

# Triple Noninverting Schmitt-Trigger Buffer

## NL37WZ17

The NL37WZ17 is a high performance triple buffer with Schmitt-Trigger inputs operating from a 1.65 V to 5.5 V supply.

### Features

- Designed for 1.65 V to 5.5 V  $V_{CC}$  Operation
- 3.2 ns  $t_{PD}$  at  $V_{CC} = 5$  V (Typ)
- Inputs/Outputs Overvoltage Tolerant up to 5.5 V
- $I_{OFF}$  Supports Partial Power Down Protection
- Source/Sink 24 mA at 3.0 V
- Available in US8, UDFN8 and UQFN8 Packages
- Chip Complexity < 100 FETs
- NLV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

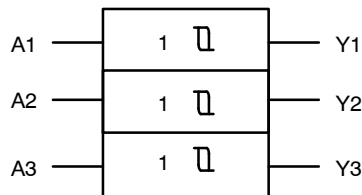
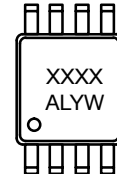


Figure 1. Logic Symbol

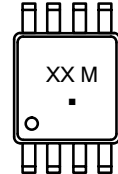
### MARKING DIAGRAMS



US8  
US SUFFIX  
CASE 493



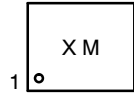
Commercial



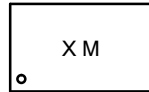
NLV Prefix



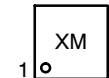
UDFN8, 1.45x1.0  
MU3 SUFFIX  
CASE 517BZ



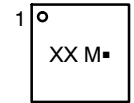
UDFN8, 1.95x1.0  
MU1 SUFFIX  
CASE 517CA



UQFN8, 1.4x1.2  
MQ2 SUFFIX  
CASE 523AS



UQFN8, 1.6x1.6  
MQ1 SUFFIX  
CASE 523AN



X, XX, XXXX = Specific Device Code  
A = Assembly Location  
L = Lot Code  
Y = Year Code  
W = Week Code  
M = Date Code  
▪ = Pb-Free Package

### ORDERING INFORMATION

See detailed ordering, marking and shipping information in the package dimensions section on page 6 of this data sheet.

# NL37WZ17

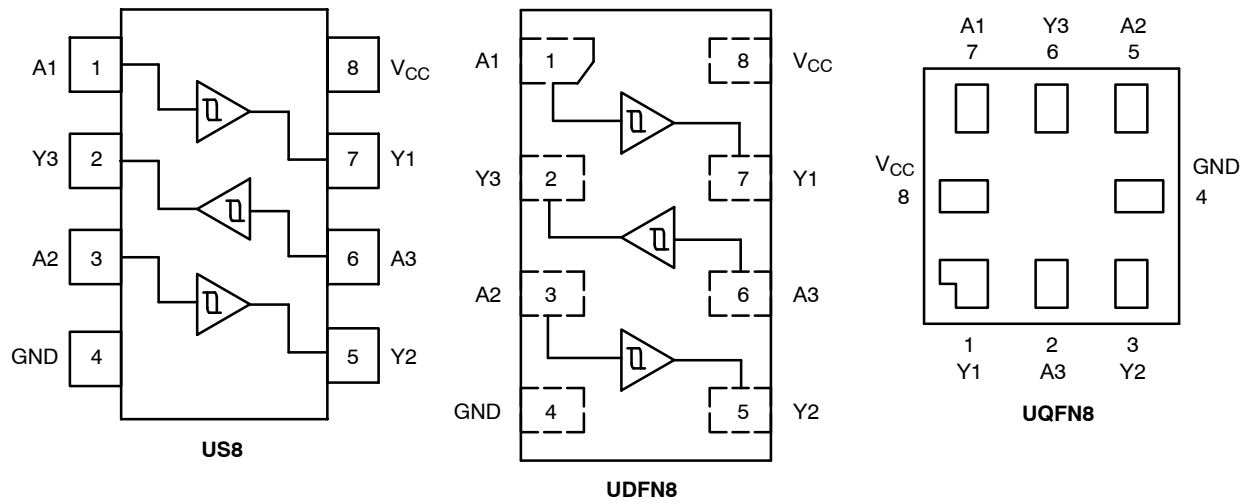


Figure 2. Pinout

## PIN ASSIGNMENT

Pin	US8 / UDFN8	UQFN8
1	A1	Y1
2	Y3	A3
3	A2	Y2
4	GND	GND
5	Y2	A2
6	A3	Y3
7	Y1	A1
8	V <sub>CC</sub>	V <sub>CC</sub>

## FUNCTION TABLE

A Input	Y Output
L	L
H	H

# NL37WZ17

## MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
V <sub>CC</sub>	DC Supply Voltage NLV	-0.5 to +7.0 -0.5 to +6.5	V
V <sub>IN</sub>	DC Input Voltage NLV	-0.5 to +7.0 -0.5 to +6.5	V
V <sub>OUT</sub>	DC Output Voltage (NLV) Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V <sub>CC</sub> = 0 V)	-0.5 to V <sub>CC</sub> + 0.5 -0.5 to +7.0 -0.5 to +7.0	V
	DC Output Voltage Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V <sub>CC</sub> = 0 V)	-0.5 to V <sub>CC</sub> + 0.5 -0.5 to +6.5 -0.5 to +6.5	
I <sub>IK</sub>	DC Input Diode Current V <sub>IN</sub> < GND	-50	mA
I <sub>OK</sub>	DC Output Diode Current V <sub>OUT</sub> < GND	-50	mA
I <sub>OUT</sub>	DC Output Source/Sink Current	±50	mA
I <sub>CC</sub> or I <sub>GND</sub>	DC Supply Current per Supply Pin or Ground Pin	±100	mA
T <sub>STG</sub>	Storage Temperature Range	-65 to +150	°C
T <sub>L</sub>	Lead Temperature, 1 mm from Case for 10 secs	260	°C
T <sub>J</sub>	Junction Temperature Under Bias	+150	°C
θ <sub>JA</sub>	Thermal Resistance (Note 2)	US8 UQFN8 UDFN 250 210 231	°C/W
P <sub>D</sub>	Power Dissipation in Still Air	US8 UQFN8 UDFN8 500 595 541	mW
MSL	Moisture Sensitivity	Level 1	-
F <sub>R</sub>	Flammability Rating Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in	-
V <sub>ESD</sub>	ESD Withstand Voltage (Note 3) Human Body Model Charged Device Model	2000 1000	V
I <sub>Latchup</sub>	Latchup Performance (Note 4)	±100	mA

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Applicable to devices with outputs that may be tri-stated.
2. Measured with minimum pad spacing on an FR4 board, using 10mm-by-1inch, 2 ounce copper trace no air flow per JESD51-7.
3. HBM tested to ANSI/ESDA/JEDEC JS-001-2017. CDM tested to EIA/JESD22-C101-F. JEDEC recommends that ESD qualification to EIA/JESD22-A115-A (Machine Model) be discontinued per JEDEC/JEP172A.
4. Tested to EIA/JESD78 Class II.

## RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
V <sub>CC</sub>	Positive DC Supply Voltage	1.65	5.5	V
V <sub>IN</sub>	DC Input Voltage	0	5.5	V
V <sub>OUT</sub>	DC Output Voltage Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode (V <sub>CC</sub> = 0 V)	0	V <sub>CC</sub>	V
		0	5.5	
		0	5.5	
T <sub>A</sub>	Operating Temperature Range	-55	+125	°C
t <sub>r</sub> , t <sub>f</sub>	Input Rise and Fall Time V <sub>CC</sub> = 1.65 V to 1.95 V V <sub>CC</sub> = 2.3 V to 2.7 V V <sub>CC</sub> = 3.0 V to 3.6 V V <sub>CC</sub> = 4.5 V to 5.5 V	0	No Limit	ns/V
		0	No Limit	
		0	No Limit	
		0	No Limit	

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

# NL37WZ17

## DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V <sub>CC</sub> (V)	T <sub>A</sub> = 25°C			-55°C ≤ T <sub>A</sub> ≤ 125°C		Units	
				Min	Typ	Max	Min	Max		
V <sub>T+</sub>	Positive Input Threshold Voltage (NLV)		1.65	0.6	1.0	1.4	0.6	1.4	V	
			2.3	1.0	1.5	1.8	1.0	1.8		
			2.7	1.2	1.7	2.0	1.2	2.0		
			3.0	1.3	1.9	2.2	1.3	2.2		
			4.5	1.9	2.7	3.1	1.9	3.1		
			5.5	2.2	3.3	3.6	2.2	3.6		
	Positive Input Threshold Voltage			1.65	-	1.0	1.4	-	1.4	V
				2.3	-	1.5	1.8	-	1.8	
				2.7	-	1.7	2.0	-	2.0	
				3.0	-	1.9	2.2	-	2.2	
				4.5	-	2.7	3.1	-	3.1	
				5.5	-	3.3	3.6	-	3.6	
V <sub>T-</sub>	Negative Input Threshold Voltage (NLV)		1.65	0.2	0.5	0.8	0.2	0.8	V	
			2.3	0.4	0.75	1.15	0.4	1.15		
			2.7	0.5	0.87	1.4	0.5	1.4		
			3.0	0.6	1.0	1.5	0.6	1.5		
			4.5	1.0	1.5	2.0	1.0	2.0		
			5.5	1.2	1.9	2.3	1.2	2.3		
	Negative Input Threshold Voltage			1.65	0.2	0.5	-	0.2	-	V
				2.3	0.4	0.75	-	0.4	-	
				2.7	0.5	0.87	-	0.5	-	
				3.0	0.6	1.0	-	0.6	-	
				4.5	1.0	1.5	-	1.0	-	
				5.5	1.2	1.9	-	1.2	-	
V <sub>H</sub>	Input Hysteresis Voltage		1.65	0.15	0.52	1.0	0.15	1.0	V	
			2.3	0.25	0.75	1.1	0.25	1.1		
			2.7	0.3	0.83	1.15	0.3	1.15		
			3.0	0.4	0.93	1.2	0.4	1.2		
			4.5	0.6	1.2	1.5	0.6	1.5		
			5.5	0.7	1.4	1.7	0.7	1.7		
V <sub>OH</sub>	High-Level Output Voltage	V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub> I <sub>OH</sub> = -100 μA	1.65 to 5.5	V <sub>CC</sub> - 0.1	V <sub>CC</sub>	-	V <sub>CC</sub> - 0.1	-	V	
		I <sub>OH</sub> = -4 mA	1.65	1.29	1.4	-	1.29	-		
		I <sub>OH</sub> = -8 mA	2.3	1.9	2.1	-	1.9	-		
		I <sub>OH</sub> = -12 mA	2.7	2.2	2.4	-	2.2	-		
		I <sub>OH</sub> = -16 mA	3.0	2.4	2.7	-	2.4	-		
		I <sub>OH</sub> = -24 mA	3.0	2.3	2.5	-	2.3	-		
		I <sub>OH</sub> = -32 mA	4.5	3.8	4.0	-	3.8	-		
V <sub>OL</sub>	Low-Level Output Voltage	V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub> I <sub>OL</sub> = 100 μA	1.65 to 5.5	-	-	0.1	-	0.1	V	
		I <sub>OL</sub> = 4 mA	1.65	-	0.08	0.24	-	0.24		
		I <sub>OL</sub> = 8 mA	2.3	-	0.2	0.3	-	0.3		
		I <sub>OL</sub> = 12 mA	2.7	-	0.22	0.4	-	0.4		
		I <sub>OL</sub> = 16 mA	3.0	-	0.28	0.4	-	0.4		
		I <sub>OL</sub> = 24 mA	3.0	-	0.38	0.55	-	0.55		
		I <sub>OL</sub> = 32 mA	4.5	-	0.42	0.55	-	0.55		
I <sub>IN</sub>	Input Leakage Current	V <sub>IN</sub> = 5.5 V or GND	1.65 to 5.5	-	-	±0.1	-	±1.0	μA	

**DC ELECTRICAL CHARACTERISTICS**

Symbol	Parameter	Condition	V <sub>CC</sub> (V)	T <sub>A</sub> = 25°C			-55°C ≤ T <sub>A</sub> ≤ 125°C		Units
				Min	Typ	Max	Min	Max	
I <sub>OFF</sub>	Power Off Leakage Current	V <sub>IN</sub> = 5.5 V or V <sub>OUT</sub> = 5.5 V	0	-	-	1.0	-	10	μA
I <sub>CC</sub>	Quiescent Supply Current	V <sub>IN</sub> = V <sub>CC</sub> or GND	5.5	-	-	1.0	-	10	μA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

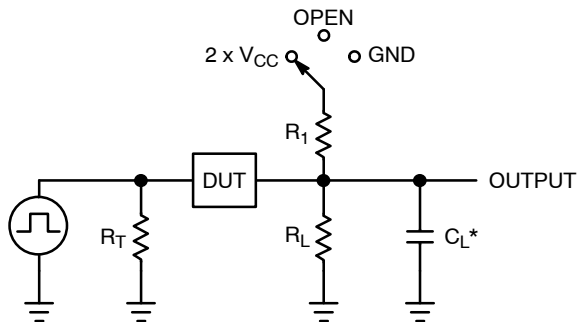
**AC ELECTRICAL CHARACTERISTICS**

Symbol	Parameter	V <sub>CC</sub> (V)	Test Conditions	T <sub>A</sub> = 25°C			T <sub>A</sub> = -55 to 125°C		Units
				Min	Typ	Max	Min	Max	
t <sub>PLH</sub> , t <sub>PHL</sub>	Propagation Delay	1.85 ± 0.15	C <sub>L</sub> = 15 pF R <sub>D</sub> = 1 MΩ R <sub>1</sub> = Open	-	6.8	9.2	-	9.2	ns
		2.5 ± 0.2		-	4.3	7.4	-	8.1	
		3.3 ± 0.3		-	3.3	5.0	-	7.0	
		5.0 ± 0.5		-	2.7	4.1	-	4.5	
		3.3 ± 0.3	C <sub>L</sub> = 50 pF, R <sub>D</sub> = 500 Ω, R <sub>1</sub> = Open	-	4.0	5.0	-	6.6	
		5.0 ± 0.5		-	3.2	4.9	-	5.4	

**CAPACITIVE CHARACTERISTICS**

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

5. C<sub>PD</sub> is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load. Average operating current can be obtained by the equation: I<sub>CC(OPR)</sub> = C<sub>PD</sub> • V<sub>CC</sub> • f<sub>in</sub> + I<sub>CC</sub>. C<sub>PD</sub> is used to determine the no-load dynamic power consumption; P<sub>D</sub> = C<sub>PD</sub> • V<sub>CC</sub><sup>2</sup> • f<sub>in</sub> + I<sub>CC</sub> • V<sub>CC</sub>.



C<sub>L</sub> includes probe and jig capacitance  
R<sub>T</sub> is Z<sub>OUT</sub> of pulse generator (typically 50 Ω)  
f = 1 MHz

**Figure 3. Test Circuit**

Test	Switch Position	C <sub>L</sub> , pF	R <sub>L</sub> , Ω	R <sub>1</sub> , Ω
t <sub>PLH</sub> / t <sub>PHL</sub>	Open	See AC Characteristics Table		
t <sub>PLZ</sub> / t <sub>PZL</sub>	2 x V <sub>CC</sub>	50	500	500
t <sub>PHZ</sub> / t <sub>PZH</sub>	GND	50	500	500

X = Don't Care

# NL37WZ17

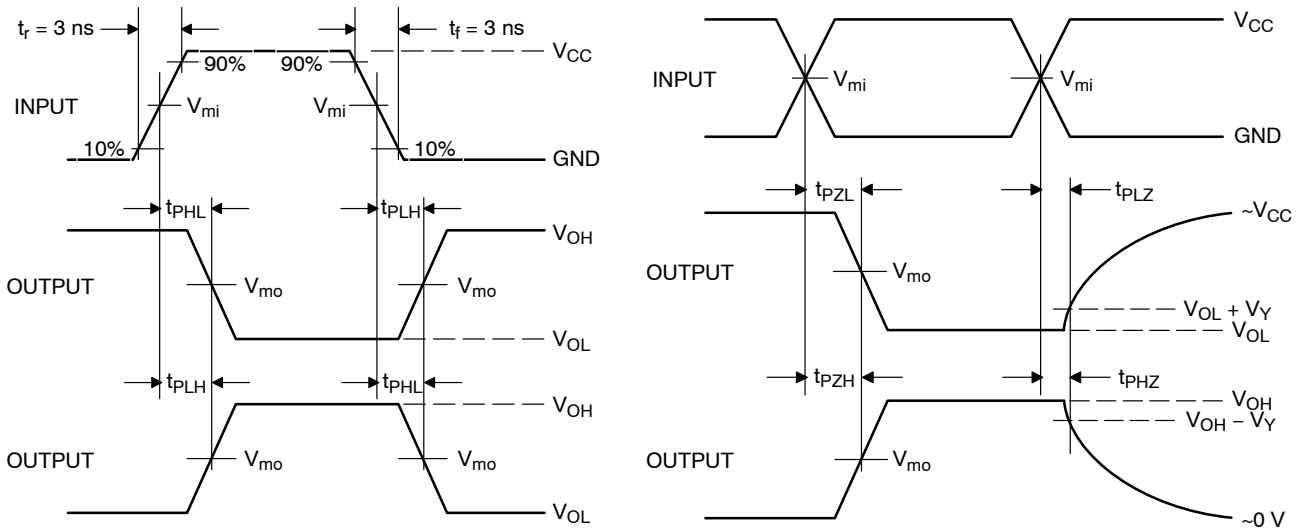


Figure 4. Switching Waveforms

V <sub>CC</sub> , V	V <sub>mi</sub> , V	V <sub>mo</sub> , V		V <sub>y</sub> , V
		t <sub>PLH</sub> , t <sub>PHL</sub>	t <sub>PZL</sub> , t <sub>PLZ</sub> , t <sub>PZH</sub> , t <sub>PHZ</sub>	
1.65 to 1.95	V <sub>CC</sub> /2	V <sub>CC</sub> /2	V <sub>CC</sub> /2	0.15
2.3 to 2.7	V <sub>CC</sub> /2	V <sub>CC</sub> /2	V <sub>CC</sub> /2	0.15
3.0 to 3.6	V <sub>CC</sub> /2	V <sub>CC</sub> /2	V <sub>CC</sub> /2	0.3
4.5 to 5.5	V <sub>CC</sub> /2	V <sub>CC</sub> /2	V <sub>CC</sub> /2	0.3

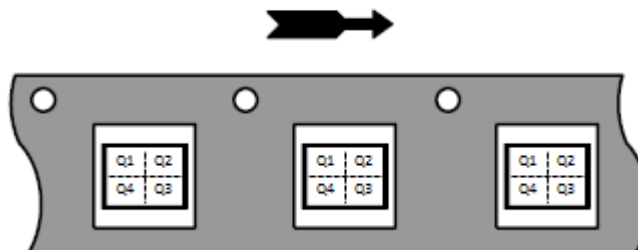
## DEVICE ORDERING INFORMATION

Device	Packages	Specific Device Code	Pin 1 Orientation (See below)	Shipping <sup>†</sup>
NL37WZ17USG	US8	LX	Q4	3000 / Tape & Reel
NL37WZ17USG-L22190**	US8	LX	Q4	3000 / Tape & Reel
NLV37WZ17USG*	US8	LX	Q4	3000 / Tape & Reel
NL37WZ17MQ1TCG (In Development)	UQFN8, 1.6 x 1.6, 0.5P	TBD	TBD	3000 / Tape & Reel
NL37WZ17MU1TCG (In Development)	UDFN8, 1.95 x 1.0, 0.5P	TBD	Q4	3000 / Tape & Reel
NL37WZ17MU3TCG (In Development)	UDFN8, 1.45 x 1.0, 0.35P	2	Q4	3000 / Tape & Reel
NL37WZ17MQ2TCG (In Development)	UQFN8, 1.4 x 1.2, 0.4P	TBD	TBD	3000 / Tape & Reel

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

\*NLV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable.  
 \*\*Please refer to NLV specifications for this device.

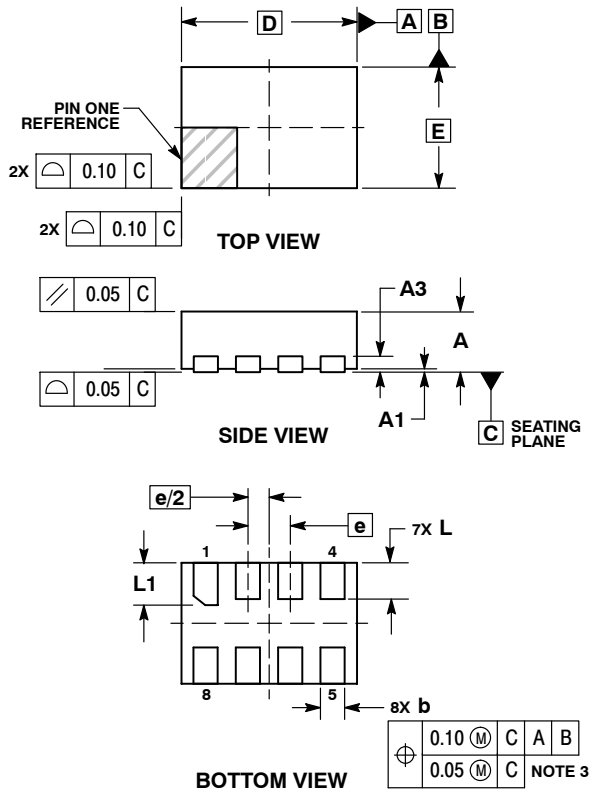
### Pin 1 Orientation in Tape and Reel Direction of Feed



# NL37WZ17

## PACKAGE DIMENSIONS

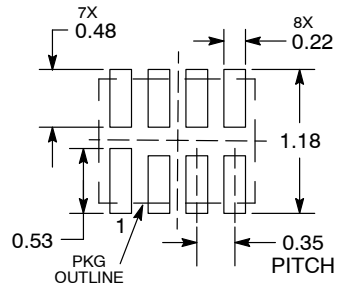
UDFN8, 1.45x1, 0.35P  
CASE 517BZ  
ISSUE O



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
  2. CONTROLLING DIMENSION: MILLIMETERS.
  3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.20 MM FROM TERMINAL TIP.
  4. PACKAGE DIMENSIONS EXCLUSIVE OF BURRS AND MOLD FLASH.

MILLIMETERS		
DIM	MIN	MAX
A	0.45	0.55
A1	0.00	0.05
A3	0.13 REF	
b	0.15	0.25
D	1.45 BSC	
E	1.00 BSC	
e	0.35 BSC	
L	0.25	0.35
L1	0.30	0.40

### RECOMMENDED SOLDERING FOOTPRINT\*



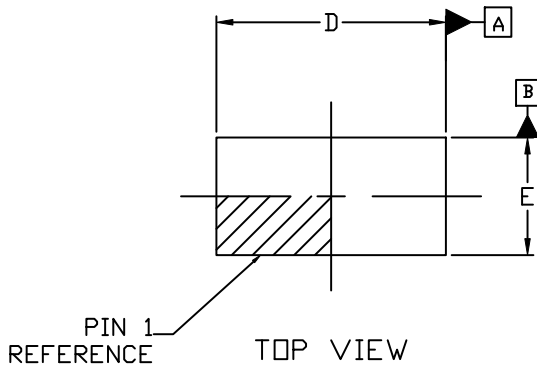
DIMENSIONS: MILLIMETERS

\*For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# NL37WZ17

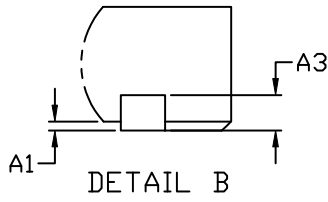
## PACKAGE DIMENSIONS

**UDFN8, 1.95x1, 0.5P**  
CASE 517CA  
ISSUE A

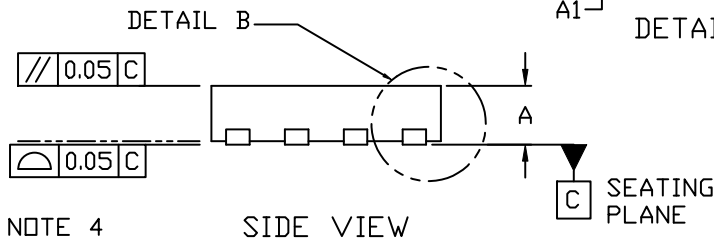


**NOTES:**

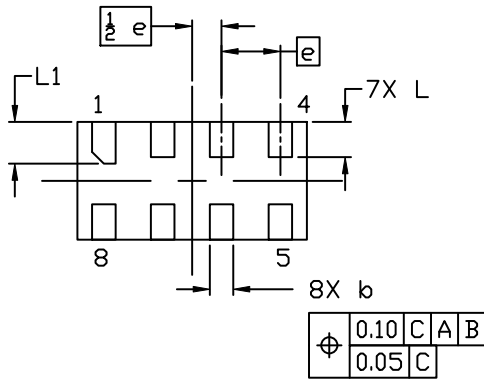
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.20 MM FROM THE TERMINAL TIP.
4. COPLANARITY APPLIES TO ALL THE TERMINALS.
5. PACKAGE DIMENSIONS EXCLUSIVE OF BURRS AND MOLD FLASH.



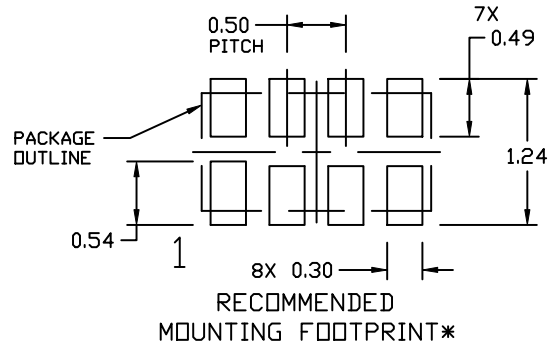
DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.45	0.50	0.55
A1	0.00	---	0.05
A3	0.13 REF		
b	0.15	0.20	0.25
D	1.85	1.95	2.05
E	0.90	1.00	1.10
e	0.50 BSC		
L	0.25	0.30	0.35
L1	0.30	0.35	0.40



NOTE 4



BOTTOM VIEW NOTE 3



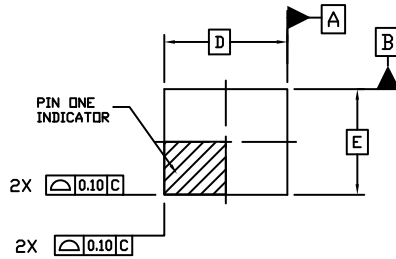
\* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERM/D.



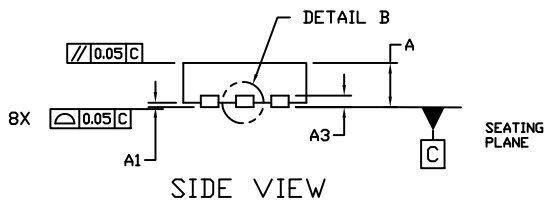
# NL37WZ17

## PACKAGE DIMENSIONS

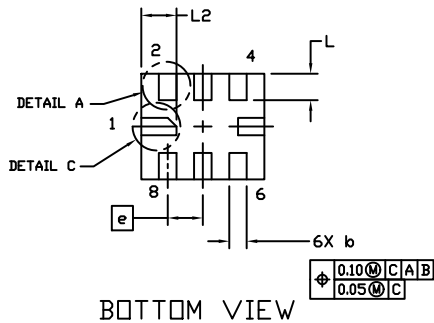
UQFN8, 1.4x1.2, 0.4P  
CASE 523AS  
ISSUE B



TOP VIEW



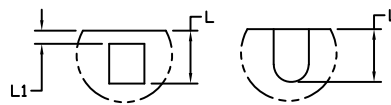
SIDE VIEW



BOTTOM VIEW



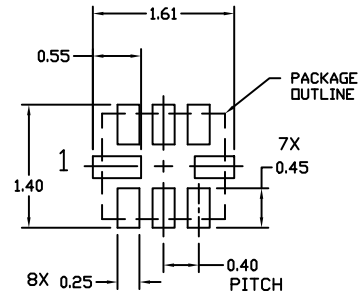
DETAIL B  
ALTERNATE CONSTRUCTION



DETAIL A  
ALTERNATE CONSTRUCTIONS



DETAIL C  
ALTERNATE CONSTRUCTION  
NOTE 4



RECOMMENDED  
MOUNTING FOOTPRINT \*

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.25MM FROM THE TERMINAL TIP.
4. REFER TO SPECIFIC DEVICE DATA SHEET FOR PIN 1 NOTCH LOCATION.

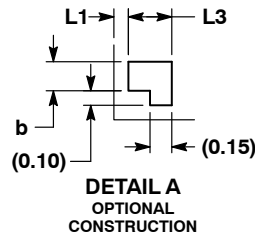
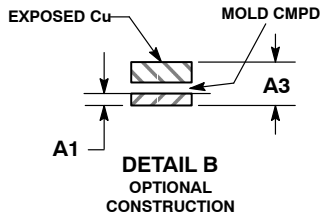
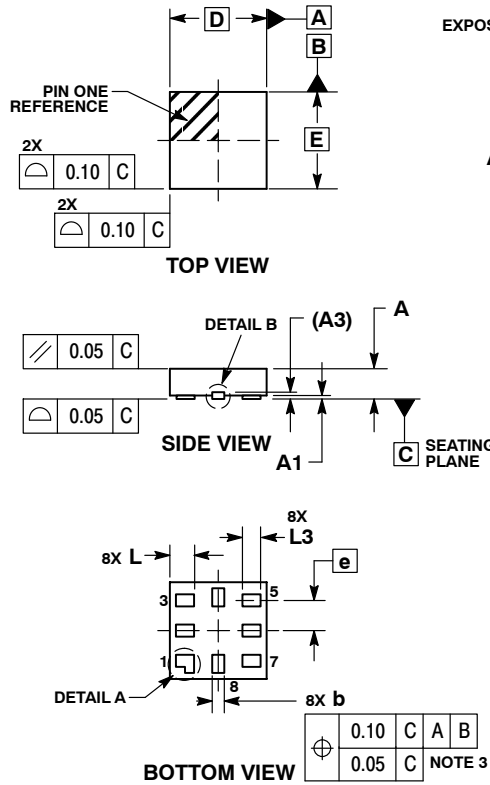
DIM	MILLIMETERS	
	MIN.	MAX.
A	0.45	0.55
A1	0.00	0.05
A3	0.13 REF	
b	0.15	0.25
D	1.40 BSC	
E	1.20 BSC	
e	0.40 BSC	
L	0.20	0.40
L1	---	0.15
L2	0.30	0.50

\* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# NL37WZ17

## PACKAGE DIMENSIONS

UQFN8, 1.6x1.6, 0.5P  
CASE 523AN  
ISSUE O

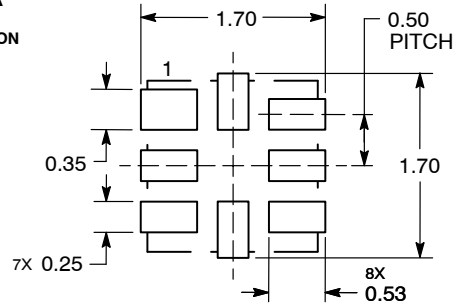


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM THE TERMINAL TIP.

MILLIMETERS		
DIM	MIN	MAX
A	0.45	0.60
A1	0.00	0.05
A3	0.13	REF
b	0.15	0.25
D	1.60	BSC
E	1.60	BSC
e	0.50	BSC
L	0.35	0.45
L1	---	0.15
L3	0.25	0.35

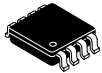
**SOLDERING FOOTPRINT\***



DIMENSIONS: MILLIMETERS

\*For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

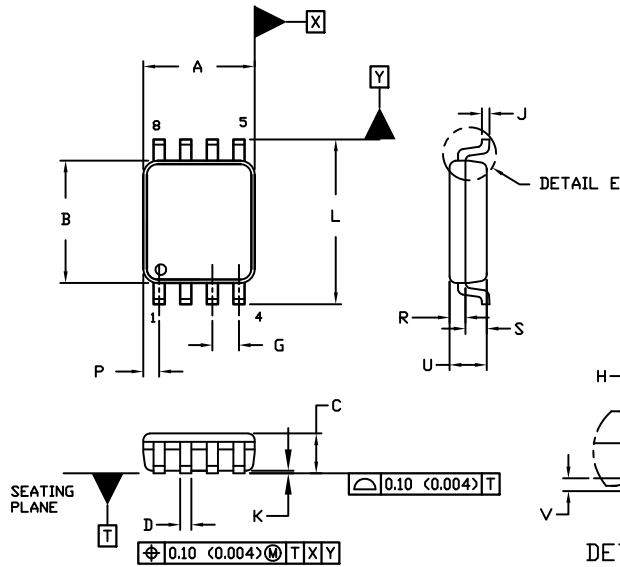
# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



SCALE 4:1

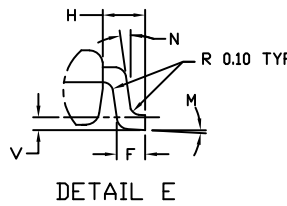
**US8**  
CASE 493  
ISSUE F

DATE 01 SEP 2021

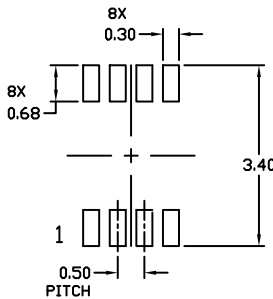


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSION, OR GATE BURR. MOLD FLASH, PROTRUSION, OR GATE BURR SHALL NOT EXCEED 0.14 (0.0055") PER SIDE.
4. DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH AND PROTRUSION SHALL NOT EXCEED 0.14 (0.0055") PER SIDE.
5. LEAD FINISH IS SOLDER PLATING WITH THICKNESS OF 0.0076-0.0203 MM (0.003-0.008").
6. ALL TOLERANCE UNLESS OTHERWISE SPECIFIED ±0.0508 MM (0.002").



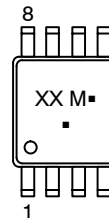
DIM	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	1.90	2.10	0.075	0.083
B	2.20	2.40	0.087	0.094
C	0.60	0.90	0.024	0.035
D	0.17	0.25	0.007	0.010
F	0.20	0.35	0.008	0.014
G	0.50 BSC		0.020 BSC	
H	0.40 REF		0.016 REF	
J	0.10	0.18	0.004	0.007
K	0.00	0.10	0.000	0.004
L	3.00	3.25	0.118	0.128
M	0°	6°	0°	6°
N	0°	10°	0°	10°
P	0.23	0.34	0.010	0.013
R	0.23	0.33	0.009	0.013
S	0.37	0.47	0.015	0.019
U	0.60	0.80	0.024	0.031
V	0.12 BSC		0.005 BSC	



**RECOMMENDED \*  
MOUNTING FOOTPRINT**

\* For additional information on our Pb-Free strategy and soldering details, please download the DN Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

**GENERIC  
MARKING DIAGRAM\***



- XX = Specific Device Code
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

<b>DOCUMENT NUMBER:</b>	<b>98AON04475D</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>US8</b>	<b>PAGE 1 OF 1</b>

onsemi and ONSEMI are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. onsemi does not convey any license under its patent rights nor the rights of others.

**onsemi**, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Email Requests to: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

**onsemi Website:** [www.onsemi.com](http://www.onsemi.com)

### TECHNICAL SUPPORT

**North American Technical Support:**

Voice Mail: 1 800-282-9855 Toll Free USA/Canada

Phone: 011 421 33 790 2910

**Europe, Middle East and Africa Technical Support:**

Phone: 00421 33 790 2910

For additional information, please contact your local Sales Representative