ON Semiconductor®

Initial Product/Process Change Notification

Document #:IPCN22964X
Issue Date:03 Apr 2020

Title of Change:	MiniGates Fab, Assembly Material and Test Change (SC88) with datasheet update.
Proposed First Ship date:	03 Oct 2020 or earlier if approved by customer
Contact Information:	Contact your local ON Semiconductor Sales Office or SiewWan.Shee@onsemi.com
PCN Samples Contact:	Contact your local ON Semiconductor Sales Office or PCN.samples@onsemi.com Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Type of Notification:	This is an Initial Product/Process Change Notification (IPCN) sent to customers. An IPCN is an advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan.The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN). This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change. In case of questions, contact PCN.Support@onsemi.com
Marking of Parts/ Traceability of Change:	For NC7 parts, the marking style will be different. For NL17 part, no change in marking style. The CS code on the reel label will be changed from US to JP for both (NC7 and NL17).
Change Category:	Wafer Fab Change, Assembly Change, Test Change
Change Sub-Category(s):	Manufacturing Process Change, Material Change, Datasheet/Product Doc change, Shipping/Packaging/Marking, Manufacturing Site Transfer

Sites Affected:

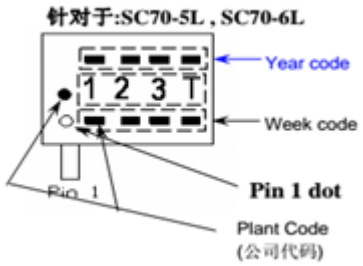
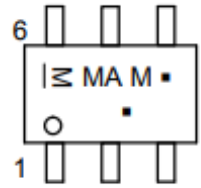
ON Semiconductor Sites	External Foundry/Subcon Sites
Leshan Phoenix Semiconductor, China	HANA Microelectronics, China
ON Semiconductor Cebu, Philippines	Tower Semiconductor, Israel
ON Semiconductor Maine, United States	Towerjazz Semiconductor, Japan (Toyama)

Description and Purpose:

IPCN22964X 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	 *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.

For NL17 Family:

Material to be changed	Before Change (Existing flow)	After Change (new flow)
Mold Compound	Henkel GR640 HV-L1 and MC GE-200F HWG	Henkel GR640 HV-L1
Wire	Au	Cu
Lead Frame	SC88 Lead frame	SC88 Lead frame with Vgroove
Die Source	Foundry in Israel	Foundry in Japan

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.

NL17SG

- **Maximum voltage rating changed from 5.5 volts to 4.3 volts.**

MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{CC}	DC Supply Voltage		−0.5 to +5.5	V
V_{IN}	DC Input Voltage		−0.5 to +4.6	V
V_{OUT}	DC Output Voltage	Output at High or Low State Power−Down Mode (V_{CC} = 0 V)	−0.5 to V_{CC} +0.5 −0.5 to +4.6	V

MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{CC}	DC Supply Voltage		−0.5 to +5.5	V
V_{IN}	DC Input Voltage	V_{CC} ≥ 0.9 V V_{CC} < 0.9 V	−0.5 to +5.5 −0.5 to +4.6	V
V_{OUT}	DC Output Voltage		−0.5 to V_{CC} + 0.5	V

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	−0.5 to +5.5	V
V_{IN}	DC Input Voltage	−0.5 to +4.6	V
V_{OUT}	DC Output Voltage	−0.5 to V_{CC} +0.5	V

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	−0.5 to +5.5	V
V_{IN}	DC Input Voltage	−0.5 to +5.5	V
V_{OUT}	DC Output Voltage	−0.5 to V_{CC} + 0.5	V

MAXIMUM RATINGS

Symbol	Characteristics		Value	Unit
V_{CC}	DC Supply Voltage	SC−88A (NLV) SC−74A, SC−88A, SOT−953, UDFN6	−0.5 to +5.5 −0.5 to +4.3	V
V_{IN}	DC Input Voltage	SC−88A (NLV) SC−74A, SC−88A, SOT−953, UDFN6	−0.5 to +4.6 −0.5 to +4.3	V
V_{OUT}	DC Output Voltage SC−88A (NLV),	Active−Mode (High or Low State) Tri−State Mode (Note 1) Power−Down Mode (V_{CC} = 0 V)	−0.5 to V_{CC} + 0.5 −0.5 to +4.6 −0.5 to +4.6	V
	DC Output Voltage SC−74A, SC−88A, SOT−953, UDFN6	Active−Mode (High or Low State) Tri−State Mode (Note 1) Power−Down Mode (V_{CC} = 0 V)	−0.5 to V_{CC} + 0.5 −0.5 to +4.3 −0.5 to +4.3	V

- **Electrostatic Discharge/Latchup adjusted to align with JEDEC Standard.**

Existing datasheet

V_{ESD}	ESD Withstand Voltage	Human Body Model (Note 2) Machine Model (Note 3)	>1500 >100	V
$I_{LATCHUP}$	Latchup Performance Above V_{CC} and Below GND at 125°C (Note 4)		±100	mA

V_{ESD}	ESD Withstand Voltage	Human Body Model (Note 2) Machine Model (Note 3)	>2000 >100	V
$I_{LATCHUP}$	Latch−up Performance above V_{CC} and below GND at 125°C (Note 4)		±75	mA

V_{ESD}	ESD Withstand Voltage Human Body Mode (Note 2) Machine Model (Note 3)		> 3000 > 200	V
$I_{LATCHUP}$	Latchup Performance Above V_{CC} and Below GND at 125°C (Note 4)		±100	mA

V_{ESD}	ESD Withstand Voltage	Human Body Model (Note 2) Machine Model (Note 3)	>2000 >150	V
$I_{LATCHUP}$	Latchup Performance	Above V_{CC} and Below GND at 125°C (Note 4)	±100	mA

New

V_{ESD}	ESD Withstand Voltage (Note 3)	Human Body Model Charged Device Model	2000 1000	V
$I_{Latchup}$	Latchup Performance (Note 4)		±100	mA

- **Removed minimum limits from Positive Input Threshold Voltage specification.**
- **Removed maximum limits from Negative Threshold Voltage specification.**
- **Adjusted limits to family specification and corrected Hysteresis max limits.**

Existing datasheet

Symbol	Parameter	Condition	V_{CC} (V)	T_A = 25°C Min	T_A = 25°C Typ	T_A = 25°C Max	−55°C ≤ T_A ≤ 125°C Min	−55°C ≤ T_A ≤ 125°C Max	Unit
V_{T+}	Positive−Going Input Threshold Voltage		0.9	0.64	0.7	0.86	0.62	0.87	V
			1.1	0.73	0.81	0.95	0.71	1	
			1.4	0.86	0.94	1.16	0.84	1.2	
			1.65	0.95	1.06	1.25	0.94	1.3	
			2.3	1.22	1.36	1.6	1.18	1.65	
			3.0	1.51	1.8	2.05	1.38	2.1	
V_{T-}	Negative−Going Input Threshold Voltage		0.9	0.09	0.23	0.30	0.08	0.33	V
			1.1	0.15	0.33	0.39	0.12	0.43	
			1.4	0.3	0.47	0.54	0.25	0.55	
			1.65	0.35	0.6	0.65	0.3	0.65	
			2.3	0.55	0.85	0.88	0.5	0.88	
			3.0	0.95	1.13	1.16	0.9	1.16	
V_H	Hysteresis Voltage		0.9	0.15	0.5	0.75	0.2	0.8	V
			1.1	0.15	0.5	0.75	0.2	0.8	
			1.4	0.15	0.5	0.75	0.2	0.8	
			1.65	0.15	0.5	0.75	0.2	0.8	
			2.3	0.15	0.5	0.75	0.2	0.8	
			3.0	0.25	0.65	0.85	0.3	0.9	

New

Symbol	Parameter	Conditions	V_{CC} (V)	T_A = 25 °C Min	T_A = 25 °C Typ	T_A = 25 °C Max	T_A = -55°C to +125°C Min	T_A = -55°C to +125°C Max	Unit
V_{T+}	Positive Input Threshold Voltage		0.9	-	0.7	0.86	-	0.86	V
			1.1 to 1.3	-	0.81	0.95	-	0.95	
			1.4 to 1.6	-	0.94	1.16	-	1.16	
			1.65 – 1.95	-	1.06	1.3	-	1.3	
			2.3 to < 2.7	-	1.36	1.73	-	1.73	
			2.7 to 3.6	-	1.8	2.24	-	2.24	
V_{T-}	Negative Input Threshold Voltage		0.9	0.10	0.23	-	0.10	-	V
			1.1 to 1.3	0.15	0.33	-	0.15	-	
			1.4 to 1.6	0.3	0.47	-	0.3	-	
			1.65 – 1.95	0.35	0.6	-	0.35	-	
			2.3 to < 2.7	0.55	0.85	-	0.55	-	
			2.7 to 3.6	0.95	1.13	-	0.95	-	
V_H	Low-Level Input Voltage		0.9	0.15	0.27	0.7	0.15	0.7	V
			1.1 to 1.3	0.2	0.35	0.8	0.2	0.8	
			1.4 to 1.6	0.25	0.41	0.86	0.25	0.86	
			1.65 – 1.95	0.30	0.46	0.9	0.30	0.9	
			2.3 to < 2.7	0.40	0.56	1.05	0.40	1.05	
			2.7 to 3.6	0.49	0.59	1.1	0.49	1.1	

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

I_{OFF}	Power Off Leakage Current	V_{IN} = 3.6 V or V_{OUT} = 3.6 V	0	-	-	1.0	-	5.0	µA

I_{IN}	Input Leakage Current	0 ≤ V_{IN} ≤ 3.6 V	0 to 3.6		±0.1		±1.0	µA

I_{IN}	Input Leakage Current	0 ≤ V_{IN} ≤ 3.6 V	0.9 to 3.6		±0.1		±1.0	µA

- **Propagation Delay specification adjusted to remove limits at 0.9 volts.**
- **Minimum Limits removed from all Propagation Delay specifications.**

Existing datasheet

Symbol	Parameter	Test Condition	V_{CC} (V)	T_A = 25° C Min	T_A = 25° C Typ	T_A = 25° C Max	T_A = -55°C to +125°C Min	T_A = -55°C to +125°C Max	Unit
t_{PLH}, t_{PHL}	Propagation Delay, A or B to Y	C_L = 10 pF, R_L = 1 MΩ	0.9	-	12.2	14.4	-	18.0	ns
			1.1 to 1.3	-	8.8	12.4	-	16.2	
			1.4 to 1.6	-	5.0	8.5	-	10.0	
			1.65 to 1.95	-	3.6	6.2	-	6.7	
			2.3 to 2.7	-	2.7	3.9	-	4.4	
			3.0 to 3.6	-	2.1	3.1	-	3.7	
		C_L = 15 pF, R_L = 1 MΩ	0.9	-	13.0	16.0	-	18.0	ns
			1.1 to 1.3	-	7.8	12.0	-	16.0	
			1.4 to 1.6	-	5.9	9.3	-	11.2	
			1.65 to 1.95	-	4.5	6.9	-	7.1	
			2.3 to 2.7	-	3.0	4.4	-	5.0	
			3.0 to 3.6	-	2.4	3.4	-	3.9	
		C_L = 30 pF, R_L = 1 MΩ	0.9	-	14.0	17.2	-	20.0	ns
			1.1 to 1.3	-	11.0	14.1	-	17.8	
			1.4 to 1.6	-	8.0	12.1	-	15.9	
			1.65 to 1.95	-	6.0	9.2	-	9.6	
			2.3 to 2.7	-	3.9	5.7	-	6.1	
			3.0 to 3.6	-	3.0	4.4	-	4.8	

New

Symbol	Parameter	Test Condition	V_{CC} (V)	T_A = 25° C Min	T_A = 25° C Typ	T_A = 25° C Max	T_A = -55°C to +125°C Min	T_A = -55°C to +125°C Max	Unit
t_{PLH}, t_{PHL}	Propagation Delay, A or B to Y	C_L = 10 pF, R_L = 1 MΩ	0.9	-	12.2	-	-	-	ns
			1.1 to 1.3	-	8.8	12.4	-	16.2	
			1.4 to 1.6	-	5.0	8.5	-	10.0	
			1.65 to 1.95	-	3.6	6.2	-	6.7	
			2.3 to 2.7	-	2.7	3.9	-	4.4	
			3.0 to 3.6	-	2.1	3.1	-	3.7	
		C_L = 15 pF, R_L = 1 MΩ	0.9	-	13.0	-	-	-	ns
			1.1 to 1.3	-	7.8	12.0	-	16.0	
			1.4 to 1.6	-	5.9	9.3	-	11.2	
			1.65 to 1.95	-	4.5	6.9	-	7.1	
			2.3 to 2.7	-	3.0	4.4	-	5.0	
			3.0 to 3.6	-	2.4	3.4	-	3.9	
		C_L = 30 pF, R_L = 1 MΩ	0.9	-	14.0	-	-	-	ns
			1.1 to 1.3	-	11.0	14.1	-	17.8	
			1.4 to 1.6	-	8.0	12.1	-	15.9	
			1.65 to 1.95	-	6.0	9.2	-	9.6	
			2.3 to 2.7	-	3.9	5.7	-	6.1	
			3.0 to 3.6	-	3.0	4.4	-	4.8	

Symbol	Parameter	Test 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	C_L = 10 pF, R_L = 1 MΩ	0.9	–	27.3	–	–	–	ns
			1.1 to 1.3	–	13.0	22.6	1.0	35.9	
			1.4 to 1.6	–	7.5	10.5	1.0	11.3	
			1.65 to 1.95	–	6.0	7.8	1.0	8.2	
			2.3 to 2.7	–	4.3	5.4	1.0	5.8	
			3.0 to 3.6	–	3.5	4.4	1.0	4.6	
		C_L = 15 pF, R_L = 1 MΩ	0.9	–	29.5	–	–	–	ns
			1.1 to 1.3	–	14.3	25.1	1.0	41.8	
			1.4 to 1.6	–	8.0	11.5	1.0	12.6	
			1.65 to 1.95	–	6.3	8.4	1.0	8.7	
			2.3 to 2.7	–	4.6	5.7	1.0	6.1	
			3.0 to 3.6	–	3.7	4.6	1.0	5.0	
		C_L = 30 pF, R_L = 1 MΩ	0.9	–	40.5	–	–	–	ns
			1.1 to 1.3	–	19.6	35.7	1.0	58.1	
			1.4 to 1.6	–	10.7	15.8	1.0	17.6	
			1.65 to 1.95	–	7.8	10.7	1.0	11.7	
			2.3 to 2.7	–	5.4	6.9	1.0	8.1	
			3.0 to 3.6	–	4.3	5.2	1.0	6.1	

Symbol	Parameter	Test 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 or B to Y	C_L = 10 pF, R_L = 1 MΩ	0.9	-	12.2	-	-	-	ns
			1.1 to 1.3	-	8.8	12.4	-	16.2	
			1.4 to 1.6	-	5.0	8.5	-	10.0	
			1.65 to 1.95	-	3.6	6.2	-	6.7	
			2.3 to 2.7	-	2.7	3.9	-	4.4	
			3.0 to 3.6	-	2.1	3.1	-	3.7	
		C_L = 15 pF, R_L = 1 MΩ	0.9	-	13.0	-	-	-	ns
			1.1 to 1.3	-	7.8	12.0	-	16.0	
			1.4 to 1.6	-	5.9	9.3	-	11.2	
			1.65 to 1.95	-	4.5	6.9	-	7.1	
			2.3 to 2.7	-	3.0	4.4	-	5.0	
			3.0 to 3.6	-	2.4	3.4	-	3.9	
		C_L = 30 pF, R_L = 1 MΩ	0.9	-	14.0	-	-	-	ns
			1.1 to 1.3	-	11.0	14.1	-	17.8	
			1.4 to 1.6	-	8.0	12.1	-	15.9	
			1.65 to 1.95	-	6.0	9.2	-	9.6	
			2.3 to 2.7	-	3.9	5.7	-	6.1	
			3.0 to 3.6	-	3.0	4.4	-	4.8	

NC7SP

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

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})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.6V

New

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC})	−0.5V to +4.3V
DC Input Voltage (V_{IN})	−0.5V to +4.3V
DC Output Voltage (V_{OUT})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.3V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.6	V
V_{IN}	DC Input Voltage		-0.5	4.6	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.6	V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.3	V
V_{IN}	DC Input Voltage		-0.5	4.3	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.3	V

- **Adjusted Power Dissipation to reflect new die.**
- **Adjusted Thermal Resistance to reflect new die.**
-

Existing datasheet

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

θ_{JA}	Thermal Resistance	SC70-5		425		°C/W
		MicroPak™-6		500		
		MicroPak2™-6		560		

New

P_D	Power Dissipation In Still Air	SC-74A		225	mW
		SC70-5		190	
		MicroPak™-6		327	
		MicroPak2™-6		327	

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

- **High Level Input Voltage and Low Level Input Voltage specification adjusted to remove limits at 0.9 Volts.**
- **High Level Output Voltage and Low Level Output Voltage specifications adjusted to remove limits at 0.9 Volts.**

Existing datasheet

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		0.65 x V_{CC}		0.65 x V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		0.65 x V_{CC}		0.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.65 x V_{CC}		0.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		0.65 x V_{CC}		0.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		3.00 ≤ V_{CC} ≤ 3.60		2.1		2.1		
V_{IL}	LOW Level Input Voltage	0.90			0.35 x V_{CC}		0.35 x V_{CC}	V
		1.10 ≤ V_{CC} ≤ 1.30			0.35 x V_{CC}		0.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			0.35 x V_{CC}		0.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			0.35 x V_{CC}		0.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		3.00 ≤ V_{CC} ≤ 3.60			0.9		0.9	
V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-20µA	V_{CC} - 0.1		V_{CC} - 0.1		V
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC} - 0.1		V_{CC} - 0.1		
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC} - 0.1		V_{CC} - 0.1		
		1.65 ≤ 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	I_{OH}=-0.5mA	0.75 x V_{CC}		0.75 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-1mA	1.07		0.99		
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-1.5mA	1.24		1.22		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-2.1mA	1.95		1.87		
		3.00 ≤ V_{CC} ≤ 3.60	I_{OH}=-2.6mA	2.61		2.55		
V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=20µA		0.1		0.1	V
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.1		0.1	
		1.65 ≤ 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	I_{OL}=0.5mA		0.30 x V_{CC}		0.30 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=1mA		0.31		0.37	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=1.5mA		0.31		0.35	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=2.1mA		0.31		0.33	
		3.00 ≤ V_{CC} ≤ 3.60	I_{OL}=2.6mA		0.31		0.33	

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		V_{CC}		V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		0.65 x V_{CC}		0.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.65 x V_{CC}		0.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		0.65 x V_{CC}		0.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		3.00 ≤ V_{CC} ≤ 3.60		2.1		2.1		
V_{IL}	LOW Level Input Voltage	0.90			GND		GND	V
		1.10 ≤ V_{CC} ≤ 1.30			0.35 x V_{CC}		0.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			0.35 x V_{CC}		0.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			0.35 x V_{CC}		0.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		3.00 ≤ V_{CC} ≤ 3.60			0.9		0.9	
V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-20µA					V
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC} - 0.1		V_{CC} - 0.1		
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC} - 0.1		V_{CC} - 0.1		
		1.65 ≤ 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	I_{OH}=-0.5mA	0.75 x V_{CC}		0.75 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-1mA	1.07		0.99		
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-1.5mA	1.24		1.22		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-2.1mA	1.95		1.87		
		3.00 ≤ V_{CC} ≤ 3.60	I_{OH}=-2.6mA	2.61		2.55		
V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=20µA					V
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.1		0.1	
		1.65 ≤ 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	I_{OL}=0.5mA		0.30 x V_{CC}		0.30 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=1mA		0.31		0.37	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=1.5mA		0.31		0.35	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=2.1mA		0.31		0.33	
		3.00 ≤ V_{CC} ≤ 3.60	I_{OL}=2.6mA		0.31		0.33	

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_{IH}	HIGH Level Input Voltage	0.90	0.65 x V_{CC}		0.65 x V_{CC}			
		1.10 ≤ V_{CC} ≤ 1.30	0.65 x V_{CC}		0.65 x V_{CC}			
		1.40 ≤ V_{CC} ≤ 1.60	0.65 x V_{CC}		0.65 x V_{CC}		V	
		1.65 ≤ V_{CC} ≤ 1.95	0.65 x V_{CC}		0.65 x V_{CC}			
		2.30 ≤ V_{CC} ≤ 2.70	1.6		1.6			
		3.00 ≤ V_{CC} ≤ 3.60	2.1		2.1			
V_{IL}	LOW Level Input Voltage	0.90		0.35 x V_{CC}		0.35 x V_{CC}		
		1.10 ≤ V_{CC} ≤ 1.30		0.35 x V_{CC}		0.35 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.35 x V_{CC}		0.35 x V_{CC}	V	
		1.65 ≤ V_{CC} ≤ 1.95		0.35 x V_{CC}		0.35 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		0.7		0.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.9		0.9		
V_{OL}	LOW Level Output Voltage	0.90		0.1		0.1		
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.1		0.1		I_{OL} = 20 µA
		1.65 ≤ 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	V	
		1.10 ≤ V_{CC} ≤ 1.30		0.30 x V_{CC}		0.30 x V_{CC}		I_{OL} = 0.5 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.31		0.37		I_{OL} = 1 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.31		0.35		I_{OL} = 1.5 mA
		2.30 ≤ V_{CC} ≤ 2.70		0.31		0.33		I_{OL} = 2.1 mA
		3.00 ≤ V_{CC} ≤ 3.60		0.31		0.33		I_{OL} = 2.6 mA

New

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_{IH}	HIGH Level Input Voltage	0.90	V_{CC}		V_{CC}			
		1.10 ≤ V_{CC} ≤ 1.30	0.65 x V_{CC}		0.65 x V_{CC}			
		1.40 ≤ V_{CC} ≤ 1.60	0.65 x V_{CC}		0.65 x V_{CC}		V	
		1.65 ≤ V_{CC} ≤ 1.95	0.65 x V_{CC}		0.65 x V_{CC}			
		2.30 ≤ V_{CC} ≤ 2.70	1.6		1.6			
		3.00 ≤ V_{CC} ≤ 3.60	2.1		2.1			
V_{IL}	LOW Level Input Voltage	0.90	GND		GND			
		1.10 ≤ V_{CC} ≤ 1.30		0.35 x V_{CC}		0.35 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.35 x V_{CC}		0.35 x V_{CC}	V	
		1.65 ≤ V_{CC} ≤ 1.95		0.35 x V_{CC}		0.35 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		0.7		0.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.9		0.9		
V_{OL}	LOW Level Output Voltage	0.90						
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.1		0.1		I_{OL} = 20 µA
		1.65 ≤ 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	V	
		1.10 ≤ V_{CC} ≤ 1.30		0.30 x V_{CC}		0.30 x V_{CC}		I_{OL} = 0.5 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.31		0.37		I_{OL} = 1 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.31		0.35		I_{OL} = 1.5 mA
		2.30 ≤ V_{CC} ≤ 2.70		0.31		0.33		I_{OL} = 2.1 mA
		3.00 ≤ V_{CC} ≤ 3.60		0.31		0.33		I_{OL} = 2.6 mA

- **Positive Threshold Voltage adjusted to remove lower limts and remove limits at 0.90 Volts.**
- **Negative Threshold Voltage adjusted to remove upper limits and remove limits at 0.90 Volts.**
- **Hysteresis Voltage adjusted to remove limits at 0.90 Volts.**

DC Electrical Characteristics

Symbol	Parameter	Conditions	V_{CC} (V)	T_A=+25°C Min.	T_A=+25°C Max.	T_A=−40°C to +85°C Min.	T_A=−40°C to +85°C Max.	Units
V_P	Positive Threshold Voltage		0.90	0.30	0.60	0.30	0.60	V
			1.10	0.40	1.00	0.40	1.00	
			1.40	0.50	1.20	0.50	1.20	
			1.65	0.70	1.50	0.70	1.50	
			2.30	1.00	1.90	1.00	1.90	
			3.00	1.50	2.60	1.50	2.60	
V_N	Negative Threshold Voltage		0.90	0.10	0.60	0.10	0.60	V
			1.10	0.15	0.70	0.15	0.70	
			1.40	0.20	0.80	0.20	0.80	
			1.65	0.25	0.90	0.25	0.90	
			2.30	0.40	1.15	0.40	1.15	
			3.00	0.6	1.50	0.60	1.50	
V_H	Hysteresis Voltage		0.90	0.07	0.50	0.07	0.50	V
			1.10	0.08	0.60	0.08	0.60	
			1.40	0.09	0.80	0.09	0.80	
			1.65	0.10	1.00	0.10	1.00	
			2.30	0.25	1.10	0.25	1.10	
			3.00	0.60	1.80	0.60	1.80	

DC Electrical Characteristics

Symbol	Parameter	Conditions	V_{CC} (V)	T_A=+25°C Min.	T_A=+25°C Max.	T_A=−40°C to +85°C Min.	T_A=−40°C to +85°C Max.	Units
V_P	Positive Threshold Voltage		0.90					V
			1.10		1.00		1.00	
			1.40		1.20		1.20	
			1.65		1.50		1.50	
			2.30		1.90		1.90	
			3.00		2.60		2.60	
V_N	Negative Threshold Voltage		0.90					V
			1.10	0.15		0.15		
			1.40	0.20		0.20		
			1.65	0.25		0.25		
			2.30	0.40		0.40		
			3.00	0.6		0.60		
V_H	Hysteresis Voltage		0.90					V
			1.10	0.08	0.60	0.08	0.60	
			1.40	0.09	0.80	0.09	0.80	
			1.65	0.10	1.00	0.10	1.00	
			2.30	0.25	1.10	0.25	1.10	
			3.00	0.60	1.80	0.60	1.80	

- **Removed Minimum limits from all propagation delays and Output enable Time and Output Disable Time specifications.**

Existing datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	Typ	Max	T_A = −40°C to +85°C Min	Max	Units	Conditions	Figure Number
t_{PLZ}	Propagation Delay	0.90		24						
t_{PLZ}		1.10 ≤ V_{CC} ≤ 1.30	4.0	9	18.7	3.5	30.9	ns	C_L = 10 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60	2.0	6	12.4	1.5	13.9			
		1.65 ≤ V_{CC} ≤ 1.95	1.5	5	9.6	1.0	12.1			
		2.30 ≤ V_{CC} ≤ 2.70	1.0	4	9.0	0.8	10.0			
		3.00 ≤ V_{CC} ≤ 3.60	1.0	3	8.7	0.5	9.0			
t_{PZL}	Propagation Delay	0.90		27						
t_{PLZ}		1.10 ≤ V_{CC} ≤ 1.30	5.0	10	20.2	4.5	33.9	ns	C_L = 15 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60	3.0	7	13.3	2.5	16.0			
		1.65 ≤ V_{CC} ≤ 1.95	2.0	5	10.3	2.0	12.6			
		2.30 ≤ V_{CC} ≤ 2.70	1.5	4	9.4	1.0	10.2			
		3.00 ≤ V_{CC} ≤ 3.60	1.0	3	9.1	0.5	9.7			
t_{PZL}	Propagation Delay	0.90		34						
t_{PLZ}		1.10 ≤ V_{CC} ≤ 1.30	6.0	12	24.0	5.0	43.0	ns	C_L = 30 pF, R_U = 5000 Ω, R_D = 5000 Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60	4.0	8	16.0	3.0	18.0			
		1.65 ≤ V_{CC} ≤ 1.95	2.0	6	12.0	2.0	14.0			
		2.30 ≤ V_{CC} ≤ 2.70	1.0	5	11.0	1.0	12.0			
		3.00 ≤ V_{CC} ≤ 3.60	0.8	4	10.0	0.5	11.0			

New

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	Typ	Max	T_A = −40°C to +85°C Min	Max	Units	Conditions	Figure Number
t_{PLZ}	Propagation Delay	0.90		24						
t_{PLZ}		1.10 ≤ V_{CC} ≤ 1.30		9	18.7		30.9	ns	C_L = 10 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60		6	12.4		13.9			
		1.65 ≤ V_{CC} ≤ 1.95		5	9.6		12.1			
		2.30 ≤ V_{CC} ≤ 2.70		4	9.0		10.0			
		3.00 ≤ V_{CC} ≤ 3.60		3	8.7		9.0			
t_{PZL}	Propagation Delay	0.90		27						
t_{PLZ}		1.10 ≤ V_{CC} ≤ 1.30		10	20.2		33.9	ns	C_L = 15 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60		7	13.3		16.0			
		1.65 ≤ V_{CC} ≤ 1.95		5	10.3		12.6			
		2.30 ≤ V_{CC} ≤ 2.70		4	9.4		10.2			
		3.00 ≤ V_{CC} ≤ 3.60		3	9.1		9.7			
t_{PZL}	Propagation Delay	0.90		34						
t_{PLZ}		1.10 ≤ V_{CC} ≤ 1.30		12	24.0		43.0	ns	C_L = 30 pF, R_U = 5000 Ω, R_D = 5000 Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60		8	16.0		18.0			
		1.65 ≤ V_{CC} ≤ 1.95		6	12.0		14.0			
		2.30 ≤ V_{CC} ≤ 2.70		5	11.0		12.0			
		3.00 ≤ V_{CC} ≤ 3.60		4	10.0		11.0			

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	Typ.	T_A=-40 to +85°C Min.	Typ.	Min.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.5	12.0	23.4	5.0	51.1		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	13.8	3.0	17.7		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	10.6	2.0	14.0		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	7.6	1.0	9.9		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	6.4	0.5	8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.4	5.0	51.9		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	14.5	3.0	17.9		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	11.7	2.0	14.7		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	9.1	1.0	11.1		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	8.1	0.5	10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.8	5.0	53.5		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	17.1	3.0	21.1		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	16.5	2.0	20.5		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	15.2	1.0	16.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	14.8	0.5	16.3		

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	Typ.	Max.	T_A=-40 to +85°C Min.	Max.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			12.0	23.4		51.1		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	13.8		17.7		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	10.6		14.0		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	7.6		9.9		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	6.4		8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	24.4		51.9		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	14.5		17.9		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	11.7		14.7		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	9.1		11.1		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	8.1		10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	24.8		53.5		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	17.1		21.1		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	16.5		20.5		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	15.2		16.7		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	14.8		16.3		

- **Minimum limits removed from all propagation delays, Output Enable Times and Output Disable Times.**

Existing datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Min.	T_A=-40 to +85°C Max.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=10pF, R_L=1MΩ		26				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		4.0	10.0	19.1	3.5	39.6		
		1.40 ≤ V_{CC} ≤ 1.60		2.0	6.0	11.2	1.5	14.5		
		1.65 ≤ V_{CC} ≤ 1.95		1.5	5.0	8.6	1.0	11.6		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	4.0	6.3	0.8	8.2		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	5.3	0.5	7.2		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		29				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		4.0	8.0	17.5	3.5	40.4		
		1.40 ≤ V_{CC} ≤ 1.60		2.0	6.0	11.9	1.5	14.8		
		1.65 ≤ V_{CC} ≤ 1.95		1.5	5.0	9.7	1.0	12.3		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	4.0	7.7	0.8	10.5		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	6.9	0.5	8.6		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		4.0	8.0	20.5	3.5	42.0		
		1.40 ≤ V_{CC} ≤ 1.60		2.0	6.0	15.3	1.5	18.0		
		1.65 ≤ V_{CC} ≤ 1.95		1.5	5.0	14.7	1.0	17.8		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	4.0	13.7	0.8	15.0		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	13.5	0.5	14.8		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=15pF, R_L=1MΩ		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.0	10.0	20.5	4.5	42.5		
		1.40 ≤ V_{CC} ≤ 1.60		3.0	7.0	11.8	2.5	15.4		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.0	9.1	2.0	12.2		
		2.30 ≤ V_{CC} ≤ 2.70		1.5	4.0	6.6	1.0	8.6		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	5.6	0.5	7.5		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		31				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.0	11.0	18.2	4.5	43.3		
		1.40 ≤ V_{CC} ≤ 1.60		3.0	7.0	12.5	2.5	15.5		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.0	10.2	2.0	12.9		
		2.30 ≤ V_{CC} ≤ 2.70		1.5	4.0	8.0	1.0	9.9		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	7.2	0.5	8.9		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		30				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.0	11.0	21.6	4.5	44.9		
		1.40 ≤ V_{CC} ≤ 1.60		3.0	7.0	15.9	2.5	18.8		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.0	15.2	2.0	18.2		
		2.30 ≤ V_{CC} ≤ 2.70		1.5	4.0	14.1	1.0	15.4		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	13.9	0.5	15.1		

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AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Typ.	T_A=-40 to +85°C Min.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.5	12.0	23.4	5.0	51.1		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	13.8	3.0	17.7		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	10.6	2.0	14.0		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	7.6	1.0	9.9		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	6.4	0.5	8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.4	5.0	51.9		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	14.5	3.0	17.9		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	11.7	2.0	14.7		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	9.1	1.0	11.1		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	8.1	0.5	10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.8	5.0	53.5		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	17.1	3.0	21.1		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	16.5	2.0	20.5		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	15.2	1.0	16.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	14.8	0.5	16.3		

New

AC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Min.	T_A=-40 to +85°C Max.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=10pF, R_L=1MΩ		26				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			10.0	26		39.6		
		1.40 ≤ V_{CC} ≤ 1.60			6.0	11.2		14.5		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	8.6		11.6		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	6.3		8.2		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	5.3		7.2		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		29				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			8.0	26		40.4		
		1.40 ≤ V_{CC} ≤ 1.60			6.0	11.9		14.8		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	9.7		12.3		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	7.7		10.5		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	6.9		8.6		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			8.0	20.5		42.0		
		1.40 ≤ V_{CC} ≤ 1.60			6.0	15.3		18.0		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	14.7		17.8		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	13.7		15.0		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	13.5		14.8		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=15pF, R_L=1MΩ		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			10.0	27		42.5		
		1.40 ≤ V_{CC} ≤ 1.60			7.0	11.8		15.4		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	9.1		12.2		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	6.6		8.6		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	5.6		7.5		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		31				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			11.0	27		43.3		
		1.40 ≤ V_{CC} ≤ 1.60			7.0	12.5		15.5		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	10.2		12.9		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	8.0		9.9		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	7.2		8.9		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		30				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			11.0	21.6		44.9		
		1.40 ≤ V_{CC} ≤ 1.60			7.0	15.9		18.8		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	15.2		18.2		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	14.1		15.4		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	13.9		15.1		

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AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	T_A=+25°C Typ.	T_A=+25°C Max.	T_A=-40 to +85°C Typ.	T_A=-40 to +85°C Min.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			12.0	30		51.1		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	13.8		17.7		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	10.6		14.0		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	7.6		9.9		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	6.4		8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	30		51.9		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	14.5		17.9		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	11.7		14.7		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	9.1		11.1		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	8.1		10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	24.8		53.5		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	17.1		21.1		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	16.5		20.5		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	18.5		16.7		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	14.8		16.3		

NC7SV/WV/WP

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

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})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.6V

New

Absolute Maximum Ratings(Note 1)

Supply Voltage (V_{CC})	−0.5V to +4.3V
DC Input Voltage (V_{IN})	−0.5V to +4.3V
DC Output Voltage (V_{OUT})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.3V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.6	V
V_{IN}	DC Input Voltage		-0.5	4.6	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.6	V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.3	V
V_{IN}	DC Input Voltage		-0.5	4.3	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.3	V

- **Adjusted Power Dissipation to reflect new die.**
- **Adjusted Thermal Resistance to reflect new die.**

Existing datasheet

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

θ_{JA}	Thermal Resistance	SC70-5		425	°C/W
		MicroPak™-6		500	
		MicroPak2™-6		560	

New

P_D	Power Dissipation In Still Air	SC-74A		225	mW
		SC70-5		190	
		MicroPak™-6		327	
		MicroPak2™-6		327	

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

- **High Level Input Voltage and Low Level Input Voltage specification adjusted limits at 0.9 Volts.**
- **High Level Output Voltage and Low Level Output Voltage specifications adjusted to remove limits at 0.9 Volts.**

Existing datasheet

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C Min.	T_A=25°C Max.	T_A=-40 to 85°C Min.	T_A=-40 to 85°C Max.	Units
V_{IH}	HIGH Level Input Voltage	0.90		.65 x V_{CC}		.65 x V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		.65 x V_{CC}		.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		.65 x V_{CC}		.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		.65 x V_{CC}		.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		2.70 ≤ V_{CC} ≤ 3.60		2.0		2.0		
V_{IL}	LOW Level Input Voltage	0.90			.35 x V_{CC}		.35 x V_{CC}	V
		1.10 ≤ V_{CC} ≤ 1.30			.35 x V_{CC}		.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			.35 x V_{CC}		.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			.35 x V_{CC}		.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		2.70 ≤ V_{CC} ≤ 3.60			0.8		0.8	

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C Min.	T_A=25°C Max.	T_A=-40 to 85°C Min.	T_A=-40 to 85°C Max.	Units
V_{IH}	HIGH Level Input Voltage	0.90		V_{CC}		V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		.65 x V_{CC}		.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		.65 x V_{CC}		.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		.65 x V_{CC}		.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		2.70 ≤ V_{CC} ≤ 3.60		2.0		2.0		
V_{IL}	LOW Level Input Voltage	0.90			GND		GND	V
		1.10 ≤ V_{CC} ≤ 1.30			.35 x V_{CC}		.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			.35 x V_{CC}		.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			.35 x V_{CC}		.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		2.70 ≤ V_{CC} ≤ 3.60			0.8		0.8	

Existing datasheet

V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-100µA	V_{CC}-0.1		V_{CC}-0.1	V
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC}-0.1		V_{CC}-0.1	
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC}-0.2		V_{CC}-0.2	
		1.65 ≤ V_{CC} ≤ 1.95		V_{CC}-0.2		V_{CC}-0.2	
		2.30 ≤ V_{CC} ≤ 2.70		V_{CC}-0.2		V_{CC}-0.2	
		2.70 ≤ V_{CC} ≤ 3.60		V_{CC}-0.2		V_{CC}-0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OH}=-2mA	.75 x V_{CC}		.75 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-4mA	.75 x V_{CC}		.75 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-6mA	1.25		1.25	
		2.30 ≤ V_{CC} ≤ 2.70		2.00		2.00	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-12mA	1.8		1.8	
		2.70≤ V_{CC} ≤ 3.60		2.2		2.2	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-18mA	1.7		1.7	
		2.70 ≤ V_{CC} ≤ 3.60		2.4		2.4	
		2.70 ≤ V_{CC} ≤ 3.60	I_{OH}=-24mA	2.2		2.2	

V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=100µA		0.1	0.1	V
		1.10 ≤ V_{CC} ≤ 1.30			0.1	0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.2	0.2	
		1.65 ≤ V_{CC} ≤ 1.95			0.2	0.2	
		2.30 ≤ V_{CC} ≤ 2.70			0.2	0.2	
		2.70 ≤ V_{CC} ≤ 3.60			0.2	0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OL}=2mA		0.25 x V_{CC}	0.25 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=4mA		0.25 x V_{CC}	0.25 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=6mA		0.3	0.3	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=12mA		0.4	0.4	
		2.70 ≤ V_{CC} ≤ 3.60			0.4	0.4	
		2.30≤ V_{CC} ≤ 2.70	I_{OL}=18mA		0.6	0.6	
		2.70 ≤ V_{CC} ≤ 3.60			0.4	0.4	
		2.70 ≤ V_{CC} ≤ 3.60	I_{OL}=24mA		0.55	0.55	

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	T_A = +25°C Max	T_A = −40°C to +85°C Min	T_A = −40°C to +85°C Max	Units	Conditions
V_{OH}	HIGH Level Output Voltage	0.90	V_{CC} – 0.1		V_{CC} – 0.1		V	I_{OH} = –100 µA
		1.10 ≤ V_{CC} ≤ 1.30	V_{CC} – 0.1		V_{CC} – 0.1			
		1.40 ≤ V_{CC} ≤ 1.60	V_{CC} – 0.2		V_{CC} – 0.2			
		1.65 ≤ V_{CC} ≤ 1.95	V_{CC} – 0.2		V_{CC} – 0.2			
		2.30 ≤ V_{CC} < 2.70	V_{CC} – 0.2		V_{CC} – 0.2			
		2.70 ≤ V_{CC} ≤ 3.60	V_{CC} – 0.2		V_{CC} – 0.2			
		1.10 ≤ V_{CC} ≤ 1.30	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = –2 mA
		1.40 ≤ V_{CC} ≤ 1.60	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = –4 mA
		1.65 ≤ V_{CC} ≤ 1.95	1.25		1.25			I_{OH} = –6 mA
		2.30 ≤ V_{CC} < 2.70	2.0		2.0			
		2.30 ≤ V_{CC} < 2.70	1.8		1.8			I_{OH} = –12 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			
		2.30 ≤ V_{CC} < 2.70	1.7		1.7			I_{OH} = –18 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.4		2.4			
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			I_{OH} = –24 mA
V_{OL}	LOW Level Output Voltage	0.90		0.1		0.1	V	I_{OL} = 100 µA
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.2		0.2		
		1.65 ≤ V_{CC} ≤ 1.95		0.2		0.2		
		2.30 ≤ V_{CC} < 2.70		0.2		0.2		
		2.70 ≤ V_{CC} ≤ 3.60		0.2		0.2		
		1.10 ≤ V_{CC} ≤ 1.30		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 2 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 4 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.3		0.3		I_{OL} = 6 mA
		2.30 ≤ V_{CC} < 2.70		0.4		0.4		I_{OL} = 12 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.30 ≤ V_{CC} < 2.70		0.6		0.6		I_{OL} = 18 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.70 ≤ V_{CC} ≤ 3.60		0.55		0.55		I_{OL} = 24 mA

New

V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-100µA				V
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC}-0.1		V_{CC}-0.1	
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC}-0.2		V_{CC}-0.2	
		1.65 ≤ V_{CC} ≤ 1.95		V_{CC}-0.2		V_{CC}-0.2	
		2.30 ≤ V_{CC} ≤ 2.70		V_{CC}-0.2		V_{CC}-0.2	
		2.70 ≤ V_{CC} ≤ 3.60		V_{CC}-0.2		V_{CC}-0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OH}=-2mA	.75 x V_{CC}		.75 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-4mA	.75 x V_{CC}		.75 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-6mA	1.25		1.25	
		2.30 ≤ V_{CC} ≤ 2.70		2.00		2.00	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-12mA	1.8		1.8	
		2.70≤ V_{CC} ≤ 3.60		2.2		2.2	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-18mA	1.7		1.7	
		2.70 ≤ V_{CC} ≤ 3.60		2.4		2.4	
		2.70 ≤ V_{CC} ≤ 3.60	I_{OH}=-24mA	2.2		2.2	

V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=100µA				V
		1.10 ≤ V_{CC} ≤ 1.30			0.1	0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.2	0.2	
		1.65 ≤ V_{CC} ≤ 1.95			0.2	0.2	
		2.30 ≤ V_{CC} ≤ 2.70			0.2	0.2	
		2.70 ≤ V_{CC} ≤ 3.60			0.2	0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OL}=2mA		0.25 x V_{CC}	0.25 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=4mA		0.25 x V_{CC}	0.25 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=6mA		0.3	0.3	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=12mA		0.4	0.4	
		2.70 ≤ V_{CC} ≤ 3.60			0.4	0.4	
		2.30≤ V_{CC} ≤ 2.70	I_{OL}=18mA		0.6	0.6	
		2.70 ≤ V_{CC} ≤ 3.60			0.4	0.4	
		2.70 ≤ V_{CC} ≤ 3.60	I_{OL}=24mA		0.55	0.55	

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	T_A = +25°C Max	T_A = −40°C to +85°C Min	T_A = −40°C to +85°C Max	Units	Conditions
V_{OH}	HIGH Level Output Voltage	0.90					V	I_{OH} = –100 µA
		1.10 ≤ V_{CC} ≤ 1.30	V_{CC} – 0.1		V_{CC} – 0.1			
		1.40 ≤ V_{CC} ≤ 1.60	V_{CC} – 0.2		V_{CC} – 0.2			
		1.65 ≤ V_{CC} ≤ 1.95	V_{CC} – 0.2		V_{CC} – 0.2			
		2.30 ≤ V_{CC} < 2.70	V_{CC} – 0.2		V_{CC} – 0.2			
		2.70 ≤ V_{CC} ≤ 3.60	V_{CC} – 0.2		V_{CC} – 0.2			
		1.10 ≤ V_{CC} ≤ 1.30	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = –2 mA
		1.40 ≤ V_{CC} ≤ 1.60	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = –4 mA
		1.65 ≤ V_{CC} ≤ 1.95	1.25		1.25			I_{OH} = –6 mA
		2.30 ≤ V_{CC} < 2.70	2.0		2.0			
		2.30 ≤ V_{CC} < 2.70	1.8		1.8			I_{OH} = –12 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			
		2.30 ≤ V_{CC} < 2.70	1.7		1.7			I_{OH} = –18 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.4		2.4			
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			I_{OH} = –24 mA
V_{OL}	LOW Level Output Voltage	0.90					V	I_{OL} = 100 µA
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.2		0.2		
		1.65 ≤ V_{CC} ≤ 1.95		0.2		0.2		
		2.30 ≤ V_{CC} < 2.70		0.2		0.2		
		2.70 ≤ V_{CC} ≤ 3.60		0.2		0.2		
		1.10 ≤ V_{CC} ≤ 1.30		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 2 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 4 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.3		0.3		I_{OL} = 6 mA
		2.30 ≤ V_{CC} < 2.70		0.4		0.4		I_{OL} = 12 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.30 ≤ V_{CC} < 2.70		0.6		0.6		I_{OL} = 18 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.70 ≤ V_{CC} ≤ 3.60		0.55		0.55		I_{OL} = 24 mA

- **Positive Threshold Voltage adjusted to remove lower limits and remove limits at 0.90 Volts.**
- **Negative Threshold Voltage adjusted to remove upper limits and remove limits at 0.90 Volts.**
- **Hysteresis Voltage adjusted to remove limits at 0.90 Volts.**

Existing datasheet

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_P	Positive Threshold Voltage	0.90		0.30	0.70	0.30	0.70	V
		1.10		0.40	1.00	0.40	1.00	
		1.40		0.50	1.25	0.50	1.40	
		1.65		0.70	1.50	0.70	1.50	
		2.30		1.00	1.80	1.00	1.80	
		2.70		1.50	2.20	1.50	2.20	
V_N	Negative Threshold Voltage	0.90		0.10	0.60	0.10	0.60	V
		1.10		0.15	0.70	0.15	0.70	
		1.40		0.20	0.80	0.20	0.80	
		1.65		0.25	0.90	0.25	0.90	
		2.30		0.40	1.15	0.40	1.15	
		2.70		0.60	1.50	0.60	1.50	
V_H	Hysteresis Voltage	0.90		0.07	0.50	0.07	0.50	V
		1.10		0.08	0.60	0.08	0.60	
		1.40		0.09	0.80	0.09	0.80	
		1.65		0.15	1.00	0.15	1.00	
		2.30		0.25	1.10	0.25	1.10	
		2.70		0.60	1.20	0.60	1.20	

New

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_P	Positive Threshold Voltage	0.90						V
		1.10			1.00		1.00	
		1.40			1.25		1.40	
		1.65			1.50		1.50	
		2.30			1.80		1.80	
		2.70			2.20		2.20	
V_N	Negative Threshold Voltage	0.90						V
		1.10		0.15		0.15		
		1.40		0.20		0.20		
		1.65		0.25		0.25		
		2.30		0.40		0.40		
		2.70		0.60		0.60		
V_H	Hysteresis Voltage	0.90						V
		1.10		0.08	0.60	0.08	0.60	
		1.40		0.09	0.80	0.09	0.80	
		1.65		0.15	1.00	0.15	1.00	
		2.30		0.25	1.10	0.25	1.10	
		2.70		0.60	1.20	0.60	1.20	

- **Removed Minimum limits from all propagation delays and Output enable Time and Output Disable Time specifications.**

Existing datasheet

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_{PHL} t_{PLH}	Propagation Delay	0.90		13				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30	3.0	6.0	9.8	1.9	14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.0	3.5	5.3	0.8	5.7			
		1.65 ≤ V_{CC} ≤ 1.95	0.9	3.0	4.3	0.8	4.6		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70	0.8	2.0	2.8	0.7	3.0		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60	0.5	1.0	2.6	0.5	2.8			
t_{PZH} t_{PZL}	Output Enable Time	0.90		14				ns	C_L = 30 pF	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30	3.0	6.0	9.7	2.0	16.4		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.2	4.0	6.0	1.0	7.5		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95	1.0	3.0	4.5	0.9	5.0		S_1 = GND for t_{PZH}	
		2.30 ≤ V_{CC} < 2.70	0.8	2.0	3.0	0.7	3.4		S_1 = V_I for t_{PZL}	
		2.70 ≤ V_{CC} ≤ 3.60	0.5	1.2	2.6	0.4	2.9		V_I = 2 x V_{CC}	
t_{PHZ} t_{PLZ}	Output Disable Time	0.90		14				ns	C_L = 30 pF	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30	2.0	5.0	9.5	2.0	14.0		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.2	3.0	5.5	1.1	7.0		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95	1.0	2.0	5.6	0.8	5.8		S_1 = GND for t_{PHZ}	
		2.30 ≤ V_{CC} < 2.70	0.8	1.5	4.2	0.5	5.0		S_1 = V_I for t_{PLZ}	
		2.70 ≤ V_{CC} ≤ 3.60	0.5	1.0	3.9	0.4	4.2		V_I = 2 x V_{CC}	

New

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_{PHL} t_{PLH}	Propagation Delay	0.90		13				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30		6.0	9.8		14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		3.5	5.3		5.7			
		1.65 ≤ V_{CC} ≤ 1.95		3.0	4.3		4.6		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70		2.0	2.8		3.0		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60		1.0	2.6		2.8			
t_{PZH} t_{PZL}	Output Enable Time	0.90		14				ns	C_L = 30 pF	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30		6.0	9.7		16.4		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		4.0	6.0		7.5		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95		3.0	4.5		5.0		S_1 = GND for t_{PZH}	
		2.30 ≤ V_{CC} < 2.70		2.0	3.0		3.4		S_1 = V_I for t_{PZL}	
		2.70 ≤ V_{CC} ≤ 3.60		1.2	2.6		2.9		V_I = 2 x V_{CC}	
t_{PHZ} t_{PLZ}	Output Disable Time	0.90		14				ns	C_L = 30 pF	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30		5.0	9.5		14.0		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		3.0	5.5		7.0		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.6		5.8		S_1 = GND for t_{PHZ}	
		2.30 ≤ V_{CC} < 2.70		1.5	4.2		5.0		S_1 = V_I for t_{PLZ}	
		2.70 ≤ V_{CC} ≤ 3.60		1.0	3.9		4.2		V_I = 2 x V_{CC}	

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_{PHL} t_{PLH}	Propagation Delay	0.90		12				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30	2.0	5.9	10.0	1.0	14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.0	3.2	6.1	0.9	7.0			
		1.65 ≤ V_{CC} ≤ 1.95	1.0	2.0	5.2	0.7	6.2		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70	0.8	1.8	3.7	0.6	4.4		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60	0.7	1.5	3.3	0.5	3.8			

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_{PHL} t_{PLH}	Propagation Delay	0.90		12				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
		1.10 ≤ V_{CC} ≤ 1.30		5.9	10.0		14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		3.2	6.1		7.0			
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.2		6.2		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70		1.8	3.7		4.4		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60		1.5	3.3		3.8			

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C			T_A=-40 to 85°C		Units	Figure
				Min.	Typ.	Max.	Min.	Max.		
t_{PZL}, t_{PLZ}	Propagation Delay	0.90	C_L=15pF, R_U=R_D=1kΩ		13				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30	C_L=30pF, R_U=R_D=1kΩ	3.0	6.0	15.0	1.0	18.6		
		1.40 ≤ V_{CC} ≤ 1.60		1.0	3.2	8.7	1.0	9.7		
		1.65 ≤ V_{CC} ≤ 1.95	C_L=30pF, R_U=R_D=1kΩ	1.0	2.0	6.0	1.0	6.8		
		2.30 ≤ V_{CC} ≤ 2.70		0.8	1.2	3.6	0.7	4.7		
		2.70 ≤ V_{CC} ≤ 3.60		0.7	1.0	3.3	0.6	4.0		

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C			T_A=-40 to 85°C		Units	Figure
				Min.	Typ.	Max.	Min.	Max.		
t_{PZL}, t_{PLZ}	Propagation Delay	0.90	C_L=15pF, R_U=R_D=1kΩ		13				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30	C_L=30pF, R_U=R_D=1kΩ		6.0	15.0		18.6		
		1.40 ≤ V_{CC} ≤ 1.60			3.2	8.7		9.7		
		1.65 ≤ V_{CC} ≤ 1.95	C_L=30pF, R_U=R_D=1kΩ		2.0	6.0		6.8		
		2.30 ≤ V_{CC} ≤ 2.70			1.2	3.6		4.7		
		2.70 ≤ V_{CC} ≤ 3.60			1.0	3.3		4.0		

Qualification Plan:

QV DEVICE Name : NL17SG373DFT2G
RMS 65396
PACKAGE SC88

Test	Specification	Condition	Interval
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C	
HTSL	JESD22-A103	Ta=150°C	2016 hrs
TC	JESD22-A104	Ta= -65°C to +150°C	500 cyc
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc x 1.2	2016 hrs
ELFR	JESD22-A108	Ta=125°C, 100 % max rated Vcc x 1.2	48 hrs
RSH	JESD22- B106	Ta = 265C, 10 sec	

Estimated date for qualification completion: 30 April 2020

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	NL17SG373DFT2G
NC7WP14P6X	NL17SG373DFT2G
NC7SV19P6X	NL17SG373DFT2G
NC7SP157P6X	NL17SG373DFT2G
NC7SP58P6X	NL17SG373DFT2G
NC7SP57P6X	NL17SG373DFT2G
NC7WV04P6X	NL17SG373DFT2G
NC7SV157P6X	NL17SG373DFT2G
NC7SV57P6X	NL17SG373DFT2G
NC7WV14P6X	NL17SG373DFT2G
NC7WV17P6X	NL17SG373DFT2G
NC7SV58P6X	NL17SG373DFT2G
NC7WV07P6X	NL17SG373DFT2G
NC7SV11P6X	NL17SG373DFT2G
NC7SP19P6X	NL17SG373DFT2G
NL17SG373DFT2G	NL17SG373DFT2G

Japanese translation of the notification starts here.

通知の日本語訳はここから始まります。

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

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

ON Semiconductor®

初回製品 / プロセス変更通知

文書番号#：IPCN22964X
発行日：03 Apr 2020

変更件名：	データシート更新を伴う MiniGates のウェハー工場、組立拠点と材料、および検査変更 (SC88)
初回出荷予定日：	03 Oct 2020 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・セミコンダクター営業所または < SiewWan.Shee@onsemi.com> にお問い合わせください。
サンプル：	現地のオン・セミコンダクター営業所または PCN.Samples@onsemi.com にお問い合わせください。 サンプルは、この変更の初回通知、初回 PCN 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。
通知種別：	これは、お客様宛の初回製品 / プロセス変更通知 (IPCN) です。IPCN は、近日中に実施される変更に関する事前通知であり、変更の詳細および影響を受けるデバイスについての一般情報が記載されます。また、暫定的な信頼性認証計画も記載されます。 最終的な認定データおよび特性データは最終製品 / プロセス変更通知 (FPCN) に含まれます。この IPCN は、変更実施から少なくとも 90 日前に発行される最終製品 / プロセス変更通知 (FPCN) に先だって通知されます。ご不明な点がありましたら、PCN.Support@onsemi.com にお問い合わせください。
変更部品の識別：	NC7 製品においては、マーキングスタイルは異なるものになります。NL17 製品では、マーキングには変更はありません。NC7 および NL17 のいずれに対しても、リールラベル上の CS コードは US から JP に変更されます。
変更カテゴリ：	ウェハファブの変更, アセンブリの変更, 検査の変更
変更サブカテゴリ：	製造プロセスの変更, 材料の変更, データシート/製品資料の変更 , 出荷/梱包/マーキング, 製造拠点の移管

影響を受ける拠点：

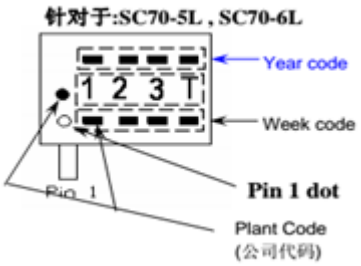
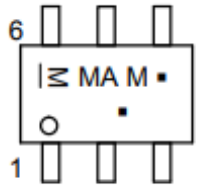
オン・セミコンダクター拠点：	外部製造工場 / 下請業者拠点：
Leshan Phoenix Semiconductor, China	HANA Microelectronics, China
ON Semiconductor Cebu, Philippines	Tower Semiconductor, Israel
ON Semiconductor Maine, United States	Towerjazz Semiconductor, Japan (Toyama)

説明および目的：

IPCN22964X 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。

For NC7 family:

	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
	Subcon China	**Onsemi Philippines**	**新規フロー**
製品マーキング変更	 *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.

For NL17 Family:

	変更前の表記 **(既存のフロー)**	変更後の表記 **(新規フロー)**
モールド・コンパウンド	Henkel GR640 HV-L1 and MC GE-200F HWG	Henkel GR640 HV-L1
ワイヤ	Au	Cu
リードフレーム	SC88 Lead frame	SC88 Lead frame with Vgroove
ダイソース	Foundry in Israel	Foundry in Japan

データシートの更新:

<u>データシートの変更</u>:

仕様および/または仕様条件の変更に関する新旧データシート間での比較を以下に示します。

- 変更箇所は赤色の丸で囲まれています。
- 旧データシートから変更される項目は赤色でハイライトされています。
- 新データシートで対応する値は緑色でハイライトされています。
- 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のように記述されます。

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。

NL17SG

- **最大定格電圧が 5.5V から 4.3V に変更。**

MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{CC}	DC Supply Voltage		−0.5 to +5.5	V
V_{IN}	DC Input Voltage		−0.5 to +4.6	V
V_{OUT}	DC Output Voltage	Output at High or Low State Power−Down Mode (V_{CC} = 0 V)	−0.5 to V_{CC} +0.5 −0.5 to +4.6	V

MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{CC}	DC Supply Voltage		−0.5 to +5.5	V
V_{IN}	DC Input Voltage	V_{CC} ≥ 0.9 V V_{CC} < 0.9 V	−0.5 to +5.5 −0.5 to +4.6	V
V_{OUT}	DC Output Voltage		−0.5 to V_{CC} + 0.5	V

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	−0.5 to +5.5	V
V_{IN}	DC Input Voltage	−0.5 to +4.6	V
V_{OUT}	DC Output Voltage	−0.5 to V_{CC} +0.5	V

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	−0.5 to +5.5	V
V_{IN}	DC Input Voltage	−0.5 to +5.5	V
V_{OUT}	DC Output Voltage	−0.5 to V_{CC} + 0.5	V

MAXIMUM RATINGS

Symbol	Characteristics		Value	Unit
V_{CC}	DC Supply Voltage	SC−88A (NLV) SC−74A, SC−88A, SOT−953, UDFN6	−0.5 to +5.5 −0.5 to +4.3	V
V_{IN}	DC Input Voltage	SC−88A (NLV) SC−74A, SC−88A, SOT−953, UDFN6	−0.5 to +4.6 −0.5 to +4.3	V
V_{OUT}	DC Output Voltage SC−88A (NLV),	Active−Mode (High or Low State) Tri−State Mode (Note 1) Power−Down Mode (V_{CC} = 0 V)	−0.5 to V_{CC} + 0.5 −0.5 to +4.6 −0.5 to +4.6	V
	DC Output Voltage SC−74A, SC−88A, SOT−953, UDFN6	Active−Mode (High or Low State) Tri−State Mode (Note 1) Power−Down Mode (V_{CC} = 0 V)	−0.5 to V_{CC} + 0.5 −0.5 to +4.3 −0.5 to +4.3	V

- **JEDEC 規格に合わせるために静電放電/ラッチアップを調整。**

Existing datasheet

V_{ESD}	ESD Withstand Voltage	Human Body Model (Note 2) Machine Model (Note 3)	>1500 >100	V
$I_{LATCHUP}$	Latchup Performance Above V_{CC} and Below GND at 125°C (Note 4)		±100	mA

V_{ESD}	ESD Withstand Voltage	Human Body Model (Note 2) Machine Model (Note 3)	>2000 >100	V
$I_{LATCHUP}$	Latch−up Performance above V_{CC} and below GND at 125°C (Note 4)		±75	mA

V_{ESD}	ESD Withstand Voltage Human Body Mode (Note 2) Machine Model (Note 3)		> 3000 > 200	V
$I_{LATCHUP}$	Latchup Performance Above V_{CC} and Below GND at 125°C (Note 4)		±100	mA

V_{ESD}	ESD Withstand Voltage	Human Body Model (Note 2) Machine Model (Note 3)	>2000 >150	V
$I_{LATCHUP}$	Latchup Performance	Above V_{CC} and Below GND at 125°C (Note 4)	±100	mA

New

V_{ESD}	ESD Withstand Voltage (Note 3)	Human Body Model Charged Device Model	2000 1000	V
$I_{Latchup}$	Latchup Performance (Note 4)		±100	mA

- **入力の正のしきい値電圧の仕様から下限値を削除。**
- **負のしきい値電圧の仕様から上限値を削除。**
- **規格をファミリー仕様に調整してヒステリシス電圧上限値を修正。**

Existing datasheet

Symbol	Parameter	Condition	V_{CC} (V)	T_A = 25°C Min	T_A = 25°C Typ	T_A = 25°C Max	−55°C ≤ T_A ≤ 125°C Min	−55°C ≤ T_A ≤ 125°C Max	Unit
V_{T+}	Positive−Going Input Threshold Voltage		0.9	0.64	0.7	0.86	0.62	0.87	V
			1.1	0.73	0.81	0.95	0.71	1	
			1.4	0.86	0.94	1.16	0.84	1.2	
			1.65	0.95	1.06	1.25	0.94	1.3	
			2.3	1.22	1.36	1.6	1.18	1.65	
			3.0	1.51	1.8	2.05	1.38	2.1	
V_{T-}	Negative−Going Input Threshold Voltage		0.9	0.09	0.23	0.30	0.08	0.33	V
			1.1	0.15	0.33	0.39	0.12	0.43	
			1.4	0.3	0.47	0.54	0.25	0.55	
			1.65	0.35	0.6	0.65	0.3	0.65	
			2.3	0.55	0.85	0.88	0.5	0.88	
			3.0	0.95	1.13	1.16	0.9	1.16	
V_H	Hysteresis Voltage		0.9	0.15	0.5	0.75	0.2	0.8	V
			1.1	0.15	0.5	0.75	0.2	0.8	
			1.4	0.15	0.5	0.75	0.2	0.8	
			1.65	0.15	0.5	0.75	0.2	0.8	
			2.3	0.15	0.5	0.75	0.2	0.8	
			3.0	0.25	0.65	0.85	0.3	0.9	

New

Symbol	Parameter	Conditions	V_{CC} (V)	T_A = 25 °C Min	T_A = 25 °C Typ	T_A = 25 °C Max	T_A = -55°C to +125°C Min	T_A = -55°C to +125°C Max	Unit
V_{T+}	Positive Input Threshold Voltage		0.9	-	0.7	0.86	-	0.86	V
			1.1 to 1.3	-	0.81	0.95	-	0.95	
			1.4 to 1.6	-	0.94	1.16	-	1.16	
			1.65 – 1.95	-	1.06	1.3	-	1.3	
			2.3 to < 2.7	-	1.36	1.73	-	1.73	
			2.7 to 3.6	-	1.8	2.24	-	2.24	
V_{T-}	Negative Input Threshold Voltage		0.9	0.10	0.23	-	0.10	-	V
			1.1 to 1.3	0.15	0.33	-	0.15	-	
			1.4 to 1.6	0.3	0.47	-	0.3	-	
			1.65 – 1.95	0.35	0.6	-	0.35	-	
			2.3 to < 2.7	0.55	0.85	-	0.55	-	
			2.7 to 3.6	0.95	1.13	-	0.95	-	
V_H	Low-Level Input Voltage		0.9	0.15	0.27	0.7	0.15	0.7	V
			1.1 to 1.3	0.2	0.35	0.8	0.2	0.8	
			1.4 to 1.6	0.25	0.41	0.86	0.25	0.86	
			1.65 – 1.95	0.30	0.46	0.9	0.30	0.9	
			2.3 to < 2.7	0.40	0.56	1.05	0.40	1.05	
			2.7 to 3.6	0.49	0.59	1.1	0.49	1.1	

- **電源オフリーク電流仕様を追加。**
- **電源オフリーク電流仕とのクロスオーバーを除去するために入力リーク電流仕様を調整。**

I_{OFF}	Power Off Leakage Current	V_{IN} = 3.6 V or V_{OUT} = 3.6 V	0	-	-	1.0	-	5.0	μA

I_{IN}	Input Leakage Current	0 ≤ V_{IN} ≤ 3.6 V	0 to 3.6		±0.1		±1.0	μA

I_{IN}	Input Leakage Current	0 ≤ V_{IN} ≤ 3.6 V	0.9 to 3.6		±0.1		±1.0	μA

- **伝播遅延仕様の 0.9V における規格を削除。**
- **すべての伝播遅延仕様から下限値を削除。**

Existing datasheet

Symbol	Parameter	Test Condition	V_{CC} (V)	T_A = 25° C Min	T_A = 25° C Typ	T_A = 25° C Max	T_A = -55°C to +125°C Min	T_A = -55°C to +125°C Max	Unit
t_{PLH}, t_{PHL}	Propagation Delay, A or B to Y	C_L = 10 pF, R_L = 1 MΩ	0.9	-	12.2	14.4	-	18.0	ns
			1.1 to 1.3	-	8.8	12.4	-	16.2	
			1.4 to 1.6	-	5.0	8.5	-	10.0	
			1.65 to 1.95	-	3.6	6.2	-	6.7	
			2.3 to 2.7	-	2.7	3.9	-	4.4	
			3.0 to 3.6	-	2.1	3.1	-	3.7	
		C_L = 15 pF, R_L = 1 MΩ	0.9	-	13.0	16.0	-	18.0	ns
			1.1 to 1.3	-	7.8	12.0	-	16.0	
			1.4 to 1.6	-	5.9	9.3	-	11.2	
			1.65 to 1.95	-	4.5	6.9	-	7.1	
			2.3 to 2.7	-	3.0	4.4	-	5.0	
			3.0 to 3.6	-	2.4	3.4	-	3.9	
		C_L = 30 pF, R_L = 1 MΩ	0.9	-	14.0	17.2	-	20.0	ns
			1.1 to 1.3	-	11.0	14.1	-	17.8	
			1.4 to 1.6	-	8.0	12.1	-	15.9	
			1.65 to 1.95	-	6.0	9.2	-	9.6	
			2.3 to 2.7	-	3.9	5.7	-	6.1	
			3.0 to 3.6	-	3.0	4.4	-	4.8	

New

Symbol	Parameter	Test Condition	V_{CC} (V)	T_A = 25° C Min	T_A = 25° C Typ	T_A = 25° C Max	T_A = -55°C to +125°C Min	T_A = -55°C to +125°C Max	Unit
t_{PLH}, t_{PHL}	Propagation Delay, A or B to Y	C_L = 10 pF, R_L = 1 MΩ	0.9	-	12.2	-	-	-	ns
			1.1 to 1.3	-	8.8	12.4	-	16.2	
			1.4 to 1.6	-	5.0	8.5	-	10.0	
			1.65 to 1.95	-	3.6	6.2	-	6.7	
			2.3 to 2.7	-	2.7	3.9	-	4.4	
			3.0 to 3.6	-	2.1	3.1	-	3.7	
		C_L = 15 pF, R_L = 1 MΩ	0.9	-	13.0	-	-	-	ns
			1.1 to 1.3	-	7.8	12.0	-	16.0	
			1.4 to 1.6	-	5.9	9.3	-	11.2	
			1.65 to 1.95	-	4.5	6.9	-	7.1	
			2.3 to 2.7	-	3.0	4.4	-	5.0	
			3.0 to 3.6	-	2.4	3.4	-	3.9	
		C_L = 30 pF, R_L = 1 MΩ	0.9	-	14.0	-	-	-	ns
			1.1 to 1.3	-	11.0	14.1	-	17.8	
			1.4 to 1.6	-	8.0	12.1	-	15.9	
			1.65 to 1.95	-	6.0	9.2	-	9.6	
			2.3 to 2.7	-	3.9	5.7	-	6.1	
			3.0 to 3.6	-	3.0	4.4	-	4.8	

Symbol	Parameter	Test 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	C_L = 10 pF, R_L = 1 MΩ	0.9	–	27.3	–	–	–	ns
			1.1 to 1.3	–	13.0	22.6	1.0	35.9	
			1.4 to 1.6	–	7.5	10.5	1.0	11.3	
			1.65 to 1.95	–	6.0	7.8	1.0	8.2	
			2.3 to 2.7	–	4.3	5.4	1.0	5.8	
			3.0 to 3.6	–	3.5	4.4	1.0	4.6	
		C_L = 15 pF, R_L = 1 MΩ	0.9	–	29.5	–	–	–	ns
			1.1 to 1.3	–	14.3	25.1	1.0	41.8	
			1.4 to 1.6	–	8.0	11.5	1.0	12.6	
			1.65 to 1.95	–	6.3	8.4	1.0	8.7	
			2.3 to 2.7	–	4.6	5.7	1.0	6.1	
			3.0 to 3.6	–	3.7	4.6	1.0	5.0	
		C_L = 30 pF, R_L = 1 MΩ	0.9	–	40.5	–	–	–	ns
			1.1 to 1.3	–	19.6	35.7	1.0	58.1	
			1.4 to 1.6	–	10.7	15.8	1.0	17.6	
			1.65 to 1.95	–	7.8	10.7	1.0	11.7	
			2.3 to 2.7	–	5.4	6.9	1.0	8.1	
			3.0 to 3.6	–	4.3	5.2	1.0	6.1	

Symbol	Parameter	Test 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 or B to Y	C_L = 10 pF, R_L = 1 MΩ	0.9	-	12.2	-	-	-	ns
			1.1 to 1.3	-	8.8	12.4	-	16.2	
			1.4 to 1.6	-	5.0	8.5	-	10.0	
			1.65 to 1.95	-	3.6	6.2	-	6.7	
			2.3 to 2.7	-	2.7	3.9	-	4.4	
			3.0 to 3.6	-	2.1	3.1	-	3.7	
		C_L = 15 pF, R_L = 1 MΩ	0.9	-	13.0	-	-	-	ns
			1.1 to 1.3	-	7.8	12.0	-	16.0	
			1.4 to 1.6	-	5.9	9.3	-	11.2	
			1.65 to 1.95	-	4.5	6.9	-	7.1	
			2.3 to 2.7	-	3.0	4.4	-	5.0	
			3.0 to 3.6	-	2.4	3.4	-	3.9	
		C_L = 30 pF, R_L = 1 MΩ	0.9	-	14.0	-	-	-	ns
			1.1 to 1.3	-	11.0	14.1	-	17.8	
			1.4 to 1.6	-	8.0	12.1	-	15.9	
			1.65 to 1.95	-	6.0	9.2	-	9.6	
			2.3 to 2.7	-	3.9	5.7	-	6.1	
			3.0 to 3.6	-	3.0	4.4	-	4.8	

NC7SP

- **新規プロセスに合わせて絶対最大定格電圧を調整。**

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})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.6V

New

Absolute Maximum Ratings(Note 1)

Supply Voltage (V_{CC})	−0.5V to +4.3V
DC Input Voltage (V_{IN})	−0.5V to +4.3V
DC Output Voltage (V_{OUT})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.3V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.6	V
V_{IN}	DC Input Voltage		-0.5	4.6	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.6	V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.3	V
V_{IN}	DC Input Voltage		-0.5	4.3	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.3	V

- **新規のダイを反映するために消費電力を調整。**
- **新規のダイを反映するために熱抵抗を調整。**

Existing datasheet

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

θ_{JA}	Thermal Resistance	SC70-5		425		°C/W
		MicroPak™-6		500		
		MicroPak2™-6		560		

New

P_D	Power Dissipation In Still Air	SC-74A		225	mW
		SC70-5		190	
		MicroPak™-6		327	
		MicroPak2™-6		327	

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

- **H レベル入力電圧と L レベル入力電圧の仕様から 0.9V における規格を削除。**
- **H レベル出力電圧と L レベル出力電圧の仕様から 0.9V における規格を削除。**

Existing datasheet

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		0.65 x V_{CC}		0.65 x V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		0.65 x V_{CC}		0.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.65 x V_{CC}		0.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		0.65 x V_{CC}		0.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		3.00 ≤ V_{CC} ≤ 3.60		2.1		2.1		
V_{IL}	LOW Level Input Voltage	0.90			0.35 x V_{CC}		0.35 x V_{CC}	V
		1.10 ≤ V_{CC} ≤ 1.30			0.35 x V_{CC}		0.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			0.35 x V_{CC}		0.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			0.35 x V_{CC}		0.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		3.00 ≤ V_{CC} ≤ 3.60			0.9		0.9	
V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-20µA	V_{CC} - 0.1		V_{CC} - 0.1		V
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC} - 0.1		V_{CC} - 0.1		
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC} - 0.1		V_{CC} - 0.1		
		1.65 ≤ 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	I_{OH}=-0.5mA	0.75 x V_{CC}		0.75 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-1mA	1.07		0.99		
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-1.5mA	1.24		1.22		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-2.1mA	1.95		1.87		
		3.00 ≤ V_{CC} ≤ 3.60	I_{OH}=-2.6mA	2.61		2.55		
V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=20µA		0.1		0.1	V
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.1		0.1	
		1.65 ≤ 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	I_{OL}=0.5mA		0.30 x V_{CC}		0.30 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=1mA		0.31		0.37	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=1.5mA		0.31		0.35	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=2.1mA		0.31		0.33	
		3.00 ≤ V_{CC} ≤ 3.60	I_{OL}=2.6mA		0.31		0.33	

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		V_{CC}		V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		0.65 x V_{CC}		0.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.65 x V_{CC}		0.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		0.65 x V_{CC}		0.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		3.00 ≤ V_{CC} ≤ 3.60		2.1		2.1		
V_{IL}	LOW Level Input Voltage	0.90			GND		GND	V
		1.10 ≤ V_{CC} ≤ 1.30			0.35 x V_{CC}		0.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			0.35 x V_{CC}		0.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			0.35 x V_{CC}		0.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		3.00 ≤ V_{CC} ≤ 3.60			0.9		0.9	
V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-20µA					V
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC} - 0.1		V_{CC} - 0.1		
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC} - 0.1		V_{CC} - 0.1		
		1.65 ≤ 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	I_{OH}=-0.5mA	0.75 x V_{CC}		0.75 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-1mA	1.07		0.99		
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-1.5mA	1.24		1.22		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-2.1mA	1.95		1.87		
		3.00 ≤ V_{CC} ≤ 3.60	I_{OH}=-2.6mA	2.61		2.55		
V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=20µA					V
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.1		0.1	
		1.65 ≤ 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	I_{OL}=0.5mA		0.30 x V_{CC}		0.30 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=1mA		0.31		0.37	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=1.5mA		0.31		0.35	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=2.1mA		0.31		0.33	
		3.00 ≤ V_{CC} ≤ 3.60	I_{OL}=2.6mA		0.31		0.33	

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_{IH}	HIGH Level Input Voltage	0.90	0.65 x V_{CC}		0.65 x V_{CC}		V	
		1.10 ≤ V_{CC} ≤ 1.30	0.65 x V_{CC}		0.65 x V_{CC}			
		1.40 ≤ V_{CC} ≤ 1.60	0.65 x V_{CC}		0.65 x V_{CC}			
		1.65 ≤ V_{CC} ≤ 1.95	0.65 x V_{CC}		0.65 x V_{CC}			
		2.30 ≤ V_{CC} ≤ 2.70	1.6		1.6			
		3.00 ≤ V_{CC} ≤ 3.60	2.1		2.1			
V_{IL}	LOW Level Input Voltage	0.90		0.35 x V_{CC}		0.35 x V_{CC}	V	
		1.10 ≤ V_{CC} ≤ 1.30		0.35 x V_{CC}		0.35 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.35 x V_{CC}		0.35 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		0.35 x V_{CC}		0.35 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		0.7		0.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.9		0.9		
V_{OL}	LOW Level Output Voltage	0.90		0.1		0.1	V	I_{OL} = 20 µA
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.1		0.1		
		1.65 ≤ 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 x V_{CC}		0.30 x V_{CC}		I_{OL} = 0.5 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.31		0.37		I_{OL} = 1 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.31		0.35		I_{OL} = 1.5 mA
		2.30 ≤ V_{CC} ≤ 2.70		0.31		0.33		I_{OL} = 2.1 mA
		3.00 ≤ V_{CC} ≤ 3.60		0.31		0.33		I_{OL} = 2.6 mA

New

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_{IH}	HIGH Level Input Voltage	0.90	V_{CC}		V_{CC}		V	
		1.10 ≤ V_{CC} ≤ 1.30	0.65 x V_{CC}		0.65 x V_{CC}			
		1.40 ≤ V_{CC} ≤ 1.60	0.65 x V_{CC}		0.65 x V_{CC}			
		1.65 ≤ V_{CC} ≤ 1.95	0.65 x V_{CC}		0.65 x V_{CC}			
		2.30 ≤ V_{CC} ≤ 2.70	1.6		1.6			
		3.00 ≤ V_{CC} ≤ 3.60	2.1		2.1			
V_{IL}	LOW Level Input Voltage	0.90		GND		GND	V	
		1.10 ≤ V_{CC} ≤ 1.30		0.35 x V_{CC}		0.35 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		0.35 x V_{CC}		0.35 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		0.35 x V_{CC}		0.35 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		0.7		0.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.9		0.9		
V_{OL}	LOW Level Output Voltage	0.90					V	I_{OL} = 20 µA
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.1		0.1		
		1.65 ≤ 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 x V_{CC}		0.30 x V_{CC}		I_{OL} = 0.5 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.31		0.37		I_{OL} = 1 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.31		0.35		I_{OL} = 1.5 mA
		2.30 ≤ V_{CC} ≤ 2.70		0.31		0.33		I_{OL} = 2.1 mA
		3.00 ≤ V_{CC} ≤ 3.60		0.31		0.33		I_{OL} = 2.6 mA

- **正のしきい値電圧の仕様から下限値と 0.90V における規格を削除。**
- **負のしきい値電圧の仕様から上限値と 0.90V における規格を削除。**
- **ヒステリシス電圧の 0.90V における規格を削除。**

DC Electrical Characteristics

Symbol	Parameter	Conditions	V_{CC} (V)	T_A=+25°C Min.	T_A=+25°C Max.	T_A=−40°C to +85°C Min.	T_A=−40°C to +85°C Max.	Units
V_P	Positive Threshold Voltage		0.90	0.30	0.60	0.30	0.60	V
			1.10	0.40	1.00	0.40	1.00	
			1.40	0.50	1.20	0.50	1.20	
			1.65	0.70	1.50	0.70	1.50	
			2.30	1.00	1.90	1.00	1.90	
			3.00	1.50	2.60	1.50	2.60	
V_N	Negative Threshold Voltage		0.90	0.10	0.60	0.10	0.60	V
			1.10	0.15	0.70	0.15	0.70	
			1.40	0.20	0.80	0.20	0.80	
			1.65	0.25	0.90	0.25	0.90	
			2.30	0.40	1.15	0.40	1.15	
			3.00	0.6	1.50	0.60	1.50	
V_H	Hysteresis Voltage		0.90	0.07	0.50	0.07	0.50	V
			1.10	0.08	0.60	0.08	0.60	
			1.40	0.09	0.80	0.09	0.80	
			1.65	0.10	1.00	0.10	1.00	
			2.30	0.25	1.10	0.25	1.10	
			3.00	0.60	1.80	0.60	1.80	

DC Electrical Characteristics

Symbol	Parameter	Conditions	V_{CC} (V)	T_A=+25°C Min.	T_A=+25°C Max.	T_A=−40°C to +85°C Min.	T_A=−40°C to +85°C Max.	Units
V_P	Positive Threshold Voltage		0.90					V
			1.10		1.00		1.00	
			1.40		1.20		1.20	
			1.65		1.50		1.50	
			2.30		1.90		1.90	
			3.00		2.60		2.60	
V_N	Negative Threshold Voltage		0.90					V
			1.10	0.15		0.15		
			1.40	0.20		0.20		
			1.65	0.25		0.25		
			2.30	0.40		0.40		
			3.00	0.6		0.60		
V_H	Hysteresis Voltage		0.90					V
			1.10	0.08	0.60	0.08	0.60	
			1.40	0.09	0.80	0.09	0.80	
			1.65	0.10	1.00	0.10	1.00	
			2.30	0.25	1.10	0.25	1.10	
			3.00	0.60	1.80	0.60	1.80	

- **すべての伝播遅延と出力イネーブル時間と出力デセイブル時間の仕様から下限値を削除。**

Existing datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	Typ	Max	T_A = −40°C to +85°C Min	Max	Units	Conditions	Figure Number
t_{PLH}, t_{PHL}	Propagation Delay	0.90		24						
		1.10 ≤ V_{CC} ≤ 1.30	4.0	9	18.7	3.5	30.9	ns	C_L = 10 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60	2.0	6	12.4	1.5	13.9			
		1.65 ≤ V_{CC} ≤ 1.95	1.5	5	9.6	1.0	12.1			
		2.30 ≤ V_{CC} ≤ 2.70	1.0	4	9.0	0.8	10.0			
		3.00 ≤ V_{CC} ≤ 3.60	1.0	3	8.7	0.5	9.0			
t_{PZL}, t_{PLZ}	Propagation Delay	0.90		27						
		1.10 ≤ V_{CC} ≤ 1.30	5.0	10	20.2	4.5	33.9	ns	C_L = 15 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60	3.0	7	13.3	2.5	16.0			
		1.65 ≤ V_{CC} ≤ 1.95	2.0	5	10.3	2.0	12.6			
		2.30 ≤ V_{CC} ≤ 2.70	1.5	4	9.4	1.0	10.2			
		3.00 ≤ V_{CC} ≤ 3.60	1.0	3	9.1	0.5	9.7			
t_{PZL}, t_{PLZ}	Propagation Delay	0.90		34						
		1.10 ≤ V_{CC} ≤ 1.30	6.0	12	24.0	5.0	43.0	ns	C_L = 30 pF, R_U = 5000 Ω, R_D = 5000 Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60	4.0	8	16.0	3.0	18.0			
		1.65 ≤ V_{CC} ≤ 1.95	2.0	6	12.0	2.0	14.0			
		2.30 ≤ V_{CC} ≤ 2.70	1.0	5	11.0	1.0	12.0			
		3.00 ≤ V_{CC} ≤ 3.60	0.8	4	10.0	0.5	11.0			

New

AC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	Typ	Max	T_A = −40°C to +85°C Min	Max	Units	Conditions	Figure Number
t_{PLH}, t_{PHL}	Propagation Delay	0.90		24						
		1.10 ≤ V_{CC} ≤ 1.30		9	18.7		30.9	ns	C_L = 10 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60		6	12.4		13.9			
		1.65 ≤ V_{CC} ≤ 1.95		5	9.6		12.1			
		2.30 ≤ V_{CC} ≤ 2.70		4	9.0		10.0			
		3.00 ≤ V_{CC} ≤ 3.60		3	8.7		9.0			
t_{PZL}, t_{PLZ}	Propagation Delay	0.90		27						
		1.10 ≤ V_{CC} ≤ 1.30		10	20.2		33.9	ns	C_L = 15 pF, R_U = 5000Ω, R_D = 5000Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60		7	13.3		16.0			
		1.65 ≤ V_{CC} ≤ 1.95		5	10.3		12.6			
		2.30 ≤ V_{CC} ≤ 2.70		4	9.4		10.2			
		3.00 ≤ V_{CC} ≤ 3.60		3	9.1		9.7			
t_{PZL}, t_{PLZ}	Propagation Delay	0.90		34						
		1.10 ≤ V_{CC} ≤ 1.30		12	24.0		43.0	ns	C_L = 30 pF, R_U = 5000 Ω, R_D = 5000 Ω	Figures 1, 2
		1.40 ≤ V_{CC} ≤ 1.60		8	16.0		18.0			
		1.65 ≤ V_{CC} ≤ 1.95		6	12.0		14.0			
		2.30 ≤ V_{CC} ≤ 2.70		5	11.0		12.0			
		3.00 ≤ V_{CC} ≤ 3.60		4	10.0		11.0			

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	Typ.	T_A=-40 to +85°C Min.	Typ.	Min.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.5	12.0	23.4	5.0	51.1		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	13.8	3.0	17.7		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	10.6	2.0	14.0		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	7.6	1.0	9.9		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	6.4	0.5	8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.4	5.0	51.9		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	14.5	3.0	17.9		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	11.7	2.0	14.7		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	9.1	1.0	11.1		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	8.1	0.5	10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.8	5.0	53.5		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	17.1	3.0	21.1		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	16.5	2.0	20.5		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	15.2	1.0	16.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	14.8	0.5	16.3		

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C Min.	Typ.	Max.	T_A=-40 to +85°C Min.	Max.	Units	Figure
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			12.0	23.4		51.1		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	13.8		17.7		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	10.6		14.0		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	7.6		9.9		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	6.4		8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	24.4		51.9		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	14.5		17.9		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	11.7		14.7		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	9.1		11.1		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	8.1		10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω, R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	24.8		53.5		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	17.1		21.1		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	16.5		20.5		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	15.2		16.7		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	14.8		16.3		

- **すべての伝播遅延と出力イネーブル時間と出力デセイブル時間から下限値を削除。**

Existing datasheet

AC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C			T_A=-40 to +85°C		Units	Figure
				Min.	Typ.	Max.	Min.	Max.		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=10pF, R_L=1MΩ		26				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		4.0	10.0	19.1	3.5	39.6		
		1.40 ≤ V_{CC} ≤ 1.60		2.0	6.0	11.2	1.5	14.5		
		1.65 ≤ V_{CC} ≤ 1.95		1.5	5.0	8.6	1.0	11.6		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	4.0	6.3	0.8	8.2		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	5.3	0.5	7.2		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		29				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		4.0	8.0	17.5	3.5	40.4		
		1.40 ≤ V_{CC} ≤ 1.60		2.0	6.0	11.9	1.5	14.8		
		1.65 ≤ V_{CC} ≤ 1.95		1.5	5.0	9.7	1.0	12.3		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	4.0	7.7	0.8	10.5		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	6.9	0.5	8.6		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		4.0	8.0	20.5	3.5	42.0		
		1.40 ≤ V_{CC} ≤ 1.60		2.0	6.0	15.3	1.5	18.0		
		1.65 ≤ V_{CC} ≤ 1.95		1.5	5.0	14.7	1.0	17.8		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	4.0	13.7	0.8	15.0		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	13.5	0.5	14.8		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=15pF, R_L=1MΩ		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.0	10.0	20.5	4.5	42.5		
		1.40 ≤ V_{CC} ≤ 1.60		3.0	7.0	11.8	2.5	15.4		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.0	9.1	2.0	12.2		
		2.30 ≤ V_{CC} ≤ 2.70		1.5	4.0	6.6	1.0	8.6		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	5.6	0.5	7.5		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		31				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.0	11.0	18.2	4.5	43.3		
		1.40 ≤ V_{CC} ≤ 1.60		3.0	7.0	12.5	2.5	15.5		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.0	10.2	2.0	12.9		
		2.30 ≤ V_{CC} ≤ 2.70		1.5	4.0	8.0	1.0	9.9		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	7.2	0.5	8.9		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		30				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.0	11.0	21.6	4.5	44.9		
		1.40 ≤ V_{CC} ≤ 1.60		3.0	7.0	15.9	2.5	18.8		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.0	15.2	2.0	18.2		
		2.30 ≤ V_{CC} ≤ 2.70		1.5	4.0	14.1	1.0	15.4		
		3.00 ≤ V_{CC} ≤ 3.60		1.0	3.0	13.9	0.5	15.1		

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New

AC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C			T_A=-40 to +85°C		Units	Figure
				Min.	Typ.	Max.	Min.	Max.		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=10pF, R_L=1MΩ		26				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			10.0	26		39.6		
		1.40 ≤ V_{CC} ≤ 1.60			6.0	11.2		14.5		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	8.6		11.6		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	6.3		8.2		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	5.3		7.2		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		29				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			8.0	26		40.4		
		1.40 ≤ V_{CC} ≤ 1.60			6.0	11.9		14.8		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	9.7		12.3		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	7.7		10.5		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	6.9		8.6		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=10pF, R_U=5000Ω R_D=5000Ω		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			8.0	20.5		42.0		
		1.40 ≤ V_{CC} ≤ 1.60			6.0	15.3		18.0		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	14.7		17.8		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	13.7		15.0		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	13.5		14.8		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=15pF, R_L=1MΩ		28				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			10.0	27		42.5		
		1.40 ≤ V_{CC} ≤ 1.60			7.0	11.8		15.4		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	9.1		12.2		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	6.6		8.6		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	5.6		7.5		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		31				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			11.0	27		43.3		
		1.40 ≤ V_{CC} ≤ 1.60			7.0	12.5		15.5		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	10.2		12.9		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	8.0		9.9		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	7.2		8.9		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=15pF, R_U=5000Ω R_D=5000Ω		30				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			11.0	21.6		44.9		
		1.40 ≤ V_{CC} ≤ 1.60			7.0	15.9		18.8		
		1.65 ≤ V_{CC} ≤ 1.95			5.0	15.2		18.2		
		2.30 ≤ V_{CC} ≤ 2.70			4.0	14.1		15.4		
		3.00 ≤ V_{CC} ≤ 3.60			3.0	13.9		15.1		

Continued on following page...

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C			T_A=-40 to +85°C		Units	Figure
				Min.	Typ.	Min.	Typ.	Min.		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		5.5	12.0	23.4	5.0	51.1		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	13.8	3.0	17.7		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	10.6	2.0	14.0		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	7.6	1.0	9.9		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	6.4	0.5	8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.4	5.0	51.9		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	14.5	3.0	17.9		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	11.7	2.0	14.7		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	9.1	1.0	11.1		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	8.1	0.5	10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30		6.0	13.0	24.8	5.0	53.5		
		1.40 ≤ V_{CC} ≤ 1.60		4.0	8.0	17.1	3.0	21.1		
		1.65 ≤ V_{CC} ≤ 1.95		2.0	6.0	16.5	2.0	20.5		
		2.30 ≤ V_{CC} ≤ 2.70		1.0	5.0	15.2	1.0	16.7		
		3.00 ≤ V_{CC} ≤ 3.60		0.8	4.0	14.8	0.5	16.3		

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC}	Conditions	T_A=+25°C			T_A=-40 to +85°C		Units	Figure
				Min.	Typ.	Min.	Typ.	Min.		
t_{PHL}, t_{PLH}	Propagation Delay	0.90	C_L=30pF, R_L=1MΩ		34				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			12.0	30		51.1		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	13.8		17.7		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	10.6		14.0		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	7.6		9.9		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	6.4		8.9		
t_{PZL}, t_{PZH}	Output Enable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		37				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	30		51.9		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	14.5		17.9		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	11.7		14.7		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	9.1		11.1		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	8.1		10.1		
t_{PHZ}, t_{PLZ}	Output Disable Time	0.90	C_L=30pF, R_U=5000Ω R_D=5000Ω		36				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30			13.0	24.8		53.5		
		1.40 ≤ V_{CC} ≤ 1.60			8.0	17.1		21.1		
		1.65 ≤ V_{CC} ≤ 1.95			6.0	16.5		20.5		
		2.30 ≤ V_{CC} ≤ 2.70			5.0	18.5		16.7		
		3.00 ≤ V_{CC} ≤ 3.60			4.0	14.8		16.3		

NC7SV/WV/WP

- **新規プロセスに合わせて絶対最大定格電圧を調整。**

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})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.6V

New

Absolute Maximum Ratings(Note 1)

Supply Voltage (V_{CC})	−0.5V to +4.3V
DC Input Voltage (V_{IN})	−0.5V to +4.3V
DC Output Voltage (V_{OUT})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.3V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.6	V
V_{IN}	DC Input Voltage		-0.5	4.6	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.6	V

Symbol	Parameter		Min.	Max.	Unit
V_{CC}	Supply Voltage		-0.5	4.3	V
V_{IN}	DC Input Voltage		-0.5	4.3	V
V_{OUT}	DC Output Voltage	HIGH or LOW State[4]	-0.5	V_{CC} to +0.5	V
		V_{CC}=0V	-0.5	4.3	V

- **新規のダイを反映するために消費電力を調整。**
- **新規のダイを反映するために熱抵抗を調整。**

Existing datasheet

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

θ_{JA}	Thermal Resistance	SC70-5		425		°C/W
		MicroPak™-6		500		
		MicroPak2™-6		560		

New

P_D	Power Dissipation In Still Air	SC-74A		225	mW
		SC70-5		190	
		MicroPak™-6		327	
		MicroPak2™-6		327	

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

- **H レベル入力電圧と L レベル入力電圧の仕様から 0.9V における規格を調整。**
- **H レベル出力電圧と L レベル出力電圧の仕様から 0.9V における規格を調整と削除。**

Existing datasheet

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C Min.	T_A=25°C Max.	T_A=-40 to 85°C Min.	T_A=-40 to 85°C Max.	Units
V_{IH}	HIGH Level Input Voltage	0.90		.65 x V_{CC}		.65 x V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		.65 x V_{CC}		.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		.65 x V_{CC}		.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		.65 x V_{CC}		.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		2.70 ≤ V_{CC} ≤ 3.60		2.0		2.0		
V_{IL}	LOW Level Input Voltage	0.90			.35 x V_{CC}		.35 x V_{CC}	V
		1.10 ≤ V_{CC} ≤ 1.30			.35 x V_{CC}		.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			.35 x V_{CC}		.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			.35 x V_{CC}		.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		2.70 ≤ V_{CC} ≤ 3.60			0.8		0.8	

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C Min.	T_A=25°C Max.	T_A=-40 to 85°C Min.	T_A=-40 to 85°C Max.	Units
V_{IH}	HIGH Level Input Voltage	0.90		V_{CC}		V_{CC}		V
		1.10 ≤ V_{CC} ≤ 1.30		.65 x V_{CC}		.65 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60		.65 x V_{CC}		.65 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95		.65 x V_{CC}		.65 x V_{CC}		
		2.30 ≤ V_{CC} ≤ 2.70		1.6		1.6		
		2.70 ≤ V_{CC} ≤ 3.60		2.0		2.0		
V_{IL}	LOW Level Input Voltage	0.90			GND		GND	V
		1.10 ≤ V_{CC} ≤ 1.30			.35 x V_{CC}		.35 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60			.35 x V_{CC}		.35 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95			.35 x V_{CC}		.35 x V_{CC}	
		2.30 ≤ V_{CC} ≤ 2.70			0.7		0.7	
		2.70 ≤ V_{CC} ≤ 3.60			0.8		0.8	

ON Semiconductor®

初回製品 / プロセス変更通知

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Existing datasheet

V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-100µA		V_{CC}-0.1		V_{CC}-0.1	V
		1.10 ≤ V_{CC} ≤ 1.30			V_{CC}-0.1		V_{CC}-0.1	
		1.40 ≤ V_{CC} ≤ 1.60			V_{CC}-0.2		V_{CC}-0.2	
		1.65 ≤ V_{CC} ≤ 1.95			V_{CC}-0.2		V_{CC}-0.2	
		2.30 ≤ V_{CC} ≤ 2.70			V_{CC}-0.2		V_{CC}-0.2	
		2.70 ≤ V_{CC} ≤ 3.60			V_{CC}-0.2		V_{CC}-0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OH}=-2mA	.75 x V_{CC}		.75 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-4mA	.75 x V_{CC}		.75 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-6mA	1.25		1.25		
		2.30 ≤ V_{CC} ≤ 2.70		2.00		2.00		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-12mA	1.8		1.8		
		2.70≤ V_{CC} ≤ 3.60		2.2		2.2		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-18mA	1.7		1.7		
		2.70 ≤ V_{CC} ≤ 3.60		2.4		2.4		
		2.70 ≤ V_{CC} ≤ 3.60	I_{OH}=-24mA	2.2		2.2		

V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=100µA		0.1		0.1	V
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.2		0.2	
		1.65 ≤ V_{CC} ≤ 1.95			0.2		0.2	
		2.30 ≤ V_{CC} ≤ 2.70			0.2		0.2	
		2.70 ≤ V_{CC} ≤ 3.60			0.2		0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OL}=2mA		0.25 x V_{CC}		0.25 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=4mA		0.25 x V_{CC}		0.25 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=6mA		0.3		0.3	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=12mA		0.4		0.4	
		2.70 ≤ V_{CC} ≤ 3.60			0.4		0.4	
		2.30≤ V_{CC} ≤ 2.70	I_{OL}=18mA		0.6		0.6	
		2.70 ≤ V_{CC} ≤ 3.60			0.4		0.4	
		2.70 ≤ V_{CC} ≤ 3.60	I_{OL}=24mA		0.55		0.55	

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	T_A = +25°C Max	T_A = −40°C to +85°C Min	T_A = −40°C to +85°C Max	Units	Conditions
V_{OH}	HIGH Level Output Voltage	0.90	V_{CC} − 0.1		V_{CC} − 0.1		V	I_{OH} = −100 µA
		1.10 ≤ V_{CC} ≤ 1.30	V_{CC} − 0.1		V_{CC} − 0.1			
		1.40 ≤ V_{CC} ≤ 1.60	V_{CC} − 0.2		V_{CC} − 0.2			
		1.65 ≤ V_{CC} ≤ 1.95	V_{CC} − 0.2		V_{CC} − 0.2			
		2.30 ≤ V_{CC} < 2.70	V_{CC} − 0.2		V_{CC} − 0.2			
		2.70 ≤ V_{CC} ≤ 3.60	V_{CC} − 0.2		V_{CC} − 0.2			
		1.10 ≤ V_{CC} ≤ 1.30	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = −2 mA
		1.40 ≤ V_{CC} ≤ 1.60	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = −4 mA
		1.65 ≤ V_{CC} ≤ 1.95	1.25		1.25			I_{OH} = −6 mA
		2.30 ≤ V_{CC} < 2.70	2.0		2.0			
		2.30 ≤ V_{CC} < 2.70	1.8		1.8			I_{OH} = −12 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			
		2.30 ≤ V_{CC} < 2.70	1.7		1.7			I_{OH} = −18 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.4		2.4			
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			I_{OH} = −24 mA
V_{OL}	LOW Level Output Voltage	0.90		0.1		0.1	V	I_{OL} = 100 µA
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.2		0.2		
		1.65 ≤ V_{CC} ≤ 1.95		0.2		0.2		
		2.30 ≤ V_{CC} < 2.70		0.2		0.2		
		2.70 ≤ V_{CC} ≤ 3.60		0.2		0.2		
		1.10 ≤ V_{CC} ≤ 1.30		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 2 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 4 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.3		0.3		I_{OL} = 6 mA
		2.30 ≤ V_{CC} < 2.70		0.4		0.4		I_{OL} = 12 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.30 ≤ V_{CC} < 2.70		0.6		0.6		I_{OL} = 18 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.70 ≤ V_{CC} ≤ 3.60		0.55		0.55		I_{OL} = 24 mA

New

V_{OH}	HIGH Level Output Voltage	0.90	I_{OH}=-100µA					V
		1.10 ≤ V_{CC} ≤ 1.30			V_{CC}-0.1		V_{CC}-0.1	
		1.40 ≤ V_{CC} ≤ 1.60			V_{CC}-0.2		V_{CC}-0.2	
		1.65 ≤ V_{CC} ≤ 1.95			V_{CC}-0.2		V_{CC}-0.2	
		2.30 ≤ V_{CC} ≤ 2.70			V_{CC}-0.2		V_{CC}-0.2	
		2.70 ≤ V_{CC} ≤ 3.60			V_{CC}-0.2		V_{CC}-0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OH}=-2mA	.75 x V_{CC}		.75 x V_{CC}		
		1.40 ≤ V_{CC} ≤ 1.60	I_{OH}=-4mA	.75 x V_{CC}		.75 x V_{CC}		
		1.65 ≤ V_{CC} ≤ 1.95	I_{OH}=-6mA	1.25		1.25		
		2.30 ≤ V_{CC} ≤ 2.70		2.00		2.00		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-12mA	1.8		1.8		
		2.70≤ V_{CC} ≤ 3.60		2.2		2.2		
		2.30 ≤ V_{CC} ≤ 2.70	I_{OH}=-18mA	1.7		1.7		
		2.70 ≤ V_{CC} ≤ 3.60		2.4		2.4		
		2.70 ≤ V_{CC} ≤ 3.60	I_{OH}=-24mA	2.2		2.2		

V_{OL}	LOW Level Output Voltage	0.90	I_{OL}=100µA					V
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1	
		1.40 ≤ V_{CC} ≤ 1.60			0.2		0.2	
		1.65 ≤ V_{CC} ≤ 1.95			0.2		0.2	
		2.30 ≤ V_{CC} ≤ 2.70			0.2		0.2	
		2.70 ≤ V_{CC} ≤ 3.60			0.2		0.2	
		1.10 ≤ V_{CC} ≤ 1.30	I_{OL}=2mA		0.25 x V_{CC}		0.25 x V_{CC}	
		1.40 ≤ V_{CC} ≤ 1.60	I_{OL}=4mA		0.25 x V_{CC}		0.25 x V_{CC}	
		1.65 ≤ V_{CC} ≤ 1.95	I_{OL}=6mA		0.3		0.3	
		2.30 ≤ V_{CC} ≤ 2.70	I_{OL}=12mA		0.4		0.4	
		2.70 ≤ V_{CC} ≤ 3.60			0.4		0.4	
		2.30≤ V_{CC} ≤ 2.70	I_{OL}=18mA		0.6		0.6	
		2.70 ≤ V_{CC} ≤ 3.60			0.4		0.4	
		2.70 ≤ V_{CC} ≤ 3.60	I_{OL}=24mA		0.55		0.55	

Symbol	Parameter	V_{CC} (V)	T_A = +25°C Min	T_A = +25°C Max	T_A = −40°C to +85°C Min	T_A = −40°C to +85°C Max	Units	Conditions
V_{OH}	HIGH Level Output Voltage	0.90					V	I_{OH} = −100 µA
		1.10 ≤ V_{CC} ≤ 1.30	V_{CC} − 0.1		V_{CC} − 0.1			
		1.40 ≤ V_{CC} ≤ 1.60	V_{CC} − 0.2		V_{CC} − 0.2			
		1.65 ≤ V_{CC} ≤ 1.95	V_{CC} − 0.2		V_{CC} − 0.2			
		2.30 ≤ V_{CC} < 2.70	V_{CC} − 0.2		V_{CC} − 0.2			
		2.70 ≤ V_{CC} ≤ 3.60	V_{CC} − 0.2		V_{CC} − 0.2			
		1.10 ≤ V_{CC} ≤ 1.30	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = −2 mA
		1.40 ≤ V_{CC} ≤ 1.60	0.75 x V_{CC}		0.75 x V_{CC}			I_{OH} = −4 mA
		1.65 ≤ V_{CC} ≤ 1.95	1.25		1.25			I_{OH} = −6 mA
		2.30 ≤ V_{CC} < 2.70	2.0		2.0			
		2.30 ≤ V_{CC} < 2.70	1.8		1.8			I_{OH} = −12 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			
		2.30 ≤ V_{CC} < 2.70	1.7		1.7			I_{OH} = −18 mA
		2.70 ≤ V_{CC} ≤ 3.60	2.4		2.4			
		2.70 ≤ V_{CC} ≤ 3.60	2.2		2.2			I_{OH} = −24 mA
V_{OL}	LOW Level Output Voltage	0.90					V	I_{OL} = 100 µA
		1.10 ≤ V_{CC} ≤ 1.30		0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60		0.2		0.2		
		1.65 ≤ V_{CC} ≤ 1.95		0.2		0.2		
		2.30 ≤ V_{CC} < 2.70		0.2		0.2		
		2.70 ≤ V_{CC} ≤ 3.60		0.2		0.2		
		1.10 ≤ V_{CC} ≤ 1.30		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 2 mA
		1.40 ≤ V_{CC} ≤ 1.60		0.25 x V_{CC}		0.25 x V_{CC}		I_{OL} = 4 mA
		1.65 ≤ V_{CC} ≤ 1.95		0.3		0.3		I_{OL} = 6 mA
		2.30 ≤ V_{CC} < 2.70		0.4		0.4		I_{OL} = 12 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.30 ≤ V_{CC} < 2.70		0.6		0.6		I_{OL} = 18 mA
		2.70 ≤ V_{CC} ≤ 3.60		0.4		0.4		
		2.70 ≤ V_{CC} ≤ 3.60		0.55		0.55		I_{OL} = 24 mA

- **正のしきい値電圧から下限値と 0.90V における規格を削除。**
- **負のしきい値電圧から上限値と 0.90V における規格を削除。**
- **ヒステリシス電圧の 0.90V における規格を削除。**

Existing datasheet

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_P	Positive Threshold Voltage	0.90		0.30	0.70	0.30	0.70	V
		1.10		0.40	1.00	0.40	1.00	
		1.40		0.50	1.25	0.50	1.40	
		1.65		0.70	1.50	0.70	1.50	
		2.30		1.00	1.80	1.00	1.80	
		2.70		1.50	2.20	1.50	2.20	
V_N	Negative Threshold Voltage	0.90		0.10	0.60	0.10	0.60	V
		1.10		0.15	0.70	0.15	0.70	
		1.40		0.20	0.80	0.20	0.80	
		1.65		0.25	0.90	0.25	0.90	
		2.30		0.40	1.15	0.40	1.15	
		2.70		0.60	1.50	0.60	1.50	
V_H	Hysteresis Voltage	0.90		0.07	0.50	0.07	0.50	V
		1.10		0.08	0.60	0.08	0.60	
		1.40		0.09	0.80	0.09	0.80	
		1.65		0.15	1.00	0.15	1.00	
		2.30		0.25	1.10	0.25	1.10	
		2.70		0.60	1.20	0.60	1.20	

New

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C		T_A=-40 to 85°C		Units
				Min.	Max.	Min.	Max.	
V_P	Positive Threshold Voltage	0.90						V
		1.10			1.00		1.00	
		1.40			1.25		1.40	
		1.65			1.50		1.50	
		2.30			1.80		1.80	
		2.70			2.20		2.20	
V_N	Negative Threshold Voltage	0.90						V
		1.10		0.15		0.15		
		1.40		0.20		0.20		
		1.65		0.25		0.25		
		2.30		0.40		0.40		
		2.70		0.60		0.60		
V_H	Hysteresis Voltage	0.90						V
		1.10		0.08	0.60	0.08	0.60	
		1.40		0.09	0.80	0.09	0.80	
		1.65		0.15	1.00	0.15	1.00	
		2.30		0.25	1.10	0.25	1.10	
		2.70		0.60	1.20	0.60	1.20	

- **すべての伝播遅延と出力イネーブル時間と出力デセイブル時間の仕様から下限値を削除。**

Existing datasheet

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		13				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
t_{PHL}		1.10 ≤ V_{CC} ≤ 1.30	3.0	6.0	9.8	1.9	14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.0	3.5	5.3	0.8	5.7			
		1.65 ≤ V_{CC} ≤ 1.95	0.9	3.0	4.3	0.8	4.6		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70	0.8	2.0	2.8	0.7	3.0		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60	0.5	1.0	2.6	0.5	2.8			
t_{PZH}	Output	0.90		14				ns	C_L = 30 pF	Figures 1, 2
t_{PZL}	Enable Time	1.10 ≤ V_{CC} ≤ 1.30	3.0	6.0	9.7	2.0	16.4		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.2	4.0	6.0	1.0	7.5		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95	1.0	3.0	4.5	0.9	5.0		S_1 = GND for t_{PZH}	
		2.30 ≤ V_{CC} < 2.70	0.8	2.0	3.0	0.7	3.4		S_1 = V_I for t_{PZL}	
		2.70 ≤ V_{CC} ≤ 3.60	0.5	1.2	2.6	0.4	2.9		V_I = 2 x V_{CC}	
t_{PHZ}	Output	0.90		14				ns	C_L = 30 pF	Figures 1, 2
t_{PLZ}	Disable Time	1.10 ≤ V_{CC} ≤ 1.30	2.0	5.0	9.5	2.0	14.0		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.2	3.0	5.5	1.1	7.0		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95	1.0	2.0	5.6	0.8	5.8		S_1 = GND for t_{PHZ}	
		2.30 ≤ V_{CC} < 2.70	0.8	1.5	4.2	0.5	5.0		S_1 = V_I for t_{PLZ}	
		2.70 ≤ V_{CC} ≤ 3.60	0.5	1.0	3.9	0.4	4.2		V_I = 2 x V_{CC}	

New

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		13				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
t_{PHL}		1.10 ≤ V_{CC} ≤ 1.30		6.0	9.8		14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		3.5	5.3		5.7			
		1.65 ≤ V_{CC} ≤ 1.95		3.0	4.3		4.6		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70		2.0	2.8		3.0		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60		1.0	2.6		2.8			
t_{PZH}	Output	0.90		14				ns	C_L = 30 pF	Figures 1, 2
t_{PZL}	Enable Time	1.10 ≤ V_{CC} ≤ 1.30		6.0	9.7		16.4		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		4.0	6.0		7.5		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95		3.0	4.5		5.0		S_1 = GND for t_{PZH}	
		2.30 ≤ V_{CC} < 2.70		2.0	3.0		3.4		S_1 = V_I for t_{PZL}	
		2.70 ≤ V_{CC} ≤ 3.60		1.2	2.6		2.9		V_I = 2 x V_{CC}	
t_{PHZ}	Output	0.90		14				ns	C_L = 30 pF	Figures 1, 2
t_{PLZ}	Disable Time	1.10 ≤ V_{CC} ≤ 1.30		5.0	9.5		14.0		R_U = 1kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		3.0	5.5		7.0		R_D = 1kΩ	
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.6		5.8		S_1 = GND for t_{PHZ}	
		2.30 ≤ V_{CC} < 2.70		1.5	4.2		5.0		S_1 = V_I for t_{PLZ}	
		2.70 ≤ V_{CC} ≤ 3.60		1.0	3.9		4.2		V_I = 2 x V_{CC}	

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_{PHL}	Propagation Delay	0.90		12				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
t_{PLH}		1.10 ≤ V_{CC} ≤ 1.30	2.0	5.9	10.0	1.0	14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60	1.0	3.2	6.1	0.9	7.0			
		1.65 ≤ V_{CC} ≤ 1.95	1.0	2.0	5.2	0.7	6.2		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70	0.8	1.8	3.7	0.6	4.4		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60	0.7	1.5	3.3	0.5	3.8			

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_{PHL}	Propagation Delay	0.90		12				ns	C_L = 15 pF, R_L = 1 MΩ	Figures 1, 2
t_{PLH}		1.10 ≤ V_{CC} ≤ 1.30		5.9	10.0		14.9		C_L = 15 pF, R_L = 2 kΩ	
		1.40 ≤ V_{CC} ≤ 1.60		3.2	6.1		7.0			
		1.65 ≤ V_{CC} ≤ 1.95		2.0	5.2		6.2		C_L = 30 pF	
		2.30 ≤ V_{CC} < 2.70		1.8	3.7		4.4		R_L = 500Ω	
		2.70 ≤ V_{CC} ≤ 3.60		1.5	3.3		3.8			

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C			T_A=-40 to 85°C		Units	Figure
				Min.	Typ.	Max.	Min.	Max.		
t_{PZL}, t_{PLZ}	Propagation Delay	0.90	C_L=15pF, R_U=R_D=1kΩ		13				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30	C_L=30pF, R_U=R_D=1kΩ	3.0	6.0	15.0	1.0	18.6		
		1.40 ≤ V_{CC} ≤ 1.60		1.0	3.2	8.7	1.0	9.7		
		1.65 ≤ V_{CC} ≤ 1.95	C_L=30pF, R_U=R_D=1kΩ	1.0	2.0	6.0	1.0	6.8		
		2.30 ≤ V_{CC} ≤ 2.70		0.8	1.2	3.6	0.7	4.7		
		2.70 ≤ V_{CC} ≤ 3.60		0.7	1.0	3.3	0.6	4.0		

Symbol	Parameter	V_{CC}	Conditions	T_A=25°C			T_A=-40 to 85°C		Units	Figure
				Min.	Typ.	Max.	Min.	Max.		
t_{PZL}, t_{PLZ}	Propagation Delay	0.90	C_L=15pF, R_U=R_D=1kΩ		13				ns	Figure 5 Figure 6
		1.10 ≤ V_{CC} ≤ 1.30	C_L=30pF, R_U=R_D=1kΩ		6.0	15.0		18.6		
		1.40 ≤ V_{CC} ≤ 1.60			3.2	8.7		9.7		
		1.65 ≤ V_{CC} ≤ 1.95	C_L=30pF, R_U=R_D=1kΩ		2.0	6.0		6.8		
		2.30 ≤ V_{CC} ≤ 2.70			1.2	3.6		4.7		
		2.70 ≤ V_{CC} ≤ 3.60			1.0	3.3		4.0		

ON Semiconductor®

初回製品 / プロセス変更通知

文書番号#：IPCN22964X
発行日：03 Apr 2020

認定計画：
デバイス名： NL17SG373DFT2G
RMS： 65396
パッケージ：SC88

テスト	規格	条件	間隔
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C	
HTSL	JESD22-A103	Ta=150°C	2016 hrs
TC	JESD22-A104	Ta= -65°C to +150°C	500 cyc
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc x 1.2	2016 hrs
ELFR	JESD22-A108	Ta=125°C, 100 % max rated Vcc x 1.2	48 hrs
RSH	JESD22- B106	Ta = 265C, 10 sec	

認定完了予定日：30 April 2020

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	認定試験用ビークル
NC7WV16P6X	NL17SG373DFT2G
NC7SP57P6X	NL17SG373DFT2G
NC7WV04P6X	NL17SG373DFT2G
NC7SV157P6X	NL17SG373DFT2G
NC7SV57P6X	NL17SG373DFT2G
NC7WV14P6X	NL17SG373DFT2G
NC7WP14P6X	NL17SG373DFT2G
NC7SV19P6X	NL17SG373DFT2G
NC7SP157P6X	NL17SG373DFT2G
NC7SP58P6X	NL17SG373DFT2G
NC7WV17P6X	NL17SG373DFT2G
NC7SV58P6X	NL17SG373DFT2G
NC7WV07P6X	NL17SG373DFT2G
NC7SV11P6X	NL17SG373DFT2G
NC7SP19P6X	NL17SG373DFT2G
NL17SG373DFT2G	NL17SG373DFT2G