0.9		
		1.85	0.25	0.9	0.25	0.9		
		2.30	0.4	1.15	0.4	1.15		
V_{th}	Hysteresis Voltage	0.90	0.0	1.3	0.0	1.5	V	
		1.10	0.07	0.5	0.07	0.5		
		1.40	0.08	0.8	0.08	0.8		
		1.85	0.10	1.0	0.10	1.0		
		2.30	0.25	1.1	0.25	1.1		

New

DC Electrical Characteristics

Symbol	Parameter	Condition	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to }+85^{\circ}\text{C}$		Units
				Min	Typ	Max	Min	Max	
V_{IH}	High-Level Input Voltage		0.9		0.9				V
			$1.1 \text{ to } 1.3$	$0.85 \times V_{DD}$			$0.85 \times V_{DD}$		
			$1.4 \text{ to } 1.6$	$0.85 \times V_{DD}$			$0.85 \times V_{DD}$		
			$1.85 \text{ to } 1.95$	$0.85 \times V_{DD}$			$0.85 \times V_{DD}$		
			$2.3 \text{ to } 2.7$	1.8			1.8		
V_{IL}	Low-Level Input Voltage		0.9		0.9				V
			$1.1 \text{ to } 1.3$			$0.85 \times V_{DD}$		$0.85 \times V_{DD}$	
			$1.4 \text{ to } 1.6$			$0.85 \times V_{DD}$		$0.85 \times V_{DD}$	
			$1.85 \text{ to } 1.95$			$0.85 \times V_{DD}$		$0.85 \times V_{DD}$	
			$2.3 \text{ to } 2.7$			0.7		0.7	

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to }+85^{\circ}\text{C}$		Units
				Min	Typ	Max	Min	Max	
V_{th}	Positive Threshold Voltage		0.9		0.9				V
			1.1		1.1				
			1.4		1.2				
			1.85		1.6				
			2.3 to 2.8		1.9				
V_{th}	Negative Threshold Voltage		0.9		0.9				V
			1.1		0.15				
			1.4		0.2				
			1.85		0.25				
			2.3		0.4				
V_{th}	Hysteresis Voltage		0.9		0.25				V
			1.1		0.08				
			1.4		0.09				
			1.85		0.1				
			2.3		0.25				

New

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to }+85^{\circ}\text{C}$		Units
				Min	Typ	Max	Min	Max	
V_{th}	Positive Threshold Voltage		0.9		0.9				V
			1.1			1.0		1.0	
			1.4			1.2		1.2	
			1.85			1.6		1.6	
			2.3			1.9		1.9	
V_{th}	Negative Threshold Voltage		0.9		0.9				V
			1.1		0.15			0.15	
			1.4		0.2			0.2	
			1.85		0.25			0.25	
			2.3		0.4			0.4	
V_{th}	Hysteresis Voltage		0.9		0.25				V
			1.1		0.08			0.08	
			1.4		0.09			0.09	
			1.85		0.1			0.1	
			2.3		0.25			0.25	

Existing Datasheet

DC Electrical Characteristics						
Symbol	Parameter	V_{DD} (V)	$T_A = -25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$	
			Min	Typ	Max	Units
V _{OL}	Output Voltage	0.0V	0.0	0.1	0.1	V
		1.10 $\pm$ V _{DD} $\pm$ 1.80	V _{DD} - 0.1	V _{DD} - 0.1	V _{DD} - 0.1	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	V _{DD} - 0.1	V _{DD} - 0.1	V _{DD} - 0.1	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	V _{DD} - 0.1	V _{DD} - 0.1	V _{DD} - 0.1	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	V _{DD} - 0.1	V _{DD} - 0.1	V _{DD} - 0.1	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	V _{DD} - 0.1	V _{DD} - 0.1	V _{DD} - 0.1	
		1.10 $\pm$ V _{DD} $\pm$ 1.80	0.70 $\pm$ V _{DD}	0.70 $\pm$ V _{DD}	0.70 $\pm$ V _{DD}	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	1.20	1.20	1.20	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	1.20	1.20	1.20	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	1.20	1.20	1.20	
V _{OH}	Output Voltage	0.0V	0.1	0.1	0.1	V
		1.10 $\pm$ V _{DD} $\pm$ 1.80	0.1	0.1	0.1	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	0.1	0.1	0.1	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	0.1	0.1	0.1	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	0.1	0.1	0.1	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	0.1	0.1	0.1	
		1.10 $\pm$ V _{DD} $\pm$ 1.80	0.00 $\pm$ V _{DD}	0.00 $\pm$ V _{DD}	0.00 $\pm$ V _{DD}	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	0.00	0.00	0.00	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	0.00	0.00	0.00	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	0.00	0.00	0.00	

New

DC Electrical Characteristics						
Symbol	Parameter	Conditions	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$
				Min	Typ	Max
V _{OL}	High-Level Output Voltage	V _{OL} = 20 μ A	0.0	0.1	0.1	0.1
			1.10 $\pm$ 1.2	0.1	0.1	0.1
			1.40 $\pm$ 1.8	0.1	0.1	0.1
			1.65 $\pm$ 1.8	0.1	0.1	0.1
			2.30 $\pm$ 2.7	0.1	0.1	0.1
			3.00 $\pm$ 3.6	0.1	0.1	0.1
			1.10 $\pm$ 1.2	0.70 $\pm$ V _{DD}	0.70 $\pm$ V _{DD}	0.70 $\pm$ V _{DD}
			1.40 $\pm$ 1.8	1.20	1.20	1.20
			1.65 $\pm$ 1.8	1.20	1.20	1.20
			2.30 $\pm$ 2.7	1.20	1.20	1.20
V _{OH}	Low-Level Output Voltage	V _{OH} = 20 μ A	0.0	0.1	0.1	0.1
			1.10 $\pm$ 1.2	0.1	0.1	0.1
			1.40 $\pm$ 1.8	0.1	0.1	0.1
			1.65 $\pm$ 1.8	0.1	0.1	0.1
			2.30 $\pm$ 2.7	0.1	0.1	0.1
			3.00 $\pm$ 3.6	0.1	0.1	0.1
			1.10 $\pm$ 1.2	0.00 $\pm$ V _{DD}	0.00 $\pm$ V _{DD}	0.00 $\pm$ V _{DD}
			1.40 $\pm$ 1.8	0.00	0.00	0.00
			1.65 $\pm$ 1.8	0.00	0.00	0.00
			2.30 $\pm$ 2.7	0.00	0.00	0.00

NC7WP14 - AC 特性

Existing Datasheet

AC Electrical Characteristics						
Symbol	Parameter	V_{DD} (V)	$T_A = -25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$	
			Min	Typ	Max	Units
t _{PLH}	Propagation Delay, A to Y	0.0V	0.0	0.1	0.1	ns
		1.10 $\pm$ V _{DD} $\pm$ 1.80	3.0	11	38.0	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	3.0	7	15.1	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	3.0	6	12.0	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	3.0	6	8.4	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	3.0	6	6.2	
t _{PLH}	Propagation Delay, A to Y	0.0V	0.0	0.1	0.1	ns
		1.10 $\pm$ V _{DD} $\pm$ 1.80	4.0	11	38.0	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	3.0	7	15.1	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	3.0	6	12.0	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	3.0	6	8.4	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	3.0	6	6.2	
t _{PLH}	Propagation Delay, A to Y	0.0V	0.0	0.1	0.1	ns
		1.10 $\pm$ V _{DD} $\pm$ 1.80	0.0	12	32.0	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	4.0	9	18.0	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	3.0	7	14.4	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	2.0	6	11.3	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	1.0	6	9.2	

New

AC ELECTRICAL CHARACTERISTICS						
Symbol	Parameter	Condition	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$
				Min	Typ	Max
t _{PLH}	Propagation Delay, A to Y (Figures 4 and 5)	R _L = 1 M Ω , C _L = 10 pF	0.0	0.1	0.1	0.1
			1.10 to 1.20	14.0	38.0	37.0
			1.40 to 1.60	7.0	15.0	15.0
			1.65 to 1.85	6.0	12.0	12.0
			2.3 to 2.7	5.7	8.4	8.4
			3.0 to 3.6	5.0	6.3	6.0
t _{PLH}	Propagation Delay, A to Y (Figures 4 and 5)	R _L = 1 M Ω , C _L = 15 pF	0.0	0.1	0.1	0.1
			1.10 to 1.20	19.0	38.0	38.0
			1.40 to 1.60	7.0	15.0	15.0
			1.65 to 1.85	6.0	12.0	12.0
			2.3 to 2.7	4.0	8.4	10.0
			3.0 to 3.6	3.0	6.7	9.0
t _{PLH}	Propagation Delay, A to Y (Figures 4 and 5)	R _L = 1 M Ω , C _L = 30 pF	0.0	0.1	0.1	0.1
			1.10 to 1.20	19.0	38.0	40.0
			1.40 to 1.60	6.0	15.0	15.0
			1.65 to 1.85	6.0	14.4	15.0
			2.3 to 2.7	4.7	11.3	10.0
			3.0 to 3.6	3.6	8.2	10.7

NC7SP19 - AC 特性

Existing Datasheet

AC Electrical Characteristics						
Symbol	Parameter	V_{DD} (V)	$T_A = -25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$	
			Min	Typ	Max	Units
t _{PLH}	Propagation Delay	0.0V	0.0	0.1	0.1	ns
		1.10 $\pm$ V _{DD} $\pm$ 1.80	3.0	11	38.0	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	3.0	7	15.1	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	3.0	6	12.0	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	3.0	6	8.4	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	3.0	6	6.2	
t _{PLH}	Propagation Delay	0.0V	0.0	0.1	0.1	ns
		1.10 $\pm$ V _{DD} $\pm$ 1.80	4.0	12	38.0	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	3.0	7	15.1	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	3.0	6	12.0	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	3.0	6	8.4	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	3.0	6	6.2	
t _{PLH}	Propagation Delay	0.0V	0.0	0.1	0.1	ns
		1.10 $\pm$ V _{DD} $\pm$ 1.80	0.0	14	28.0	
		1.40 $\pm$ V _{DD} $\pm$ 1.80	4.0	9	18.0	
		1.65 $\pm$ V _{DD} $\pm$ 1.80	3.0	7	14.4	
		2.30 $\pm$ V _{DD} $\pm$ 2.70	2.0	6	10.0	
		3.00 $\pm$ V _{DD} $\pm$ 3.60	1.0	6	8.2	

New

AC ELECTRICAL CHARACTERISTICS						
Symbol	Parameter	Condition	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$		$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$
				Min	Typ	Max
t _{PLH}	Propagation Delay (Figures 3 and 4)	R _L = 1 M Ω , C _L = 10 pF	0.0	0.1	0.1	0.1
			1.10 to 1.20	12.0	38.0	37.0
			1.40 to 1.60	6.0	15.1	15.0
			1.65 to 1.85	4.2	11.3	12.0
			2.3 to 2.7	3.0	8.4	8.1
			3.0 to 3.6	2.0	6.6	7.7
t _{PLH}	Propagation Delay (Figures 3 and 4)	R _L = 1 M Ω , C _L = 15 pF	0.0	0.1	0.1	0.1
			1.10 to 1.20	13.0	38.0	38.7
			1.40 to 1.60	6.7	15.0	17.2
			1.65 to 1.85	4.8	12.1	13.1
			2.3 to 2.7	3.0	8.8	8.7
			3.0 to 3.6	2.0	7.0	8.1
t _{PLH}	Propagation Delay (Figures 3 and 4)	R _L = 1 M Ω , C _L = 30 pF	0.0	0.1	0.1	0.1
			1.10 to 1.20	15.0	34.7	40.0
			1.40 to 1.60	6.1	15.0	19.0
			1.65 to 1.85	5.7	14.1	15.0
			2.3 to 2.7	3.9	10.0	11.0
			3.0 to 3.6	3.0	8.2	9.0

NC7SP57/58- AC 特性

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A = -25 °C			T _A = -40 °C to +85 °C			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max				
t _{PLH}	Propagation Delay	0.90		40					ns	C _L = 10 pF R _L = 1 MΩ	Figures 11, 12
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	3.5	14	28.0	3.0	31.0				
		1.40 ≤ V _{CC} ≤ 1.60	4.5	16	17.0	4.0	25.0				
		1.80 ≤ V _{CC} ≤ 1.95	3.5	8	14.0	3.0	17.0				
		2.30 ≤ V _{CC} ≤ 2.70	2.5	8	10.0	2.0	13.0				
3.00 ≤ V _{CC} ≤ 3.60	3.0	8	9.0	1.0	12.0						
t _{PLH}	Propagation Delay	0.90		41					ns	C _L = 10 pF R _L = 1 MΩ	Figures 11, 12
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	8.0	16	29.0	6.0	32.0				
		1.40 ≤ V _{CC} ≤ 1.60	9.0	16	18.0	4.5	22.0				
		1.80 ≤ V _{CC} ≤ 1.95	4.0	8	15.0	3.5	18.0				
		2.30 ≤ V _{CC} ≤ 2.70	3.0	8	11.0	2.5	14.0				
3.00 ≤ V _{CC} ≤ 3.60	2.0	8	9.0	1.5	12.0						
t _{PLH}	Propagation Delay	0.90		40					ns	C _L = 30 pF R _L = 1 MΩ	Figures 11, 12
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	7.0	17	32.0	6.5	35.0				
		1.40 ≤ V _{CC} ≤ 1.60	8.5	17	20.0	9.0	24.0				
		1.80 ≤ V _{CC} ≤ 1.95	4.0	8	17.0	4.0	20.0				
		2.30 ≤ V _{CC} ≤ 2.70	3.5	7	12.0	3.0	15.0				
3.00 ≤ V _{CC} ≤ 3.60	3.0	8	11.0	2.0	14.0						

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}	Propagation Delay (Y or Z to V or V to Y or Z)	R _L = 1 MΩ, C _L = 10 pF	0.9		34.3				ns	
t _{PLH}			1.10 to 1.30		15.7	32.8		37.2	ns	
			1.40 to 1.60		8.2	17.3		21.0		
			1.80 to 1.95		8.8	14.3		17.0		
			2.3 to 2.7		4.0	10.0		13.0		
			3.0 to 3.6		3.4	9.0		12.0		
t _{PLH}	Propagation Delay (Y or Z to V or V to Y or Z)	R _L = 1 MΩ, C _L = 10 pF	0.9		35.8				ns	
t _{PLH}			1.10 to 1.30		15.8	32.7		37.0	ns	
			1.40 to 1.60		8.8	18.0		22.0		
			1.80 to 1.95		8.0	16.0		19.0		
			2.3 to 2.7		4.2	11.0		14.0		
			3.0 to 3.6		3.6	9.0		12.0		
t _{PLH}	Propagation Delay (Y or Z to V or V to Y or Z)	R _L = 1 MΩ, C _L = 30 pF	0.9		89.2				ns	
t _{PLH}			1.10 to 1.30		17.2	33.8		38.0	ns	
			1.40 to 1.60		9.8	20.0		24.0		
			1.80 to 1.95		7.8	17.0		20.0		
			2.3 to 2.7		9.0	12.0		16.0		
			3.0 to 3.6		4.1	11.0		14.0		

NC7SP157- AC 特性

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A = -25 °C			T _A = -40 °C to +85 °C			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max				
t _{PLH}	Propagation Delay	0.90		30					ns	C _L = 10 pF R _L = 1 MΩ	Figures 1, 2
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	3.2	11	23.4	3.0	30.7				
		1.40 ≤ V _{CC} ≤ 1.60	2.0	7	16.1	1.8	19.6				
		1.80 ≤ V _{CC} ≤ 1.95	1.2	5	11.3	1.0	12.5				
		2.30 ≤ V _{CC} ≤ 2.70	1.0	4	8.1	0.8	9.1				
3.00 ≤ V _{CC} ≤ 3.60	1.0	3	6.6	0.5	7.7						
t _{PLH}	Propagation Delay	0.90		32					ns	C _L = 15 pF R _L = 1 MΩ	Figures 1, 3
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	4.0	12	24.8	3.0	30.7				
		1.40 ≤ V _{CC} ≤ 1.60	3.0	8	18.0	2.0	17.2				
		1.80 ≤ V _{CC} ≤ 1.95	2.0	6	12.1	2.0	13.1				
		2.30 ≤ V _{CC} ≤ 2.70	1.0	5	8.0	1.0	8.7				
3.00 ≤ V _{CC} ≤ 3.60	1.0	4	7.0	0.5	8.1						
t _{PLH}	Propagation Delay	0.90		40					ns	C _L = 30 pF R _L = 1 MΩ	Figures 1, 2
t _{PLH}		1.10 ≤ V _{CC} ≤ 1.30	4.2	14	26.1	4.0	47.7				
		1.40 ≤ V _{CC} ≤ 1.60	4.0	8	18.0	2.0	19.5				
		1.80 ≤ V _{CC} ≤ 1.95	2.0	7	14.1	2.0	16.3				
		2.30 ≤ V _{CC} ≤ 2.70	1.0	5	10.0	1.0	11.2				
3.00 ≤ V _{CC} ≤ 3.60	1.0	4	8.2	0.5	9.5						

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}	Propagation Delay (Y or Z to V or V to Y or Z)	R _L = 1 MΩ, C _L = 10 pF	0.9		34.5				ns	
t _{PLH}			1.10 to 1.30		14.8	32.3		37.7	ns	
			1.40 to 1.60		7.9	16.1		16.6		
			1.80 to 1.95		3.4	11.3		12.5		
			2.3 to 2.7		3.0	8.1		9.1		
			3.0 to 3.6		2.9	6.6		7.7		
t _{PLH}	Propagation Delay (Y or Z to V or V to Y or Z)	R _L = 1 MΩ, C _L = 15 pF	0.9		35.8				ns	
t _{PLH}			1.10 to 1.30		15.1	33.7		38.7	ns	
			1.40 to 1.60		8.0	18.0		17.2		
			1.80 to 1.95		3.8	12.1		13.1		
			2.3 to 2.7		3.0	8.8		9.7		
			3.0 to 3.6		3.1	7.9		8.1		
t _{PLH}	Propagation Delay (Y or Z to V or V to Y or Z)	R _L = 1 MΩ, C _L = 30 pF	0.9		89.2				ns	
t _{PLH}			1.10 to 1.30		16.7	37.8		47.7	ns	
			1.40 to 1.60		8.3	18.6		19.5		
			1.80 to 1.95		4.0	14.1		16.3		
			2.3 to 2.7		4.5	10.0		11.2		
			3.0 to 3.6		3.7	8.2		9.5		

NC7SV/WV - 絶対最大定格

Existing Datasheet

Absolute Maximum Ratings (Note 1)

Supply Voltage (V _{CC})	-0.5V to +4.5V
DC Input Voltage (V _{IN})	-0.5V to +4.5V
DC Output Voltage (V _{OUT})	
HIGH or LOW State (Note 2)	-0.5V to V _{CC} + 0.5V
V _{CC} = 0V	-0.5V to +4.5V

Symbol	Parameter	Rating
V _{CC}	Supply Voltage	-0.5V to +4.5V
V _{IN}	DC Input Voltage	-0.5V to +4.5V
V _{OUT}	DC Output Voltage (HIGH or LOW state) ⁽¹⁾ V _{CC} = 0V	-0.5V to V _{CC} + 0.5V -0.5V to +4.5V

New

Maximum Ratings

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

Maximum Ratings

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

NC7SV/WV – 熱特性

Existing Datasheet

θ_{JA}	Thermal Resistance	SC70-6	425	°C/W
		MicroPak™-6	500	
		MicroPak2™-6	560	
P_D	Power Dissipation at +85°C	MicroPak™-6	130	mW
		SC70-6	150	
		MicroPak2™-6	120	

New

θ_{JA}	Thermal Resistance (Note 2)	SC-88 MicroPak	377 154	°C/W
P_D	Power Dissipation in Still Air	SC-88 MicroPak	332 812	mW

NC7SV/NC7WV– DC入力特性

Existing Datasheet

NC7SV11/NC7SV19/NC7SV157/NC7WV04/NC7WV07/NC7WV16

DC Electrical Characteristics						
Symbol	Parameter	V_{DD} (V)	$T_A = -40^{\circ}\text{C}$ Min	$T_A = 25^{\circ}\text{C}$ Typ	$T_A = 85^{\circ}\text{C}$ Max	Units
V_{IH}	Input Voltage	1.40 $\pm$ 0.05 1.40 $\pm$ 0.05 1.40 $\pm$ 0.05 1.40 $\pm$ 0.05 1.40 $\pm$ 0.05	0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05	0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05	0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05	V
V_{IL}	Input Voltage	0.90 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05 0.90 $\pm$ 0.05	0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05	0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05	0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05 0.40 $\pm$ 0.05	V

New

DC ELECTRICAL CHARACTERISTICS						
Symbol	Parameter	Conditions	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$ Min	$T_A = 25^{\circ}\text{C}$ Typ	$T_A = 25^{\circ}\text{C}$ Max
V_{IH}	High-Level Input Voltage		0.9	0.9	0.9	0.9
			1.1 to 1.5	0.90 $\pm$ 0.05	0.90 $\pm$ 0.05	0.90 $\pm$ 0.05
			1.4 to 1.8	0.90 $\pm$ 0.05	0.90 $\pm$ 0.05	0.90 $\pm$ 0.05
			1.40 to 1.80	0.90 $\pm$ 0.05	0.90 $\pm$ 0.05	0.90 $\pm$ 0.05
			2.3 to 2.7	0.9	0.9	0.9
			2.7 to 3.6	0.9	0.9	0.9
V_{IL}	Low-Level Input Voltage		0.9	0.4	0.4	0.4
			1.1 to 1.5	0.40 $\pm$ 0.05	0.40 $\pm$ 0.05	0.40 $\pm$ 0.05
			1.4 to 1.8	0.40 $\pm$ 0.05	0.40 $\pm$ 0.05	0.40 $\pm$ 0.05
			1.40 to 1.80	0.40 $\pm$ 0.05	0.40 $\pm$ 0.05	0.40 $\pm$ 0.05
			2.3 to 2.7	0.4	0.4	0.4
			2.7 to 3.6	0.4	0.4	0.4

NC7WV17

DC Electrical Characteristics						
Symbol	Parameter	V_{DD} (V)	$T_A = -40^{\circ}\text{C}$ Min	$T_A = 25^{\circ}\text{C}$ Typ	$T_A = 85^{\circ}\text{C}$ Max	Units
V_{IH}	Input Voltage	0.90 1.10 1.40 1.80 2.30 2.70	0.40 0.40 0.40 0.40 0.40 0.40	0.40 0.40 0.40 0.40 0.40 0.40	0.40 0.40 0.40 0.40 0.40 0.40	V
V_{IL}	Input Voltage	0.40 0.40 0.40 0.40 0.40 0.40	0.10 0.10 0.10 0.10 0.10 0.10	0.10 0.10 0.10 0.10 0.10 0.10	0.10 0.10 0.10 0.10 0.10 0.10	V
V_{OL}	Output Voltage	0.40 0.40 0.40 0.40 0.40 0.40	0.10 0.10 0.10 0.10 0.10 0.10	0.10 0.10 0.10 0.10 0.10 0.10	0.10 0.10 0.10 0.10 0.10 0.10	V

DC ELECTRICAL CHARACTERISTICS						
Symbol	Parameter	Conditions	V_{DD} (V)	$T_A = 25^{\circ}\text{C}$ Min	$T_A = 25^{\circ}\text{C}$ Typ	$T_A = 25^{\circ}\text{C}$ Max
V_{IH}	Input Voltage		0.9	0.9	0.9	0.9
			1.1	0.9	0.9	0.9
			1.4	0.9	0.9	0.9
			1.80	0.9	0.9	0.9
			2.3	0.9	0.9	0.9
			2.7	0.9	0.9	0.9
V_{IL}	Input Voltage		0.9	0.4	0.4	0.4
			1.1	0.4	0.4	0.4
			1.4	0.4	0.4	0.4
			1.80	0.4	0.4	0.4
			2.3	0.4	0.4	0.4
			2.7	0.4	0.4	0.4
V_{OL}	Output Voltage		0.9	0.1	0.1	0.1
			1.1	0.1	0.1	0.1
			1.4	0.1	0.1	0.1
			1.80	0.1	0.1	0.1
			2.3	0.1	0.1	0.1
			2.7	0.1	0.1	0.1

Existing Datasheet

NC7SV57/NC7SV58/NC7WV14

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Units
				Min	Max	Min	Max	
V_{OH}	Positive Threshold Voltage	2.00		2.00	2.00	2.00	2.00	V
		1.70		1.60	1.60	1.60	1.60	
		1.40		1.30	1.30	1.30	1.30	
		1.20		1.10	1.10	1.10	1.10	
		0.90		0.80	0.80	0.80	0.80	
V_{OL}	Negative Threshold Voltage	0.00		0.00	0.00	0.00	0.00	V
		1.10		0.90	0.90	0.90	0.90	
		1.40		1.30	1.30	1.30	1.30	
		1.70		1.60	1.60	1.60	1.60	
		2.00		1.90	1.90	1.90	1.90	
V_{IL}	Reference Voltage	0.00		0.00	0.00	0.00	0.00	V
		1.10		0.90	0.90	0.90	0.90	
		1.40		1.30	1.30	1.30	1.30	
		1.70		1.60	1.60	1.60	1.60	
		2.00		1.90	1.90	1.90	1.90	

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Unit
			Min	Typ	Min	Max	
V_{OH}	Positive Threshold Voltage	$V_{OH} = V_{OH} \text{ or } V_{OH}$	1.7	1.7	1.6	1.6	V
V_{OL}	Negative Threshold Voltage	$V_{OL} = V_{OL} \text{ or } V_{OL}$	0.9	0.9	0.8	0.8	V
V_{IL}	Reference Voltage	$V_{IL} = V_{IL} \text{ or } V_{IL}$	0.9	0.9	0.8	0.8	V

NC7SV/NC7WV (NC7WV07を除く) – DC 出力特性

Existing Datasheet

Symbol	Parameter	V_{CC} (V)	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Units
				Min	Max	Min	Max	
V_{OH}	Output Voltage	0.00	$V_{OH} = 0.1$	0.1	0.1	0.1	0.1	V
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.1$	0.1	0.1	0.1	0.1	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.2$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.3$	0.3	0.3	0.3	0.3	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.4$	0.4	0.4	0.4	0.4	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.5$	0.5	0.5	0.5	0.5	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.6$	0.6	0.6	0.6	0.6	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.7$	0.7	0.7	0.7	0.7	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.8$	0.8	0.8	0.8	0.8	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 0.9$	0.9	0.9	0.9	0.9	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 1.0$	1.0	1.0	1.0	1.0	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 1.1$	1.1	1.1	1.1	1.1	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 1.2$	1.2	1.2	1.2	1.2	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 1.3$	1.3	1.3	1.3	1.3	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OH} = 1.4$	1.4	1.4	1.4	1.4	
V_{OL}	Output Voltage	0.00	$V_{OL} = 0.1$	0.1	0.1	0.1	0.1	V
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.1$	0.1	0.1	0.1	0.1	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.2$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.3$	0.3	0.3	0.3	0.3	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.4$	0.4	0.4	0.4	0.4	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.5$	0.5	0.5	0.5	0.5	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.6$	0.6	0.6	0.6	0.6	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.7$	0.7	0.7	0.7	0.7	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.8$	0.8	0.8	0.8	0.8	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 0.9$	0.9	0.9	0.9	0.9	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 1.0$	1.0	1.0	1.0	1.0	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 1.1$	1.1	1.1	1.1	1.1	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 1.2$	1.2	1.2	1.2	1.2	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 1.3$	1.3	1.3	1.3	1.3	
		1.40 $\pm V_{CC} \pm 1.30$	$V_{OL} = 1.4$	1.4	1.4	1.4	1.4	

New

Symbol	Parameter	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Unit
			Min	Typ	Min	Max	
V_{OH}	High-Level Output Voltage	$V_{OH} = V_{OH} \text{ or } V_{OH}$	1.7	1.7	1.6	1.6	V
		$V_{OH} = 0.1$	0.1	0.1	0.1	0.1	
		$V_{OH} = 0.2$	0.2	0.2	0.2	0.2	
		$V_{OH} = 0.3$	0.3	0.3	0.3	0.3	
		$V_{OH} = 0.4$	0.4	0.4	0.4	0.4	
		$V_{OH} = 0.5$	0.5	0.5	0.5	0.5	
		$V_{OH} = 0.6$	0.6	0.6	0.6	0.6	
		$V_{OH} = 0.7$	0.7	0.7	0.7	0.7	
		$V_{OH} = 0.8$	0.8	0.8	0.8	0.8	
		$V_{OH} = 0.9$	0.9	0.9	0.9	0.9	
		$V_{OH} = 1.0$	1.0	1.0	1.0	1.0	
		$V_{OH} = 1.1$	1.1	1.1	1.1	1.1	
		$V_{OH} = 1.2$	1.2	1.2	1.2	1.2	
		$V_{OH} = 1.3$	1.3	1.3	1.3	1.3	
		$V_{OH} = 1.4$	1.4	1.4	1.4	1.4	
V_{OL}	Low-Level Output Voltage	$V_{OL} = V_{OL} \text{ or } V_{OL}$	0.9	0.9	0.8	0.8	V
		$V_{OL} = 0.1$	0.1	0.1	0.1	0.1	
		$V_{OL} = 0.2$	0.2	0.2	0.2	0.2	
		$V_{OL} = 0.3$	0.3	0.3	0.3	0.3	
		$V_{OL} = 0.4$	0.4	0.4	0.4	0.4	
		$V_{OL} = 0.5$	0.5	0.5	0.5	0.5	
		$V_{OL} = 0.6$	0.6	0.6	0.6	0.6	
		$V_{OL} = 0.7$	0.7	0.7	0.7	0.7	
		$V_{OL} = 0.8$	0.8	0.8	0.8	0.8	
		$V_{OL} = 0.9$	0.9	0.9	0.9	0.9	
		$V_{OL} = 1.0$	1.0	1.0	1.0	1.0	
		$V_{OL} = 1.1$	1.1	1.1	1.1	1.1	
		$V_{OL} = 1.2$	1.2	1.2	1.2	1.2	
		$V_{OL} = 1.3$	1.3	1.3	1.3	1.3	
		$V_{OL} = 1.4$	1.4	1.4	1.4	1.4	

NC7WV07 – DC 出力特性

Existing Datasheet

Symbol	Parameter	V_{CC}	Conditions	$T_A = 25^\circ\text{C}$		$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Units
				Min	Max	Min	Max	
V_{OH}	Low-Level Output Voltage	0.00		0.1	0.1	0.1	0.1	V
		1.70 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.1	0.1	0.1	0.1	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OH} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
V_{OL}	Low-Level Output Voltage	0.00		0.1	0.1	0.1	0.1	V
		1.70 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.1	0.1	0.1	0.1	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	
		1.40 $\pm V_{CC} \pm 1.30$	$I_{OL} = 100 \mu\text{A}$	0.2	0.2	0.2	0.2	

New

Symbol	Parameter	Condition	$T_A = 25^\circ\text{C}$			$T_A = -40^\circ\text{C to } 85^\circ\text{C}$		Unit
			Min	Typ	Max	Min	Max	
V_{OL}	Low-Level Output Voltage	$V_{OL} = V_{OL} \text{ or } V_{OL}$	0.0	0.1	0.1	0.1		
		$I_{OL} = 100\text{ }\mu\text{A}$	0.1 to 0.2	—	0.1	0.1		
			0.4 to 0.6	—	0.1	0.1		
		100 μA	—	—	0.2	0.2		
		1.0A	0.3 to 0.7	—	0.2	0.2		
		0.7 to 3.0	—	—	0.2	0.2		
		$I_{OL} = 0.1\text{ mA}$	0.1 to 0.2	—	0.25 to V_{OL}	0.25 to V_{OL}		
		0.4 to 1 mA	0.4 to 0.5	—	0.25 to V_{OL}	0.25 to V_{OL}		
		$I_{OL} = 0.1\text{ mA}$	0.0 to 0.1	—	0.0	0.0		
		0.4 to 1 mA	0.0 to 0.1	—	0.0	0.0		
		$I_{OL} = 10\text{ mA}$	0.0 to 0.2	—	0.0	0.0		
		0.7 to 3.0	—	—	0.0	0.0		
		$I_{OL} = 10\text{ mA}$	0.0 to 0.2	—	0.0	0.0		
		0.7 to 3.0	—	—	0.0	0.0		
		$I_{OL} = 0.1\text{ mA}$	0.0 to 0.1	—	0.05	0.05		
		0.4 to 1 mA	0.0 to 0.1	—	0.05	0.05		

NC7WV14- AC 特性

Existing Datasheet

Electrical Characteristics									
Symbol	Parameter	V _{CC} (V)	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure Number
t _{PLH} , t _{PLL}	Propagation Delay	0.80	C _L = 15 pF, R _L = 1 MΩ	Min	Typ	Min	Max	ns	Figure 1
		1.10 to 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	3.0	1.5	10.0		
		1.40 to 1.60	C _L = 15 pF, R _L = 500 Ω	3.0	3.2	3.0	7.0		
		1.80 to 2.00	C _L = 15 pF, R _L = 100 Ω	3.0	3.0	3.0	4.0		
		2.30 to 2.70	C _L = 15 pF, R _L = 50 Ω	3.0	3.0	3.0	4.4		
		2.70 to 3.00	C _L = 15 pF, R _L = 10 Ω	3.0	3.0	3.0	3.8		

New

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C		
t _{PLH} , t _{PLL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.8	Min	Typ	Max	Min	Max	Unit
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	3.0	10.0	—	10.0	ns
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.6	—	3.0	8.0	—	7.0	
		R _L = 100 Ω, C _L = 30 pF	1.65 to 1.85	—	3.0	5.2	—	6.0	
		R _L = 50 Ω, C _L = 30 pF	2.3 to 2.7	—	3.0	3.7	—	4.4	
		R _L = 10 Ω, C _L = 30 pF	2.7 to 3.0	—	3.0	3.0	—	3.8	

NC7WV07- AC 特性

Existing Datasheet

AC Electrical Characteristics									
Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40 to +85°C		Units	Figure
t _{PLH} , t _{PLL}	Propagation Delay	0.80	C _L = 15 pF, R _L = 1 MΩ	Min	Typ	Min	Max	ns	Figure 3
		1.10 to 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	3.0	1.5	10.0		
		1.40 to 1.60	C _L = 15 pF, R _L = 500 Ω	3.0	3.2	3.0	7.0		
		1.80 to 2.00	C _L = 15 pF, R _L = 100 Ω	3.0	3.0	3.0	4.0		
		2.30 to 2.70	C _L = 15 pF, R _L = 50 Ω	3.0	3.0	3.0	4.4		
		2.70 to 3.00	C _L = 15 pF, R _L = 10 Ω	3.0	3.0	3.0	3.8		

New

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C		
t _{PLH} , t _{PLL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.8	Min	Typ	Max	Min	Max	Unit
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	3.0	10.0	—	10.0	ns
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.6	—	3.0	8.0	—	7.0	
		R _L = 100 Ω, C _L = 30 pF	1.65 to 1.85	—	3.0	5.2	—	6.0	
		R _L = 50 Ω, C _L = 30 pF	2.3 to 2.7	—	3.0	3.7	—	4.4	
		R _L = 10 Ω, C _L = 30 pF	2.7 to 3.0	—	3.0	3.0	—	4.0	

NC7SV11- AC 特性

Existing Datasheet

AC Electrical Characteristics									
Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure Number
t _{PLH} , t _{PLL}	Propagation Delay	0.80	C _L = 15 pF, R _L = 1 MΩ	Min	Typ	Min	Max	ns	Figure 1, 2
		1.10 to 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	3.0	1.5	10.0		
		1.40 to 1.60	C _L = 15 pF, R _L = 500 Ω	3.0	3.2	3.0	7.0		
		1.80 to 2.00	C _L = 15 pF, R _L = 100 Ω	3.0	3.0	3.0	4.0		
		2.30 to 2.70	C _L = 15 pF, R _L = 50 Ω	3.0	3.0	3.0	4.4		
		2.70 to 3.00	C _L = 15 pF, R _L = 10 Ω	3.0	3.0	3.0	3.8		

New

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C		
t _{PLH} , t _{PLL}	Propagation Delay, A to Y (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.8	Min	Typ	Max	Min	Max	Unit
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	3.0	10.0	—	10.0	ns
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.6	—	3.0	8.0	—	7.0	
		R _L = 100 Ω, C _L = 30 pF	1.65 to 1.85	—	3.0	5.2	—	6.0	
		R _L = 50 Ω, C _L = 30 pF	2.3 to 2.7	—	3.0	3.7	—	4.4	
		R _L = 10 Ω, C _L = 30 pF	2.7 to 3.0	—	3.0	3.0	—	4.0	

NC7SV57/58- AC 特性

Existing Datasheet

AC Electrical Characteristics									
Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure
t _{PLH} , t _{PLL}	Propagation Delay	0.80	C _L = 15 pF, R _L = 1 MΩ	Min	Typ	Min	Max	ns	Figure 15
		1.10 to 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	3.0	1.5	10.0		
		1.40 to 1.60	C _L = 15 pF, R _L = 500 Ω	3.0	3.2	3.0	7.0		
		1.80 to 2.00	C _L = 15 pF, R _L = 100 Ω	3.0	3.0	3.0	4.0		
		2.30 to 2.70	C _L = 15 pF, R _L = 50 Ω	3.0	3.0	3.0	4.4		
		2.70 to 3.00	C _L = 15 pF, R _L = 10 Ω	3.0	3.0	3.0	3.8		

New

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C		
t _{PLH} , t _{PLL}	Propagation Delay, 50 to 11 or 12 to 13 (Figures 12 and 13)	R _L = 1 MΩ, C _L = 15 pF	0.8	Min	Typ	Max	Min	Max	Unit
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	3.0	10.0	—	10.0	ns
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.6	—	3.0	8.0	—	7.0	
		R _L = 100 Ω, C _L = 30 pF	1.65 to 1.85	—	3.0	5.2	—	6.0	
		R _L = 50 Ω, C _L = 30 pF	2.3 to 2.7	—	3.0	3.7	—	4.4	
		R _L = 10 Ω, C _L = 30 pF	2.7 to 3.0	—	3.0	3.0	—	4.0	

NC7SV157- AC 特性

Existing Datasheet

AC Electrical Characteristics									
Symbol	Parameter	V _{CC}	Conditions	T _A = +25°C		T _A = -40°C to +85°C		Units	Figure Number
t _{PLH} , t _{PLL}	Propagation Delay	0.80	C _L = 15 pF, R _L = 1 MΩ	Min	Typ	Min	Max	ns	Figure 1, 2
		1.10 to 1.30	C _L = 15 pF, R _L = 2 kΩ	2.0	3.0	1.5	10.0		
		1.40 to 1.60	C _L = 15 pF, R _L = 500 Ω	3.0	3.2	3.0	7.0		
		1.80 to 2.00	C _L = 15 pF, R _L = 100 Ω	3.0	3.0	3.0	4.0		
		2.30 to 2.70	C _L = 15 pF, R _L = 50 Ω	3.0	3.0	3.0	4.4		
		2.70 to 3.00	C _L = 15 pF, R _L = 10 Ω	3.0	3.0	3.0	3.8		

New

AC ELECTRICAL CHARACTERISTICS									
Symbol	Parameter	Condition	V _{CC} (V)	T _A = 25°C			T _A = -40°C to +85°C		
t _{PLH} , t _{PLL}	Propagation Delay, 15 to 16 or 17 to 18 (Figures 3 and 4)	R _L = 1 MΩ, C _L = 15 pF	0.8	Min	Typ	Max	Min	Max	Unit
		R _L = 2 kΩ, C _L = 15 pF	1.1 to 1.3	—	3.0	10.0	—	10.0	ns
		R _L = 500 Ω, C _L = 30 pF	1.4 to 1.6	—	3.0	8.0	—	7.0	
		R _L = 100 Ω, C _L = 30 pF	1.65 to 1.85	—	3.0	5.2	—	6.0	
		R _L = 50 Ω, C _L = 30 pF	2.3 to 2.7	—	3.0	3.7	—	4.4	
		R _L = 10 Ω, C _L = 30 pF	2.7 to 3.0	—	3.0	3.0	—	4.0	

NC7SV19- AC 特性

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	$T_A = -25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Typ	Max			
t_{PLH}	Propagation Delay	0.30	12			12			ns	$C_L = 15\text{ pF}$, $R_L = 1\text{ M}\Omega$	Figure 1.2
		$1.10 \leq V_{CC} \leq 1.30$	0.0	0	10.0	0.0	0	10.0		$C_L = 10\text{ pF}$, $R_L = 2\text{ k}\Omega$	
		$1.40 \leq V_{CC} \leq 1.80$	0.0	0	8.0	0.0	0	8.0		$C_L = 30\text{ pF}$, $R_L = 500\Omega$	
		$1.80 \leq V_{CC} \leq 2.70$	0.0	0	6.7	0.0	0	6.7			
		$2.70 \leq V_{CC} \leq 3.00$	0.0	0	5.4	0.0	0	5.4			

New

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Unit
				Min	Typ	Max	Min	Max		
t_{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	$R_L = 1\text{ M}\Omega$, $C_L = 15\text{ pF}$	0.9	—	10.0	—	—	—	ns	
		$R_L = 2\text{ k}\Omega$, $C_L = 15\text{ pF}$	1.1 to 1.3	—	5.2	—	—	10.0		
		$R_L = 500\Omega$, $C_L = 30\text{ pF}$	1.4 to 1.8	—	3.2	—	—	9.5		
			1.85 to 1.85	—	2.7	—	—	7.5		
			2.3 to 2.7	—	2.0	—	—	6.4		
			2.7 to 3.0	—	1.7	—	—	5.8		

NC7WV04- AC 特性

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Typ	Max			
t_{PLH}	Propagation Delay	0.30	12			12			ns	$C_L = 15\text{ pF}$, $R_L = 1\text{ M}\Omega$	Figure 1.2
		$1.10 \leq V_{CC} \leq 1.30$	0.0	0	10.1	0.0	0	14.9		$C_L = 10\text{ pF}$, $R_L = 2\text{ k}\Omega$	
		$1.40 \leq V_{CC} \leq 1.80$	0.0	0	8.0	0.0	0	8.0		$C_L = 30\text{ pF}$	
		$1.80 \leq V_{CC} \leq 2.70$	0.0	0	6.7	0.0	0	6.7		$R_L = 500\Omega$	
		$2.70 \leq V_{CC} \leq 3.00$	0.0	0	5.4	0.0	0	5.4			

New

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Unit
				Min	Typ	Max	Min	Max		
t_{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	$R_L = 1\text{ M}\Omega$, $C_L = 15\text{ pF}$	0.9	—	17.0	—	—	—	ns	
		$R_L = 2\text{ k}\Omega$, $C_L = 15\text{ pF}$	1.1 to 1.3	—	4.5	—	—	14.9		
			1.4 to 1.8	—	3.0	—	—	8.0		
			1.85 to 1.85	—	2.5	—	—	6.7		
			2.3 to 2.7	—	1.8	—	—	5.8		
			2.7 to 3.0	—	1.5	—	—	5.2		

NC7WV16- AC 特性

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Typ	Max			
t_{PLH}	Propagation Delay	0.30	12			12			ns	$C_L = 15\text{ pF}$, $R_L = 1\text{ M}\Omega$	Figure 1.2
		$1.10 \leq V_{CC} \leq 1.30$	0.0	0	10.0	0.0	0	17.0		$C_L = 10\text{ pF}$, $R_L = 2\text{ k}\Omega$	
		$1.40 \leq V_{CC} \leq 1.80$	0.0	0	8.0	0.0	0	7.0		$C_L = 30\text{ pF}$	
		$1.80 \leq V_{CC} \leq 2.70$	0.0	0	6.7	0.0	0	6.2		$R_L = 500\Omega$	
		$2.70 \leq V_{CC} \leq 3.00$	0.0	0	5.4	0.0	0	4.4			

New

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Unit
				Min	Typ	Max	Min	Max		
t_{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	$R_L = 1\text{ M}\Omega$, $C_L = 15\text{ pF}$	0.9	—	12.8	—	—	—	ns	
		$R_L = 2\text{ k}\Omega$, $C_L = 15\text{ pF}$	1.1 to 1.3	—	4.7	—	—	17.0		
			1.4 to 1.8	—	3.7	—	—	7.0		
			1.85 to 1.85	—	3.0	—	—	6.2		
			2.3 to 2.7	—	1.9	—	—	4.4		
			2.7 to 3.0	—	1.6	—	—	3.8		

NC7WV17- AC 特性

Existing Datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Typ	Max			
t_{PLH}	Propagation Delay	0.30	12			12			ns	$C_L = 15\text{ pF}$, $R_L = 1\text{ M}\Omega$	Figure 1.2
		$1.10 \leq V_{CC} \leq 1.30$	0.0	0	14.5	0.0	0	16.9		$C_L = 10\text{ pF}$	
		$1.40 \leq V_{CC} \leq 1.80$	0.0	0	7.0	0.0	0	7.0		$R_L = 2\text{ k}\Omega$	
		$1.80 \leq V_{CC} \leq 2.70$	0.0	0	6.2	0.0	0	6.2		$C_L = 30\text{ pF}$	
		$2.70 \leq V_{CC} \leq 3.00$	0.0	0	4.9	0.0	0	4.0		$R_L = 500\Omega$	

New

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V_{CC} (V)	$T_A = 25^{\circ}\text{C}$			$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$			Unit
				Min	Typ	Max	Min	Max		
t_{PLH}	Propagation Delay, A to Y (Figures 3 and 4)	$R_L = 1\text{ M}\Omega$, $C_L = 15\text{ pF}$	0.9	—	17.0	—	—	—	ns	
		$R_L = 2\text{ k}\Omega$, $C_L = 15\text{ pF}$	1.1 to 1.3	—	5.1	—	—	16.9		
			1.4 to 1.8	—	3.0	—	—	7.0		
			1.85 to 1.85	—	2.5	—	—	6.2		
			2.3 to 2.7	—	2.0	—	—	4.9		
			2.7 to 3.0	—	1.6	—	—	4.0		

信頼性データの要約:

デバイス名: NL17SG373ADFT2G

RMS: S72646 / S65396 / S51765

パッケージ: SC88

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	2016 hrs	0/240
TC + PC	JESD22-A104	Ta= -65°C to + 150°C	1000 cyc	0/240
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs	0/240
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/240
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/720

電気的特性の要約:

電気的特性はご要望に応じてご提出いたします。

影響を受ける部品の一覧:

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

部品番号	認定試験用ピークル
NC7WV16P6X	NL17SG373ADFT2G
NC7SP57P6X	NL17SG373ADFT2G
NC7WV04P6X	NL17SG373ADFT2G
NC7SV157P6X	NL17SG373ADFT2G
NC7SV57P6X	NL17SG373ADFT2G
NC7WV14P6X	NL17SG373ADFT2G
NC7WP14P6X	NL17SG373ADFT2G
NC7SV19P6X	NL17SG373ADFT2G
NC7SP157P6X	NL17SG373ADFT2G
NC7SP58P6X	NL17SG373ADFT2G
NC7WV17P6X	NL17SG373ADFT2G
NC7SV58P6X	NL17SG373ADFT2G
NC7WV07P6X	NL17SG373ADFT2G
NC7SV11P6X	NL17SG373ADFT2G
NC7SP19P6X	NL17SG373ADFT2G
NL17SG373ADFT2G	NL17SG373ADFT2G