



Final Product/Process Change Notification

Document #:FPCN22780X

Issue Date:03 Apr 2020

Title of Change:	MiniGates Fab, Assembly Material and Test Change (MicroPak 6lds/MicroPak 2 6lds) with datasheet update.
Proposed First Ship date:	10 Jul 2020 or earlier if approved by customer
Contact Information:	Contact your local ON Semiconductor Sales Office or logic.fpcn@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.
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or ChangKit.Mok@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com
Marking of Parts/ Traceability of Change:	The CS code on the label will be changed from US to JP.
Change Category:	Test Change, Wafer Fab Change, Assembly Change
Change Sub-Category(s):	Manufacturing Process Change, Material Change, Datasheet/Product Doc change, Shipping/Packaging/Marking, Manufacturing Site Addition

Sites Affected:

ON Semiconductor Sites	External Foundry/Subcon Sites
ON Semiconductor Maine, United States	HANA Semiconductor, Thailand
	STARS Microelectronics, Thailand
	Towerjazz Semiconductor, Japan (Toyama)
	UTAC, Thailand

Description and Purpose:

Qualify new die source for Former Fairchild TinyLogic® and transfer to a new subcon site to increase capacity.

MicroPak 6lds

Material to be changed	Before Change		After Change
	(Existing flow)		(New flow)
# Assy Site	Subcon Thailand (HANA)	Subcon Thailand (UTAC)	Subcon Thailand (STARS)
Wire	Au	Au	PCC
Lead frame	LF UDFN 6L C7025 Cu COL 1.45X1.0 ETCHED UPPF and PS LGAB 6L LOGIC KINSUS 1X1.45X.13	LF UDFN 6L C7025 1.45X1MM ETCHED PPF	LF PPF+RT-UPG; MicroPak 6L 1.45x1
Mold Compound	MC CEL9220HF13H HF and MC NITTO GE100LFCG 14MMX4.6G	SUMITOMO G770HCD	MOLDING COMPOUND; G700LTD



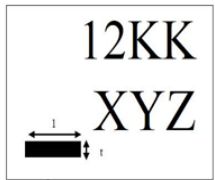
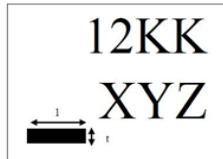
Material to be changed	Before Change		After Change
	(Existing flow)		(New flow)
Die Attach	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON and DA FILM LI LE5003 P8AS 100ST	DA AB 8006NS 10CC	NON-CONDUCTIVE DIE ATTACH FILM; HR-5104
Die Source	On South Portland	On South Portland	Foundry Japan

Only NC7SP08L6X run in both sites, others all run in HANA only.

MicroPak 2 6lds

Material to be changed	Before Change (Existing flow)		After Change (New flow)
# Assy Site	Subcon Thailand (HANA)	Subcon Thailand(UTAC)	Subcon Thailand (STARS)
Wire	Au	Au	PCC
Lead frame	LF UDFN 6L A194 COL 1.0X1.0 ETCHED PPF	LF UDFN 6L C7025 Cu 1X1MM ETCHED PPF	LF PPF+RT-UPG; MicroPak2 6L 1x1
Mold Compound	MC CEL9220HF13H HF	SUMITOMO G770HCD	MOLDING COMPOUND; G700LTD
Die Attach	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC	NON-CONDUCTIVE DIE ATTACH FILM; HR-5104
Die Source	On South Portland	On South Portland	Foundry Japan

Only NC7SV08FHX run in both sites, others all run in HANA only.

	From	To
Product marking change	<u>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</u>  Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min) 1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K) 2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A) Existing Plant Code is H and G	<u>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</u>  Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min) 1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K) 2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A) New Plant Code is S

**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.

There will be other changes that represent a cleanup and standardization to the datasheet to represent a family oriented specification format. These changes will include forms of the following:

- Correction of clerical errors such as spelling.
- Formatting to create family standards.
- Addition of new package types and possible removal of packages no longer available.
- Standardization of the switching waveforms test circuit figures.
- Formatting of the Device ordering information to provide more information to the customer regarding marking and Pin 1 orientation in tape or reel.

NC7SP

- 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

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	-0.5	V_{CC} to +0.5	V
	$V_{CC}=0V$	-0.5	4.6	V

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	4.3	V
V_{IN}	DC Input Voltage	-0.5	4.3	V
V_{OUT}	DC Output Voltage	-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	

- ## Existing datasheet

New

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 × V _{CC}	0.65 × V _{CC}			V
		1.10 ≤ V _{CC} ≤ 1.30		0.65 × V _{CC}	0.65 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.60		0.65 × V _{CC}	0.65 × V _{CC}			
		1.65 ≤ V _{CC} ≤ 1.95		0.65 × V _{CC}	0.65 × 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 × V _{CC}	0.35 × V _{CC}			V
		1.10 ≤ V _{CC} ≤ 1.30		0.35 × V _{CC}	0.35 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.60		0.35 × V _{CC}	0.35 × V _{CC}			
		1.65 ≤ V _{CC} ≤ 1.95		0.35 × V _{CC}	0.35 × 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		V _{CC} - 0.1	V _{CC} - 0.1			V
		1.10 ≤ V _{CC} ≤ 1.30	I _{OH} =-20μA	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 × V _{CC}	0.75 × 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		0.1	0.1	
1.10 ≤ V _{CC} ≤ 1.30	I _{OL} =20μA			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 × V _{CC}	0.30 × 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			

Symbol	Parameter	V _{CC}	Conditions	T _A =25°C		T _A =-40 to 85°C		Unit
				Min.	Max.	Min.	Max.	
V _{IH}	HIGH Level Input Voltage	0.60		V _{CC}	V _{CC}	V _{CC}	V _{CC}	
		1.10 ≤ V _{CC} ≤ 1.30		0.85 × V _{CC}	0.85 × V _{CC}	0.85 × V _{CC}	0.85 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60		0.85 × V _{CC}	0.85 × V _{CC}	0.85 × V _{CC}	0.85 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95		0.85 × V _{CC}	0.85 × V _{CC}	0.85 × V _{CC}	0.85 × V _{CC}	
		2.30 ≤ V _{CC} ≤ 2.70		1.6	1.6	1.6	1.6	V
		3.00 ≤ V _{CC} ≤ 3.60		2.1	2.1	2.1	2.1	
V _{IL}	LOW Level Input Voltage	0.60			GND		GND	
		1.10 ≤ V _{CC} ≤ 1.30			0.35 × V _{CC}		0.35 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60			0.35 × V _{CC}		0.35 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95			0.35 × V _{CC}		0.35 × V _{CC}	
		2.30 ≤ V _{CC} ≤ 2.70			0.7		0.7	V
		3.00 ≤ V _{CC} ≤ 3.60			0.9		0.9	
V _{OH}	HIGH Level Output Voltage	0.60						
		1.10 ≤ V _{CC} ≤ 1.30	I _{OL} =20μA	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.40 ≤ V _{CC} ≤ 1.60		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.65 ≤ V _{CC} ≤ 1.95		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		2.30 ≤ V _{CC} ≤ 2.70		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		3.00 ≤ V _{CC} ≤ 3.60		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.10 ≤ V _{CC} ≤ 1.30	I _{OL} =0.5mA	0.75 × V _{CC}	0.75 × V _{CC}	0.75 × V _{CC}	0.75 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60		1.07	0.99	1.07	0.99	
		1.65 ≤ V _{CC} ≤ 1.95		1.24	1.22	1.24	1.22	
		2.30 ≤ V _{CC} ≤ 2.70		1.95	1.87	1.95	1.87	
		3.00 ≤ V _{CC} ≤ 3.60		2.61	2.55	2.61	2.55	
		1.10 ≤ V _{CC} ≤ 1.30	I _{OL} =1mA	1.07	0.99	1.07	0.99	
		1.40 ≤ V _{CC} ≤ 1.60		1.24	1.22	1.24	1.22	
		1.65 ≤ V _{CC} ≤ 1.95		1.95	1.87	1.95	1.87	
		2.30 ≤ V _{CC} ≤ 2.70		2.61	2.55	2.61	2.55	
		3.00 ≤ V _{CC} ≤ 3.60		2.61	2.55	2.61	2.55	
V _{OL}	LOW Level Output Voltage	0.60						
		1.10 ≤ V _{CC} ≤ 1.30	I _{OL} =20μA		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 × V _{CC}		0.30 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60			0.31		0.37	
		1.65 ≤ V _{CC} ≤ 1.95			0.31		0.36	
		2.30 ≤ V _{CC} ≤ 2.70			0.31		0.33	
		3.00 ≤ V _{CC} ≤ 3.60			0.31		0.33	

DC Electrical Characteristics

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 _{BI}	HIGH Level Input Voltage	0.90	0.65 × V _{CC}		0.65 × V _{CC}		V	
		1.10 ≤ V _{CC} ≤ 1.30	0.65 × V _{CC}		0.65 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.60	0.65 × V _{CC}		0.65 × V _{CC}			
		1.65 ≤ V _{CC} ≤ 1.95	0.65 × V _{CC}		0.65 × 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 × V _{CC}		0.35 × V _{CC}	V	
		1.10 ≤ V _{CC} ≤ 1.30		0.35 × V _{CC}		0.35 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60		0.35 × V _{CC}		0.35 × V _{CC}		
		1.65 ≤ V _{CC} ≤ 1.95		0.35 × V _{CC}		0.35 × 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	V	I _{OL} = 20 μA
		1.10 ≤ V _{CC} ≤ 1.30				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 × V _{CC}		0.30 × V _{CC}	V	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		0.36		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

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		T _A = -40°C to +85°C		Units	Conditions
			Min	Max	Min	Max		
V _{IN}	HIGH Level Input Voltage	0.90					V	
		1.10 ≤ V _{CC} ≤ 1.30	0.85 × V _{CC}		0.85 × V _{CC}			
		1.40 ≤ V _{CC} ≤ 1.60	0.85 × V _{CC}					
		1.65 ≤ V _{CC} ≤ 1.95	0.85 × V _{CC}		0.85 × 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 × V _{CC}		0.35 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60		0.35 × V _{CC}		0.35 × V _{CC}		
		1.65 ≤ V _{CC} ≤ 1.95		0.35 × V _{CC}		0.35 × 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 × V _{CC}		0.30 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60		0.31		0.37		
		1.65 ≤ V _{CC} ≤ 1.95		0.31		0.35		
		2.30 ≤ V _{CC} ≤ 2.70		0.31		0.33		
		3.00 ≤ V _{CC} ≤ 3.60		0.31		0.33		



- 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.

DC Electrical Characteristics

Symbol	Parameter	Conditions	V _{CC} (V)	T _A =+25°C		T _A =-40°C to +85°C		Units
				Min.	Max.	Min.	Max.	
V _{th}	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 _{th}	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		T _A =-40°C to +85°C		Units
				Min.	Max.	Min.	Max.	
V _{th}	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 _{th}	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		0.08	
			1.40		0.09		0.09	
			1.65		0.10		0.10	
			2.30		0.25		0.25	
			3.00		0.60		0.60	

- 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		T _A =-40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max		
t _{PLZ}	Propagation Delay	0.90		24				C _L = 10 pF R _D = 5000Ω R _O = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	4.0	9	18.7	3.5	30.9		
		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 _{PLZ} , t _{HLZ}	Propagation Delay	0.90		27				C _L = 15 pF R _D = 5000Ω R _O = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	5.0	10	20.2	4.5	33.9		
		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 _{PLZ} , t _{HLZ}	Propagation Delay	0.90		34				C _L = 30 pF R _D = 5000 Ω R _O = 5000 Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	6.0	12	24.0	5.0	43.0		
		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		T _A =-40°C to +85°C		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max		
t _{PLZ}	Propagation Delay	0.90		24				C _L = 10 pF R _D = 5000Ω R _O = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		9	18.7		30.9		
		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 _{PLZ} , t _{HLZ}	Propagation Delay	0.90		27				C _L = 15 pF R _D = 5000Ω R _O = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		10	20.2		33.9		
		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 _{PLZ} , t _{HLZ}	Propagation Delay	0.90		34				C _L = 30 pF R _D = 5000 Ω R _O = 5000 Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		12	24.0		43.0		
		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		T _A =-40 to +85°C		Units	Figure
				Min.	Typ.	Min.	Typ.		
t _{PHL} , t _{PLH}	Propagation Delay	0.90			34			ns	Figure 5 Figure 6
		1.10 ≤ V _{CC} ≤ 1.30		5.5	12.0	23.4	5.0		
		1.40 ≤ V _{CC} ≤ 1.60		4.0	8.0	13.8	3.0		
		1.65 ≤ V _{CC} ≤ 1.95		2.0	6.0	10.6	2.0		
		2.30 ≤ V _{CC} ≤ 2.70		1.0	5.0	7.6	1.0		
		3.00 ≤ V _{CC} ≤ 3.60		0.8	4.0	6.4	0.5		
t _{OL} , t _{OLH}	Output Enable Time	0.90			37			ns	Figure 5 Figure 6
		1.10 ≤ V _{CC} ≤ 1.30		6.0	13.0	24.4	5.0		
		1.40 ≤ V _{CC} ≤ 1.60		4.0	8.0	14.5	3.0		
		1.65 ≤ V _{CC} ≤ 1.95		2.0	6.0	11.7	2.0		
		2.30 ≤ V _{CC} ≤ 2.70		1.0	5.0	9.1	1.0		
		3.00 ≤ V _{CC} ≤ 3.60		0.8	4.0	8.1	0.5		
t _{OLZ} , t _{OLH}	Output Disable Time	0.90			36			ns	Figure 5 Figure 6
		1.10 ≤ V _{CC} ≤ 1.30		6.0	13.0	24.8	5.0		
		1.40 ≤ V _{CC} ≤ 1.60		4.0	8.0	17.1	3.0		
		1.65 ≤ V _{CC} ≤ 1.95		2.0	6.0	16.5	2.0		
		2.30 ≤ V _{CC} ≤ 2.70		1.0	5.0	15.2	1.0		
		3.00 ≤ V _{CC} ≤ 3.60		0.8	4.0	14.8	0.5		

AC Electrical Characteristics (Continued)

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 =30pF, R _D =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 _{OL} , t _{OH}	Output Enable Time	0.90	C _L =30pF, R _D =5000Ω, R _S =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 _{OL} , t _{OLZ}	Output Disable Time	0.90	C _L =30pF, R _D =5000Ω, R _S =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		



- Maximum limits adjusted for the NC7SP125 and NC7SP126 on some propagation delays, Output Enable times and Output Disable Times.
- 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			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Max.			
t _{PLH} , 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 _{OL} , t _{OL}	Output Enable Time	0.90	C _L =10pF, R _L =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 _{OH} , t _{OH}	Output Disable Time	0.90	C _L =10pF, R _L =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 _{PLH} , 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 _{OL} , t _{OL}	Output Enable Time	0.90	C _L =15pF, R _L =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 _{OH} , t _{OH}	Output Disable Time	0.90	C _L =15pF, R _L =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 _{PLH} , t _{PLH}	Propagation Delay	0.90	C _L =10pF, R _L =1MΩ		26					ns	Figure 6 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			
t _{OL} , t _{OL}	Output Enable Time	0.90	C _L =10pF, R _L =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			
t _{OH} , t _{OH}	Output Disable Time	0.90	C _L =10pF, R _L =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			
t _{PLH} , 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			
t _{OL} , t _{OL}	Output Enable Time	0.90	C _L =15pF, R _L =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			
t _{OH} , t _{OH}	Output Disable Time	0.90	C _L =15pF, R _L =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			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Typ.	Max.		
t _{PLH} , 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			
t _{OL} , t _{OL}	Output Enable Time	0.90	C _L =30pF, R _L =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			
t _{OH} , t _{OH}	Output Disable Time	0.90	C _L =30pF, R _L =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 _{EN} , t _{EL}	Output Enable Time	0.90	C _L =30pF, R _L =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 _{OHZ} , t _{OLZ}	Output Disable Time	0.90	C _L =30pF, R _L =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	16.6		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

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 ⁽¹⁾	-0.5	$V_{CC} + 0.5$	V
	$V_{CC}=0V$	-0.5	4.6	V

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	4.3	V
V_{IN}	DC Input Voltage	-0.5	4.3	V
V_{OUT}	DC Output Voltage			
	HIGH or LOW State ⁽¹⁾	-0.5	$V_{CC} + 0.5$	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	$T_A=25^\circ C$		$T_A=40 \text{ to } 85^\circ C$		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		55 × V_{DD}	65 × V_{DD}			V
		1.10 ≤ V_{DD} ≤ 1.30		65 × V_{DD}	65 × V_{DD}			
		1.40 ≤ V_{DD} ≤ 1.60		65 × V_{DD}	65 × V_{DD}			
		1.65 ≤ V_{DD} ≤ 1.95		65 × V_{DD}	65 × V_{DD}			
		2.30 ≤ V_{DD} ≤ 2.70		1.6	1.6			
V_{IL}	LOW Level Input Voltage	0.90		35 × V_{DD}	35 × V_{DD}			V
		1.10 ≤ V_{DD} ≤ 1.30		35 × V_{DD}	35 × V_{DD}			
		1.40 ≤ V_{DD} ≤ 1.60		35 × V_{DD}	35 × V_{DD}			
		1.65 ≤ V_{DD} ≤ 1.95		35 × V_{DD}	35 × V_{DD}			
		2.30 ≤ V_{DD} ≤ 2.70		0.7	0.7			
		2.70 ≤ V_{DD} ≤ 3.00		0.8	0.8			

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	$T_A=25^\circ C$		$T_A=40 \text{ to } 85^\circ C$		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		55 × V_{DD}	65 × V_{DD}			V
		1.10 ≤ V_{DD} ≤ 1.30		65 × V_{DD}	65 × V_{DD}			
		1.40 ≤ V_{DD} ≤ 1.60		65 × V_{DD}	65 × V_{DD}			
		1.65 ≤ V_{DD} ≤ 1.95		65 × V_{DD}	65 × V_{DD}			
		2.30 ≤ V_{DD} ≤ 2.70		1.6	1.6			
V_{IL}	LOW Level Input Voltage	0.90		35 × V_{DD}	35 × V_{DD}			V
		1.10 ≤ V_{DD} ≤ 1.30		35 × V_{DD}	35 × V_{DD}			
		1.40 ≤ V_{DD} ≤ 1.60		35 × V_{DD}	35 × V_{DD}			
		1.65 ≤ V_{DD} ≤ 1.95		35 × V_{DD}	35 × V_{DD}			
		2.30 ≤ V_{DD} ≤ 2.70		0.7	0.7			
		2.70 ≤ V_{DD} ≤ 3.00		0.8	0.8			



Existing datasheet

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OH}	HIGH Level Output Voltage	0.90				
		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 × V _{CC}	75 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OH} = -4mA	75 × V _{CC}	75 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95	I _{OH} = -6mA	1.25	1.25	
		2.30 ≤ V _{CC} ≤ 2.70	I _{OH} = -12mA	2.00	2.00	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -18mA	1.8	1.8	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OL}	LOW Level Output Voltage	0.90				
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1		
		1.40 ≤ V _{CC} ≤ 1.60	0.2	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 × V _{CC}	0.25 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OL} = 4mA	0.25 × V _{CC}	0.25 × 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	I _{OL} = 18mA	0.4	0.4	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OH}	HIGH Level Output Voltage	0.90				
		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 × V _{CC}	75 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OH} = -4mA	75 × V _{CC}	75 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95	I _{OH} = -6mA	1.25	1.25	
		2.30 ≤ V _{CC} ≤ 2.70	I _{OH} = -12mA	2.0	2.0	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -18mA	1.8	1.8	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OL}	LOW Level Output Voltage	0.90				
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1		
		1.40 ≤ V _{CC} ≤ 1.60	0.2	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 × V _{CC}	0.25 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OL} = 4mA	0.25 × V _{CC}	0.25 × 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	I _{OL} = 18mA	0.4	0.4	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	

New

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OH}	HIGH Level Output Voltage	0.90				
		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 × V _{CC}	75 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OH} = -4mA	75 × V _{CC}	75 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95	I _{OH} = -6mA	1.25	1.25	
		2.30 ≤ V _{CC} ≤ 2.70	I _{OH} = -12mA	2.00	2.00	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -18mA	1.8	1.8	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OL}	LOW Level Output Voltage	0.90				
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1		
		1.40 ≤ V _{CC} ≤ 1.60	0.2	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 × V _{CC}	0.25 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OL} = 4mA	0.25 × V _{CC}	0.25 × 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	I _{OL} = 18mA	0.4	0.4	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OH}	HIGH Level Output Voltage	0.90				
		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 × V _{CC}	75 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OH} = -4mA	75 × V _{CC}	75 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95	I _{OH} = -6mA	1.25	1.25	
		2.30 ≤ V _{CC} ≤ 2.70	I _{OH} = -12mA	2.0	2.0	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -18mA	1.8	1.8	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OH} = -24mA	2.2	2.2	

Symbol	Parameter	V _{CC} (V)	T _A = -25°C		Units	Conditions
			Min	Max		
V _{OL}	LOW Level Output Voltage	0.90				
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1		
		1.40 ≤ V _{CC} ≤ 1.60	0.2	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 × V _{CC}	0.25 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60	I _{OL} = 4mA	0.25 × V _{CC}	0.25 × 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	I _{OL} = 18mA	0.4	0.4	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	
		2.70 ≤ V _{CC} ≤ 3.60	I _{OL} = 24mA	0.55	0.55	

- 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						
		1.40						
		1.65						
		2.30						
		2.70						
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		0.08	0.60	0.08	0.60	V
		1.10		0.09	0.80	0.09	0.80	
		1.40		0.15	1.00	0.15	1.00	
		1.65		0.25	1.10	0.25	1.10	
		2.30		0.60	1.20	0.60	1.20	
		2.70						

- 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 _{PLH}	Propagation Delay	0.90		13						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 _{PDH} t _{PDZ}	Output Enable Time	0.90		14						C _L = 30 pF	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	3.0	6.0	9.7	2.0	16.4			R _D = 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 _{PDH}	
		2.30 ≤ V _{CC} ≤ 2.70	0.8	2.0	3.0	0.7	3.4			S ₁ = V _I for t _{PDZ}	
		2.70 ≤ V _{CC} ≤ 3.60	0.5	1.2	2.6	0.4	2.9			V _I = 2 × V _{CC}	
t _{PLZ} t _{PLZ}	Output Disable Time	0.90		14						C _L = 30 pF	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	2.0	5.0	9.5	2.0	14.0			R _D = 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	5.8	0.8	5.8			S ₁ = GND for t _{PLZ}	
		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 × 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						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 _{PDH} t _{PDZ}	Output Enable Time	0.90		14						C _L = 30 pF	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		6.0	9.7		16.4			R _D = 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 _{PDH}	
		2.30 ≤ V _{CC} ≤ 2.70		2.0	3.0		3.4			S ₁ = V _I for t _{PDZ}	
		2.70 ≤ V _{CC} ≤ 3.60		1.2	2.6		2.9			V _I = 2 × V _{CC}	
t _{PLZ} t _{PLZ}	Output Disable Time	0.90		14						C _L = 30 pF	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		5.0	9.5		14.0			R _D = 1kΩ	
		1.40 ≤ V _{CC} ≤ 1.60		3.0	5.5		7.0			R _D = 1kΩ	
		1.65 ≤ V _{CC} ≤ 1.95		2.0	5.8		5.8			S ₁ = GND for t _{PLZ}	
		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 × 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 _{PLH}	Propagation Delay	0.90		12						C _L = 15 pF, R _L = 1 MΩ	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	2.0	5.9	10.0	1.8	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 _{PLH}	Propagation Delay	0.90		12						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.	Max.	Min.	Max.		
t _{PLH} , t _{PLZ}	Propagation Delay	0.90	C _L =15pF, R _L =1kΩ	13				ns	Figure 5 Figure 6
		1.10 ≤ V _{CC} ≤ 1.30	C _L =30pF, R _L =1kΩ	3.0	6.0	15.0	18.6		
		1.40 ≤ V _{CC} ≤ 1.60		1.0	3.2	8.7	10.9		
		1.65 ≤ V _{CC} ≤ 1.95		1.0	2.0	6.0	6.8		
		2.30 ≤ V _{CC} ≤ 2.70	C _L =30pF, R _L =1kΩ	0.8	1.2	3.6	4.7		
		2.70 ≤ V _{CC} ≤ 3.60		0.7	1.0	3.3	4.0		

Symbol	Parameter	V _{CC}	Conditions	T _A =25°C		T _A =-40 to 85°C		Units	Figure
				Min.	Max.	Min.	Max.		
t _{PLH} , t _{PLZ}	Propagation Delay	0.90	C _L =15pF, R _L =1kΩ	13				ns	Figure 5 Figure 6
		1.10 ≤ V _{CC} ≤ 1.30	C _L =30pF, R _L =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		2.0	6.0		6.8		
		2.30 ≤ V _{CC} ≤ 2.70	C _L =30pF, R _L =1kΩ	1.2	3.6		4.7		
		2.70 ≤ V _{CC} ≤ 3.60		1.0	3.3		4.0		

**Reliability Data Summary:**

Qualification Vehicle : NC7SV57FHX
 Package : uPAK2 1.00 x1.00mm 6L, 0.35P
 RMS : W61419

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

Qualification Vehicle : NC7SPU04L6X
 Package : uPAK 1.45 x1.00mm 6L, 0.5P
 RMS : W61417

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

Qualification Vehicle : NC7SZ18FHX
 Package : uPAK2 1.00 x1.00mm 6L, 0.35P
 RMS : W44998

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10



Qualification Vehicle : NC7SZ374L6X
 Package : uPAK 1.45 x1.00mm 6L, 0.5P
 RMS : W45056 / W53124

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

Electrical Characteristics Summary:

Electrical characteristics available upon request.

List of Affected Parts:

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

Part Number	Qualification Vehicle
NC7SP08L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV08L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SPU04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP125L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP126L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV17L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP57L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP86L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV17L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV02L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX



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NC7WV04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV16L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV126L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV07L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP32L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP17L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV00L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV125L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP19L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV11L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP157L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP00L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV157L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WP14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP38L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP34L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV32L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SVU04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV57L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV86L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP05L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV19L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP02L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV58L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV34L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP58L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV05L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV08FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV32FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV17FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP08FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV04FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX



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NC7SP17FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV05FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV57FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP126FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV00FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV02FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP04FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV58FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX

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

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

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



最終製品 / プロセス変更通知

文書番号: FPCN22780X

発行日: 03 Apr 2020

変更件名:	データシート更新を含む MiniGates Fab 組み立て材料およびテスト変更 (MicroPak 6lds/MicroPak 2 6lds)。
初回出荷予定日:	10 Jul 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 logic.fpcn@onsemi.com にお問い合わせください。
サンプル:	現地のオン・セミ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。
追加の信頼性データ:	お客さまの地域のオン・セミコンダクター営業所または ChangKit.Mok@onsemi.com にお問い合わせください。
通知種別:	これは、お客様宛の最終製品 / プロセス変更通知 (FPCN) です。FPCN は、変更実施の 90 日前に発行されます。 オン・セミコンダクターは、この通知の送付から 30 日以内に書面による問い合わせがない限り、この変更が承諾されたものとみなします。お問い合わせは、 PCN.Support@onsemi.com 宛てにお願いします。
変更部品の識別:	ラベルの CS コードは US から JP に変更されます。

変更カテゴリ: 試験の変更, ウェハファブの変更, アセンブリの変更

変更サブカテゴリ: 製造プロセスの変更, 製造プロセスの変更, データシート/製品資料の変更, 出荷/パッケージング/表記, 製造拠点の追加

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:
ON Semiconductor Maine, United States	HANA Semiconductor, Thailand
	STARS Microelectronics, Thailand
	Towerjazz Semiconductor, Japan (Toyama)
	UTAC, Thailand

説明および目的:

生産能力を増強するために、以前の Fairchild TinyLogic® の新しいダイ供給と、新しい下請け業者の拠点への移転を認定します。

MicroPak 6lds

Process	変更前の表記		変更後の表記
組み立て拠点	Subcon Thailand (HANA)	Subcon Thailand (UTAC)	Subcon Thailand (STARS)
ワイヤ	Au	Au	PCC
リードフレーム	LF UDFN 6L C7025 Cu COL 1.45X1.0 ETCHED UPPF and PS LGAB 6L LOGIC KINSUS 1X1.45X.13	LF UDFN 6L C7025 1.45X1MM ETCHED PPF	LF PPF+RT-UPG; MicroPak 6L 1.45x1
モールド・コンパウンド	MC CEL9220HF13H HF and MC NITTO GE100LFCG 14MMX4.6G	SUMITOMO G770HCD	MOLDING COMPOUND; G700LTD
ダイ接着剤	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON and DA FILM LI LE5003 P8AS 100ST	DA AB 8006NS 10CC	NON-CONDUCTIVE DIE ATTACH FILM; HR-5104
ダイソース	On South Portland	On South Portland	Foundry Japan

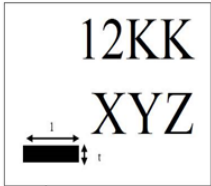
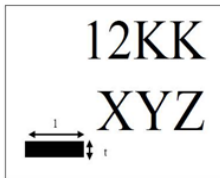
NC7SP08L6X だけはどちらの拠点でも稼働しますが、他のすべては HANA だけで稼働となります。



MicroPak 2 6lds

Process	変更前の表記		変更後の表記
組み立て拠点	Subcon Thailand (HANA)	Subcon Thailand(UTAC)	Subcon Thailand (STARS)
ワイヤ	Au	Au	PCC
リードフレーム	LF UDFN 6L A194 COL 1.0X1.0 ETCHED PPF	LF UDFN 6L C7025 Cu 1X1MM ETCHED PPF	LF PPF+RT-UPG; MicroPak2 6L 1x1
モールド・コンパウンド	MC CEL9220HF13H HF	SUMITOMO G770HCD	MOLDING COMPOUND; G700LTD
ダイ接着剤	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC	NON-CONDUCTIVE DIE ATTACH FILM; HR-5104
ダイソース	On South Portland	On South Portland	Foundry Japan

NC7SV08FHX だけはどちらの拠点でも稼働しますが、他のすべては HANA だけで稼働となります。

	変更前	変更後
製品表示変更	<u>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</u>  Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min) 1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K) 2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A) Existing Plant Code is H and G	<u>MicroPak MLP/ Micro MLP Top And Micro Pak 2 Top Mark Layout</u>  Pin #1 identifier l = 0.4 mm (Min) t = 0.08 mm (Min) 1ST LINE MARKING: 12 : Device Code KK : Lot Trace Code (&K) 2ND LINE MARKING: XY : Two Digit Date Code (&2) Z : Assembly Plant Code (&Z) (Appendix A) New Plant Code is S

データシートの変更:

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

- 変更箇所は赤色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。

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。
- 波形切り替え試験回路図の標準化。
- マーキング、およびテープまたはリールでのピン 1 の向きに関して、お客様にさらに情報を提供するための、デバイス注文情報の書式設定。



NC7SP

- 新規プロセスに合わせて絶対最大電圧を調整。

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

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	-0.5	$V_{CC} + 0.5$	V
	HIGH or LOW State ⁽⁴⁾			
	$V_{CC}=0V$	-0.5	4.6	V

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	4.3	V
V_{IN}	DC Input Voltage	-0.5	4.3	V
V_{OUT}	DC Output Voltage	-0.5	$V_{CC} + 0.5$	V
	HIGH or LOW State ⁽⁴⁾			
	$V_{CC}=0V$	-0.5	4.3	V

- 新規のダイを反映するためにワット損を調整。
- 新規のダイを反映するために熱抵抗を調整。

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制限を削除して 0.9V に調整。
- H レベル出力電圧とL レベル出力電圧の仕様から制限を削除して 0.9V に調整。



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 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	V
		1.10 ≤ V _{CC} ≤ 1.30		0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60		0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95		0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	
		2.30 ≤ V _{CC} ≤ 2.70		1.6	1.6	1.6	1.6	
V _{il}	LOW Level Input Voltage	3.00 ≤ V _{CC} ≤ 3.60		2.1	2.1	2.1	2.1	V
		0.90		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
		1.10 ≤ V _{CC} ≤ 1.30		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
V _{oh}	HIGH Level Output Voltage	2.30 ≤ V _{CC} ≤ 2.70		0.7	0.7	0.7	0.7	V
		3.00 ≤ V _{CC} ≤ 3.60		0.9	0.9	0.9	0.9	
		0.90		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.10 ≤ V _{CC} ≤ 1.30		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.40 ≤ V _{CC} ≤ 1.60		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
V _{ol}	LOW Level Output Voltage	1.65 ≤ V _{CC} ≤ 1.95		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V
		2.30 ≤ V _{CC} ≤ 2.70		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		3.00 ≤ V _{CC} ≤ 3.60		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		0.90		0.1	0.1	0.1	0.1	
		1.10 ≤ V _{CC} ≤ 1.30		0.1	0.1	0.1	0.1	

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 _{CC}	V _{CC}	V
		1.10 ≤ V _{CC} ≤ 1.30		0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60		0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95		0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	
		2.30 ≤ V _{CC} ≤ 2.70		1.6	1.6	1.6	1.6	
V _{il}	LOW Level Input Voltage	3.00 ≤ V _{CC} ≤ 3.60		2.1	2.1	2.1	2.1	V
		0.90		GND	GND	GND	GND	
		1.10 ≤ V _{CC} ≤ 1.30		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
		1.40 ≤ V _{CC} ≤ 1.60		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
		1.65 ≤ V _{CC} ≤ 1.95		0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	
V _{oh}	HIGH Level Output Voltage	2.30 ≤ V _{CC} ≤ 2.70		0.7	0.7	0.7	0.7	V
		3.00 ≤ V _{CC} ≤ 3.60		0.9	0.9	0.9	0.9	
		0.90		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.10 ≤ V _{CC} ≤ 1.30		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		1.40 ≤ V _{CC} ≤ 1.60		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
V _{ol}	LOW Level Output Voltage	1.65 ≤ V _{CC} ≤ 1.95		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V
		2.30 ≤ V _{CC} ≤ 2.70		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		3.00 ≤ V _{CC} ≤ 3.60		V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	V _{CC} - 0.1	
		0.90		0.1	0.1	0.1	0.1	
		1.10 ≤ V _{CC} ≤ 1.30		0.1	0.1	0.1	0.1	

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 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	V	
		1.10 ≤ V _{CC} ≤ 1.30	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}		
		1.65 ≤ V _{CC} ≤ 1.95	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}		
		2.30 ≤ V _{CC} ≤ 2.70	1.6	1.6	1.6	1.6		
V _{il}	LOW Level Input Voltage	3.00 ≤ V _{CC} ≤ 3.60	2.1	2.1	2.1	2.1	V	
		0.90	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
		1.10 ≤ V _{CC} ≤ 1.30	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
		1.65 ≤ V _{CC} ≤ 1.95	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
V _{oh}	HIGH Level Output Voltage	2.30 ≤ V _{CC} ≤ 2.70	0.7	0.7	0.7	0.7	V	
		3.00 ≤ V _{CC} ≤ 3.60	0.9	0.9	0.9	0.9		
		0.90	0.1	0.1	0.1	0.1		
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1	0.1	0.1		
		1.40 ≤ V _{CC} ≤ 1.60	0.1	0.1	0.1	0.1		
V _{ol}	LOW Level Output Voltage	1.65 ≤ V _{CC} ≤ 1.95	0.1	0.1	0.1	0.1	V	I _{OL} = 20 μA
		2.30 ≤ V _{CC} ≤ 2.70	0.1	0.1	0.1	0.1		
		3.00 ≤ V _{CC} ≤ 3.60	0.1	0.1	0.1	0.1		
		0.90	0.1	0.1	0.1	0.1		
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1	0.1	0.1		

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 _{CC}	V _{CC}	V	
		1.10 ≤ V _{CC} ≤ 1.30	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}		
		1.65 ≤ V _{CC} ≤ 1.95	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}	0.65 × V _{CC}		
		2.30 ≤ V _{CC} ≤ 2.70	1.6	1.6	1.6	1.6		
V _{il}	LOW Level Input Voltage	3.00 ≤ V _{CC} ≤ 3.60	2.1	2.1	2.1	2.1	V	
		0.90	GND	GND	GND	GND		
		1.10 ≤ V _{CC} ≤ 1.30	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
		1.40 ≤ V _{CC} ≤ 1.60	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
		1.65 ≤ V _{CC} ≤ 1.95	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}	0.35 × V _{CC}		
V _{oh}	HIGH Level Output Voltage	2.30 ≤ V _{CC} ≤ 2.70	0.7	0.7	0.7	0.7	V	
		3.00 ≤ V _{CC} ≤ 3.60	0.9	0.9	0.9	0.9		
		0.90	0.1	0.1	0.1	0.1		
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1	0.1	0.1		
		1.40 ≤ V _{CC} ≤ 1.60	0.1	0.1	0.1	0.1		
V _{ol}	LOW Level Output Voltage	1.65 ≤ V _{CC} ≤ 1.95	0.1	0.1	0.1	0.1	V	I _{OL} = 20 μA
		2.30 ≤ V _{CC} ≤ 2.70	0.1	0.1	0.1	0.1		
		3.00 ≤ V _{CC} ≤ 3.60	0.1	0.1	0.1	0.1		
		0.90	0.1	0.1	0.1	0.1		
		1.10 ≤ V _{CC} ≤ 1.30	0.1	0.1	0.1	0.1		

- 電圧の正のしきい値を調整して下限を削除、0.90V の制限を削除。
- 電圧の負のしきい値を調整して上限を削除、0.90V の制限を削除。
- ヒステリシス電圧の制限を削除して 0.90V に調整。



DC Electrical Characteristics

Symbol	Parameter	Conditions	V _{CC} (V)	T _A =+25°C		T _A =-40°C to +85°C		Units
				Min.	Max.	Min.	Max.	
V _{th}	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 _{th}	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	0.05	0.50	0.05	0.50	V
			1.10	0.05	0.60	0.05	0.60	
			1.40	0.05	0.80	0.05	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		T _A =-40°C to +85°C		Units
				Min.	Max.	Min.	Max.	
V _{th}	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 _{th}	Negative Threshold Voltage		0.90			0.15		V
			1.10		0.20		0.20	
			1.40		0.25		0.25	
			1.65		0.40		0.40	
			2.30		0.6		0.60	
			3.00		0.6		0.60	
V _h	Hysteresis Voltage		0.90		0.08	0.08	0.08	V
			1.10		0.09	0.09	0.09	
			1.40		0.10	0.10	0.10	
			1.65		0.10	0.10	0.10	
			2.30		0.25	0.25	0.25	
			3.00		0.60	0.60	0.60	

- すべての伝播遅延と出カインープ時間と出カディスエーブル時間の仕様から下限を削除。

Existing datasheet

AC Electrical Characteristics

Symbol	Parameter	V _{CC} (V)	T _A =+25°C			T _A =-40°C to +85°C			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max	Max			
t _{PLZ}	Propagation Delay	0.90		24					ns	C _L = 10 pF R _D = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	4.0	9	18.7	3.5	30.9				
		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 _{PLZ}	Propagation Delay	0.90		27					ns	C _L = 15 pF R _D = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	5.0	10	20.2	4.5	33.9				
		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 _{PLZ}	Propagation Delay	0.90		34					ns	C _L = 30 pF R _D = 5000 Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	6.0	12	24.0	5.0	43.0				
		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			T _A =-40°C to +85°C			Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max	Max			
t _{PLZ}	Propagation Delay	0.90		24					ns	C _L = 10 pF R _D = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		9	18.7		30.9				
		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 _{PLZ}	Propagation Delay	0.90		27					ns	C _L = 15 pF R _D = 5000Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		10	20.2		33.9				
		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 _{PLZ}	Propagation Delay	0.90		34					ns	C _L = 30 pF R _D = 5000 Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		12	24.0		43.0				
		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			T _A =-40 to +85°C			Units	Figure
				Min.	Typ.	Max.	Min.	Max.	Max.		
t _{PLZ} , t _{PLH}	Propagation Delay	0.90	C _L =30pF, R _D =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 _{PLZ} , t _{PLH}	Output Enable Time	0.90	C _L =30pF, R _D =5000Ω R _O =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 _{PLZ} , t _{PLH}	Output Disable Time	0.90	C _L =30pF, R _D =5000Ω R _O =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)

Timing Characteristics (Continued)				T _A =+25°C		T _A =-40 to +85°C		Units	Figure	
Symbol	Parameter	V _{CC}	Conditions	Min.	Typ.	Max.	Min.			Max.
t _{PLZ} , t _{PLH}	Propagation Delay	0.90	C _L =30pF, R _D =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 _{OLZ} , t _{OLH}	Output Enable Time	0.90	C _L =30pF, 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 _{MLZ} , t _{MLH}	Output Disable Time	0.90	C _L =30pF, 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		



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.		
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	
t _{OL} , t _{OLH}	Output Enable Time	0.90	C _L =10pF, R _L =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	
t _{OL} , t _{OLH}	Output Disable Time	0.90	C _L =10pF, R _L =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	
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	
t _{OL} , t _{OLH}	Output Enable Time	0.90	C _L =15pF, R _L =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		2.0	5.0	10.2	2.0	12.9	
		1.65 ≤ V _{CC} ≤ 1.95		1.5	4.0	8.0	1.0	9.9	
		2.30 ≤ V _{CC} ≤ 2.70		1.0	3.0	7.2	0.5	8.9	
t _{OL} , t _{OLH}	Output Disable Time	0.90	C _L =15pF, R _L =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	

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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 _{OL} , t _{OLH}	Output Enable Time	0.90	C _L =10pF, R _D =5000Ω R _S =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 _{OL} , t _{OLZ}	Output Disable Time	0.90	C _L =10pF, R _D =5000Ω R _S =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 _{OL} , t _{OLH}	Output Enable Time	0.90	C _L =15pF, R _D =5000Ω R _S =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 _{OL} , t _{OLZ}	Output Disable Time	0.90	C _L =15pF, R _D =5000Ω R _S =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.		
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	
t _{OL} , t _{OLH}	Output Enable Time	0.90	C _L =30pF, R _L =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	
t _{OL} , t _{OLH}	Output Disable Time	0.90	C _L =30pF, R _L =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	

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 _{OL} , t _{OLH}	Output Enable Time	0.90	C _L =30pF, R _L =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 _{OL} , t _{OLH}	Output Disable Time	0.90	C _L =30pF, R _L =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	15.5		16.7		
		3.00 ≤ V _{CC} ≤ 3.60			4.0	14.8		16.3		

NC7SV/WW/WP

- 新規プロセスに合わせて絶対最大電圧を調整。



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

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 ⁽²⁾	-0.5	$V_{CC} + 0.5$	V
	$V_{CC}=0V$	-0.5	4.6	V

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	4.3	V
V_{IN}	DC Input Voltage	-0.5	4.3	V
V_{OUT}	DC Output Voltage			
	HIGH or LOW State ⁽²⁾	-0.5	$V_{CC} + 0.5$	V
	$V_{CC}=0V$	-0.5	4.3	V

- 新規のダイを反映するためにワット損を調整。
- 新規のダイを反映するために熱抵抗を調整。

Existing datasheet

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

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

New

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

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

- H レベル入力電圧とLレベル入力電圧の仕様で制限を0.9Vに調整。
- H レベル出力電圧とLレベル出力電圧の仕様から制限を削除して0.9Vに調整。

Existing datasheet

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	$T_A=25^\circ C$		$T_A=-40$ to $85^\circ C$		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			V
		$1.10 \leq V_{DD} \leq 1.30$		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			
		$1.40 \leq V_{DD} \leq 1.60$		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			
		$1.65 \leq V_{DD} \leq 1.95$		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			
		$2.30 \leq V_{DD} \leq 2.70$		1.6	1.6			
		$2.70 \leq V_{DD} \leq 3.60$		2.0	2.0			
V_{IL}	LOW Level Input Voltage	0.90		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			V
		$1.10 \leq V_{DD} \leq 1.30$		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			
		$1.40 \leq V_{DD} \leq 1.60$		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			
		$1.65 \leq V_{DD} \leq 1.95$		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			
		$2.30 \leq V_{DD} \leq 2.70$		0.7	0.7			
		$2.70 \leq V_{DD} \leq 3.60$		0.8	0.8			

New

DC Electrical Characteristics

Symbol	Parameter	V_{CC}	Conditions	$T_A=25^\circ C$		$T_A=-40$ to $85^\circ C$		Units
				Min.	Max.	Min.	Max.	
V_{IH}	HIGH Level Input Voltage	0.90		V_{DD}	V_{DD}			V
		$1.10 \leq V_{DD} \leq 1.30$		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			
		$1.40 \leq V_{DD} \leq 1.60$		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			
		$1.65 \leq V_{DD} \leq 1.95$		$0.5 \times V_{DD}$	$0.5 \times V_{DD}$			
		$2.30 \leq V_{DD} \leq 2.70$		1.6	1.6			
		$2.70 \leq V_{DD} \leq 3.60$		2.0	2.0			
V_{IL}	LOW Level Input Voltage	0.90		0.90	0.90			V
		$1.10 \leq V_{DD} \leq 1.30$		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			
		$1.40 \leq V_{DD} \leq 1.60$		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			
		$1.65 \leq V_{DD} \leq 1.95$		$0.35 \times V_{DD}$	$0.35 \times V_{DD}$			
		$2.30 \leq V_{DD} \leq 2.70$		0.7	0.7			
		$2.70 \leq V_{DD} \leq 3.60$		0.8	0.8			



Existing datasheet

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		Units	Conditions
			Min	Max		
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 × V _{CC}	0.75 × V _{CC}		I _{OH} = -2 mA
		1.40 ≤ V _{CC} ≤ 1.60	0.75 × V _{CC}	0.75 × 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	2.00	2.00		I _{OH} = -12 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -18 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.4	2.4		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		Units	Conditions
			Min	Max		
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 × V _{CC}	0.25 × V _{CC}		I _{OL} = 2 mA
		1.40 ≤ V _{CC} ≤ 1.60	0.25 × V _{CC}	0.25 × 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		I _{OL} = 18 mA
		2.70 ≤ V _{CC} ≤ 3.60	0.6	0.6		I _{OL} = 18 mA
		2.70 ≤ V _{CC} ≤ 3.60	0.4	0.4		I _{OL} = 24 mA
		2.70 ≤ V _{CC} ≤ 3.60	0.55	0.55		I _{OL} = 24 mA

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		Units	Conditions
			Min	Max		
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 × V _{CC}	0.75 × V _{CC}		I _{OH} = -2 mA
		1.40 ≤ V _{CC} ≤ 1.60	0.75 × V _{CC}	0.75 × 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		I _{OH} = -12 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -18 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.4	2.4		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA

New

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		Units	Conditions
			Min	Max		
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 × V _{CC}	0.75 × V _{CC}		I _{OH} = -2 mA
		1.40 ≤ V _{CC} ≤ 1.60	0.75 × V _{CC}	0.75 × 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	2.00	2.00		I _{OH} = -12 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -18 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.4	2.4		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		Units	Conditions
			Min	Max		
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 × V _{CC}	0.25 × V _{CC}		I _{OL} = 2 mA
		1.40 ≤ V _{CC} ≤ 1.60	0.25 × V _{CC}	0.25 × 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		I _{OL} = 18 mA
		2.70 ≤ V _{CC} ≤ 3.60	0.6	0.6		I _{OL} = 18 mA
		2.70 ≤ V _{CC} ≤ 3.60	0.4	0.4		I _{OL} = 24 mA
		2.70 ≤ V _{CC} ≤ 3.60	0.55	0.55		I _{OL} = 24 mA

Symbol	Parameter	V _{CC} (V)	T _A = +25°C		Units	Conditions
			Min	Max		
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 × V _{CC}	0.75 × V _{CC}		I _{OH} = -2 mA
		1.40 ≤ V _{CC} ≤ 1.60	0.75 × V _{CC}	0.75 × 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		I _{OH} = -12 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -18 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.4	2.4		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA
		2.70 ≤ V _{CC} ≤ 3.60	2.2	2.2		I _{OH} = -24 mA

- 電圧の正のしきい値を調整して下限を削除、0.90V の制限を削除。
- 電圧の負のしきい値を調整して上限を削除、0.90V の制限を削除。
- ヒステリシス電圧の制限を削除して 0.90V に調整。



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カインール時間と出力カディスエーブル時間の仕様から下限を削除。

Existing datasheet

Symbol	Parameter	V _{CC} (V)	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 C _L = 15 pF, R _L = 2 kΩ C _L = 30 pF R _L = 500Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	3.0	6.0	9.8	1.9	14.9				
		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				
		2.30 ≤ V _{CC} ≤ 2.70	0.8	2.0	2.8	0.7	3.0				
		2.70 ≤ V _{CC} ≤ 3.60	0.5	1.0	2.6	0.5	2.8				
t _{PDH} t _{PDZ}	Enable Time	0.90		14					ns	C _L = 30 pF R _D = 1kΩ R _O = 1kΩ S ₁ = GND for t _{PDH} S ₁ = V _I for t _{PDZ} V _I = 2 × V _{CC}	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	3.0	6.0	9.7	2.0	16.4				
		1.40 ≤ V _{CC} ≤ 1.60	1.2	4.0	6.0	1.0	7.5				
		1.65 ≤ V _{CC} ≤ 1.95	1.0	3.0	4.5	0.9	5.0				
		2.30 ≤ V _{CC} ≤ 2.70	0.8	2.0	3.0	0.7	3.4				
		2.70 ≤ V _{CC} ≤ 3.60	0.5	1.2	2.6	0.4	2.9				
t _{PLZ} t _{PLZ}	Disable Time	0.90		14					ns	C _L = 30 pF R _D = 1kΩ R _O = 1kΩ S ₁ = GND for t _{PLZ} S ₁ = V _I for t _{PLZ} V _I = 2 × V _{CC}	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	2.0	5.0	9.5	2.0	14.0				
		1.40 ≤ V _{CC} ≤ 1.60	1.2	3.0	5.5	1.1	7.0				
		1.65 ≤ V _{CC} ≤ 1.95	1.0	2.0	5.6	0.8	5.8				
		2.30 ≤ V _{CC} ≤ 2.70	0.8	1.5	4.2	0.5	5.0				
		2.70 ≤ V _{CC} ≤ 3.60	0.5	1.0	3.9	0.4	4.2				

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 C _L = 15 pF, R _L = 2 kΩ C _L = 30 pF R _L = 500Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		6.0	9.8		14.9				
		1.40 ≤ V _{CC} ≤ 1.60		3.5	5.3		5.7				
		1.65 ≤ V _{CC} ≤ 1.95		3.0	4.3		4.6				
		2.30 ≤ V _{CC} ≤ 2.70		2.0	2.8		3.0				
		2.70 ≤ V _{CC} ≤ 3.60		1.0	2.6		2.8				
t _{PDH} t _{PDZ}	Enable Time	0.90		14					ns	C _L = 30 pF R _D = 1kΩ R _O = 1kΩ S ₁ = GND for t _{PDH} S ₁ = V _I for t _{PDZ} V _I = 2 × V _{CC}	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		6.0	9.7		16.4				
		1.40 ≤ V _{CC} ≤ 1.60		4.0	6.0		7.5				
		1.65 ≤ V _{CC} ≤ 1.95		3.0	4.5		5.0				
		2.30 ≤ V _{CC} ≤ 2.70		2.0	3.0		3.4				
		2.70 ≤ V _{CC} ≤ 3.60		1.2	2.6		2.9				
t _{PLZ} t _{PLZ}	Disable Time	0.90		14					ns	C _L = 30 pF R _D = 1kΩ R _O = 1kΩ S ₁ = GND for t _{PLZ} S ₁ = V _I for t _{PLZ} V _I = 2 × V _{CC}	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		5.0	9.5		14.0				
		1.40 ≤ V _{CC} ≤ 1.60		3.0	5.5		7.0				
		1.65 ≤ V _{CC} ≤ 1.95		2.0	5.6		5.8				
		2.30 ≤ V _{CC} ≤ 2.70		1.5	4.2		5.0				
		2.70 ≤ V _{CC} ≤ 3.60		1.0	3.9		4.2				

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		12					ns	C _L = 15 pF, R _L = 1 MΩ C _L = 15 pF, R _L = 2 kΩ C _L = 30 pF R _L = 500Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30	2.0	5.9	10.0	1.8	14.9				
		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				
		2.30 ≤ V _{CC} ≤ 2.70	0.8	1.8	3.7	0.6	4.4				
		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 _{PLH}	Propagation Delay	0.90		12					ns	C _L = 15 pF, R _L = 1 MΩ C _L = 15 pF, R _L = 2 kΩ C _L = 30 pF R _L = 500Ω	Figures 1, 2
		1.10 ≤ V _{CC} ≤ 1.30		5.9	10.0		14.9				
		1.40 ≤ V _{CC} ≤ 1.60		3.2	6.1		7.0				
		1.65 ≤ V _{CC} ≤ 1.95		2.0	5.2		6.2				
		2.30 ≤ V _{CC} ≤ 2.70		1.8	3.7		4.4				
		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 _{PH} , t _{PL}	Propagation Delay	0.90	C _L =15pF, R _D =R _O =1kΩ		13				ns	Figure 1 Figure 2
		1.10 ≤ V _{CC} ≤ 1.30	C _L =30pF, R _D =R _O =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		1.0	2.0	6.0	1.0	6.8		
		2.30 ≤ V _{CC} ≤ 2.70	C _L =30pF, R _D =R _O =1kΩ	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		



信頼性データの要約:

デバイス名: NC7SV57FHX

RMS : W61419

パッケージ: uPAK2 1.00 x1.00mm 6L, 0.35P

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

デバイス名: NC7SPU04L6X

RMS : W61417

パッケージ: uPAK 1.45 x1.00mm 6L, 0.5P

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

デバイス名: NC7SZ18FHX

RMS : W44998

パッケージ: uPAK2 1.00 x1.00mm 6L, 0.35P

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10



デバイス名 : NC7SZ374L6X

RMS : W45056 / W53124

パッケージ : uPAK 1.45 x1.00mm 6L, 0.5P

テスト	仕様	条件	間隔	結果
HTOL	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours	1/80
HTSL	JESD22-A103	Ta= 150°C	1008 hours	1/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	-	0/240
TC + PC	JESD22-A104	Ta= -65°C to +150°C	500 cycles	0/80
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours	0/80
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours	0/80
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

電気的特性の要約:

電気的特性の提出は要求に基づきます。

影響を受ける部品の一覧:

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

部品番号	認定試験用ビークル
NC7SP08L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV08L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SPU04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP125L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP126L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV17L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP57L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP86L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV17L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV02L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV16L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX



最終製品 / プロセス変更通知

文書番号# : FPCN22780X

発行日: 03 Apr 2020

NC7SV126L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV07L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP32L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP17L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV00L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV125L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP19L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV11L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP157L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
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NC7SVU04L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
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NC7SV86L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP05L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV19L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7WV14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV14L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
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NC7SV58L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV34L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP58L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV05L6X	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV08FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV32FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV17FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP08FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV04FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP17FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV05FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV57FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP126FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX

**最終製品 / プロセス変更通知**

文書番号# : FPCN22780X

発行日: 03 Apr 2020

NC7SV00FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV02FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SP04FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX
NC7SV58FHX	NC7SPU04L6X, NC7SZ374L6X, NC7SV57FHX, NC7SZ18FHX