

# NLX2G16

## Dual Buffer

The NLX2G16 MiniGate™ is an advanced high-speed CMOS dual non-inverting buffer in ultra-small footprint.

The NLX2G16 input and output structures provide protection when voltages up to 7.0 V are applied, regardless of the supply voltage.

### Features

- High Speed:  $t_{PD} = 1.8 \text{ ns}$  (Typ) @  $V_{CC} = 5.0 \text{ V}$
- Designed for 1.65 V to 5.5 V  $V_{CC}$  Operation
- Low Power Dissipation:  $I_{CC} = 1 \mu\text{A}$  (Max) at  $T_A = 25^\circ\text{C}$
- 24 mA Balanced Output Source and Sink Capability
- Balanced Propagation Delays
- Overvoltage Tolerant (OVT) Input and Output Pins
- Ultra-Small Packages
- 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

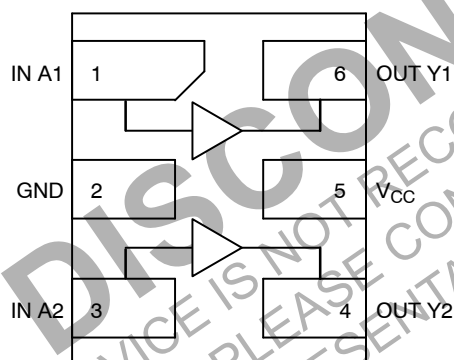


Figure 1. Pinout (Top View)

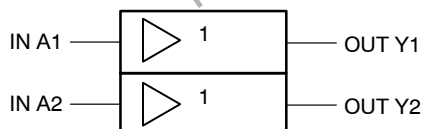


Figure 2. Logic Symbol

### FUNCTION TABLE

| A | Y |
|---|---|
| L | L |
| H | H |

### PIN ASSIGNMENT

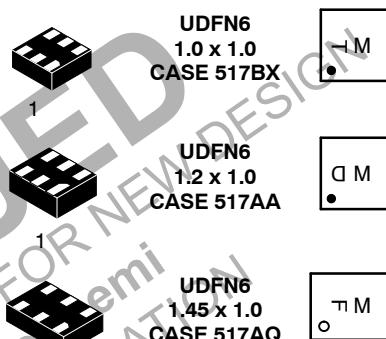
|   |          |
|---|----------|
| 1 | IN A1    |
| 2 | GND      |
| 3 | IN A2    |
| 4 | OUT Y2   |
| 5 | $V_{CC}$ |
| 6 | OUT Y1   |



ON Semiconductor®

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

### MARKING DIAGRAMS



M = Date Code

### ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

# NLX2G16

## MAXIMUM RATINGS

| Symbol        | Parameter                                                          | Value                | Unit |
|---------------|--------------------------------------------------------------------|----------------------|------|
| $V_{CC}$      | DC Supply Voltage                                                  | -0.5 to +7.0         | V    |
| $V_{IN}$      | DC Input Voltage                                                   | -0.5 to +7.0         | V    |
| $V_{OUT}$     | DC Output Voltage                                                  | -0.5 to +7.0         | V    |
| $I_{IK}$      | DC Input Diode Current<br>$V_{IN} < GND$                           | -50                  | mA   |
| $I_{OK}$      | DC Output Diode Current<br>$V_{OUT} < GND$                         | -50                  | mA   |
| $I_O$         | DC Output Source/Sink Current                                      | $\pm 50$             | mA   |
| $I_{CC}$      | DC Supply Current Per Supply Pin                                   | $\pm 100$            | mA   |
| $I_{GND}$     | DC Ground Current per Ground Pin                                   | $\pm 100$            | mA   |
| $T_{STG}$     | Storage Temperature Range                                          | -65 to +150          | °C   |
| $T_L$         | Lead Temperature, 1 mm from Case for 10 Seconds                    | 260                  | °C   |
| $T_J$         | Junction Temperature Under Bias                                    | 150                  | °C   |
| MSL           | Moisture Sensitivity                                               | Level 1              |      |
| $F_R$         | Flammability Rating Oxygen Index: 28 to 34                         | UL 94 V-0 @ 0.125 in |      |
| $I_{LATCHUP}$ | Latchup Performance Above $V_{CC}$ and Below GND at 125°C (Note 5) | $\pm 500$            | 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. Measured with minimum pad spacing on an FR4 board, using 10 mm-by-1 inch, 2 ounce copper trace no air flow.
2. Tested to EIA/JESD22-A114-A.
3. Tested to EIA/UESD22-A115-A.
4. Tested to JESD22-C101-A.
5. Tested to EIA / JESD78.

## RECOMMENDED OPERATING CONDITIONS

| Symbol              | Parameter                                                                                                                                                 | Min              | Max                 | Unit |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|------|
| $V_{CC}$            | Positive DC Supply Voltage                                                                                                                                | 1.65             | 5.5                 | V    |
| $V_{IN}$            | Digital Input Voltage                                                                                                                                     | 0                | 5.5                 | V    |
| $V_{OUT}$           | Output Voltage                                                                                                                                            | 0                | 5.5                 | V    |
| $T_A$               | Operating Free-Air Temperature                                                                                                                            | -55              | +125                | °C   |
| $\Delta t/\Delta V$ | Input Transition Rise or Fall Rate<br>$V_{CC} = 1.8 V \pm 0.18$<br>$V_{CC} = 2.5 V \pm 0.2 V$<br>$V_{CC} = 3.3 V \pm 0.3 V$<br>$V_{CC} = 5.0 V \pm 0.5 V$ | 0<br>0<br>0<br>0 | 20<br>20<br>10<br>5 | ns/V |

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.

## DC ELECTRICAL CHARACTERISTICS

| Symbol           | Parameter                        | Conditions                                                                        | V <sub>CC</sub><br>(V) | T <sub>A</sub> = 25°C  |                 |                        | T <sub>A</sub> = +85°C |                        | T <sub>A</sub> = -55°C to +125°C |                        | Unit |
|------------------|----------------------------------|-----------------------------------------------------------------------------------|------------------------|------------------------|-----------------|------------------------|------------------------|------------------------|----------------------------------|------------------------|------|
|                  |                                  |                                                                                   |                        | Min                    | Typ             | Max                    | Min                    | Max                    | Min                              | Max                    |      |
| V <sub>IH</sub>  | Low-Level Input Voltage          |                                                                                   | 1.65–1.95              | 0.75 x V <sub>CC</sub> |                 |                        | 0.75 x V <sub>CC</sub> |                        | 0.75 x V <sub>CC</sub>           |                        | V    |
|                  |                                  |                                                                                   | 2.3 to 5.5             | 0.70 x V <sub>CC</sub> |                 |                        | 0.70 x V <sub>CC</sub> |                        | 0.70 x V <sub>CC</sub>           |                        |      |
| V <sub>IL</sub>  | Low-Level Input Voltage          |                                                                                   | 1.65–1.95              |                        |                 | 0.25 x V <sub>CC</sub> |                        | 0.25 x V <sub>CC</sub> |                                  | 0.25 x V <sub>CC</sub> | V    |
|                  |                                  |                                                                                   | 2.3 – 5.5              |                        |                 | 0.30 x V <sub>CC</sub> |                        | 0.30 x V <sub>CC</sub> |                                  | 0.30 x V <sub>CC</sub> |      |
| V <sub>OH</sub>  | High-Level Output Voltage        | V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub><br>I <sub>OH</sub> = -100 µA | 1.65 – 5.5             | V <sub>CC</sub> - 0.1  | V <sub>CC</sub> |                        | V <sub>CC</sub> - 0.1  |                        | V <sub>CC</sub> - 0.1            |                        | V    |
|                  |                                  | V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub><br>I <sub>OH</sub> = -4 mA   | 1.65                   | 1.29                   | 1.52            |                        | 1.29                   |                        | 1.29                             |                        |      |
|                  |                                  | I <sub>OH</sub> = -8 mA                                                           | 2.3                    | 1.9                    | 2.15            |                        | 1.9                    |                        | 1.9                              |                        |      |
|                  |                                  | I <sub>OH</sub> = -16 mA                                                          | 3.0                    | 2.4                    | 2.8             |                        | 2.4                    |                        | 2.4                              |                        |      |
|                  |                                  | I <sub>OH</sub> = -24 mA                                                          | 3.0                    | 2.3                    | 2.68            |                        | 2.3                    |                        | 2.3                              |                        |      |
|                  |                                  | I <sub>OH</sub> = -32 mA                                                          | 4.5                    | 3.8                    | 4.2             |                        | 3.8                    |                        | 3.8                              |                        |      |
| V <sub>OL</sub>  | Low-Level Output Voltage         | V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub><br>I <sub>OL</sub> = 100 µA  | 1.65 – 5.5             |                        |                 | 0.1                    | 0.1                    |                        |                                  | 0.1                    | V    |
|                  |                                  | V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub><br>I <sub>OL</sub> = 4 mA    | 1.65                   |                        | 0.08            | 0.24                   |                        | 0.24                   |                                  | 0.24                   |      |
|                  |                                  | I <sub>OL</sub> = 8 mA                                                            | 2.3                    |                        | 0.1             | 0.3                    |                        | 0.3                    |                                  | 0.3                    |      |
|                  |                                  | I <sub>OL</sub> = 16 mA                                                           | 3.0                    |                        | 0.15            | 0.4                    |                        | 0.4                    |                                  | 0.4                    |      |
|                  |                                  | I <sub>OL</sub> = 24 mA                                                           | 3.0                    |                        | 0.22            | 0.55                   |                        | 0.55                   |                                  | 0.55                   |      |
|                  |                                  | I <sub>OL</sub> = 32 mA                                                           | 4.5                    |                        | 0.22            | 0.55                   |                        | 0.55                   |                                  | 0.55                   |      |
| I <sub>IN</sub>  | Input Leakage Current            | 0 ≤ V <sub>IN</sub> ≤ 5.5 V                                                       | 0 to 5.5               |                        |                 | ±0.1                   |                        | ±1.0                   |                                  | ±1.0                   | µA   |
| I <sub>OFF</sub> | Power-Off Output Leakage Current | V <sub>IN</sub> or V <sub>OUT</sub> = 5.5 V                                       | 0                      |                        |                 | 1.0                    |                        | 10                     |                                  | 10                     | µA   |
| I <sub>CC</sub>  | Quiescent Supply Current         | V <sub>IN</sub> = 0 V or V <sub>CC</sub>                                          | 5.5                    |                        |                 | 1.0                    |                        | 10                     |                                  | 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.

# NLX2G16

## AC ELECTRICAL CHARACTERISTICS (Input $t_r = t_f = 3.0$ nS)

| Symbol                   | Parameter                                 | $V_{CC}$<br>(V) | Test Condition                                      | $T_A = 25^\circ\text{C}$ |         |     | $T_A = -55^\circ\text{C}$<br>to $+125^\circ\text{C}$ |      | Unit |
|--------------------------|-------------------------------------------|-----------------|-----------------------------------------------------|--------------------------|---------|-----|------------------------------------------------------|------|------|
|                          |                                           |                 |                                                     | Min                      | Typ     | Max | Min                                                  | Max  |      |
| $t_{PLH}$ ,<br>$t_{PHL}$ | Propagation Delay Input A to Output       | 1.65–1.95       | $R_L = 1\text{ M}\Omega$ ,<br>$C_L = 15\text{ pF}$  | 1.8                      | 8.0     | 9.6 | 1.8                                                  | 10.2 | ns   |
|                          |                                           | 2.3–2.7         | $R_L = 1\text{ M}\Omega$ ,<br>$C_L = 15\text{ pF}$  | 1.0                      | 3.0     | 5.2 | 1.0                                                  | 5.8  |      |
|                          |                                           | 3.0–3.6         | $R_L = 1\text{ M}\Omega$ ,<br>$C_L = 15\text{ pF}$  | 0.8                      | 2.3     | 3.6 | 0.8                                                  | 4.0  |      |
|                          |                                           |                 | $R_L = 500\text{ }\Omega$ ,<br>$C_L = 50\text{ pF}$ | 1.2                      | 3.0     | 4.6 | 1.2                                                  | 5.1  |      |
|                          |                                           | 4.5–5.5         | $R_L = 1\text{ M}\Omega$ ,<br>$C_L = 15\text{ pF}$  | 0.5                      | 1.8     | 2.9 | 0.5                                                  | 3.2  |      |
|                          |                                           |                 | $R_L = 500\text{ }\Omega$ ,<br>$C_L = 50\text{ pF}$ | 0.8                      | 2.4     | 3.8 | 0.8                                                  | 4.2  |      |
| $C_{IN}$                 | Input Capacitance                         | 5.5             | $V_{IN} = 0\text{ V or }V_{CC}$                     |                          | 7.0     |     |                                                      |      | pF   |
| $C_{PD}$                 | Power Dissipation Capacitance<br>(Note 6) | 3.3<br>5.5      | 10 MHz<br>$V_{IN} = 0\text{ V or }V_{CC}$           |                          | 9<br>11 |     |                                                      |      | pF   |

6.  $C_{PD}$  is defined as the value of the internal equivalent capacitance which is calculated from the dynamic operating current consumption without load. Average operating current can be obtained by the equation  $I_{CC(OPR)} = C_{PD} \cdot V_{CC} \cdot f_{in} + I_{CC}$ .  $C_{PD}$  is used to determine the no-load dynamic power consumption:  $P_D = C_{PD} \cdot V_{CC}^2 \cdot f_{in} + I_{CC} \cdot V_{CC}$ .

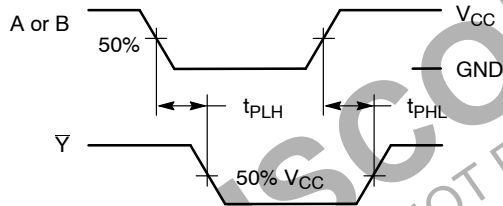
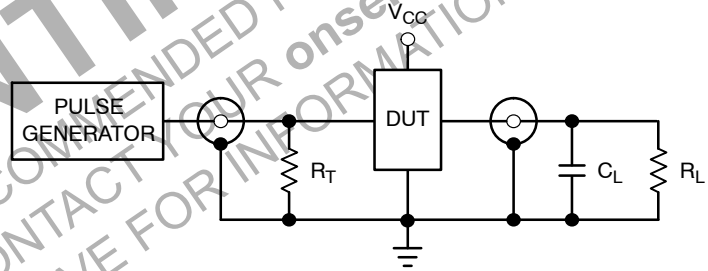


Figure 3. Switching Waveforms



$R_T = Z_{OUT}$  of pulse generator (typically 50  $\Omega$ )

Figure 4. Test Circuit

## ORDERING INFORMATION

| Device                            | Package                              | Shipping†          |
|-----------------------------------|--------------------------------------|--------------------|
| NLX2G16MUTCG                      | UDFN6, 1.2 x 1.0, 0.4P<br>(Pb-Free)  | 3000 / Tape & Reel |
| NLX2G16AMUTCG,<br>NLVX2G16AMUTCG* | UDFN6, 1.45 x 1.0, 0.5P<br>(Pb-Free) | 3000 / Tape & Reel |
| NLX2G16CMUTCG                     | UDFN6, 1.0 x 1.0, 0.35P<br>(Pb-Free) | 3000 / Tape & Reel |

†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.

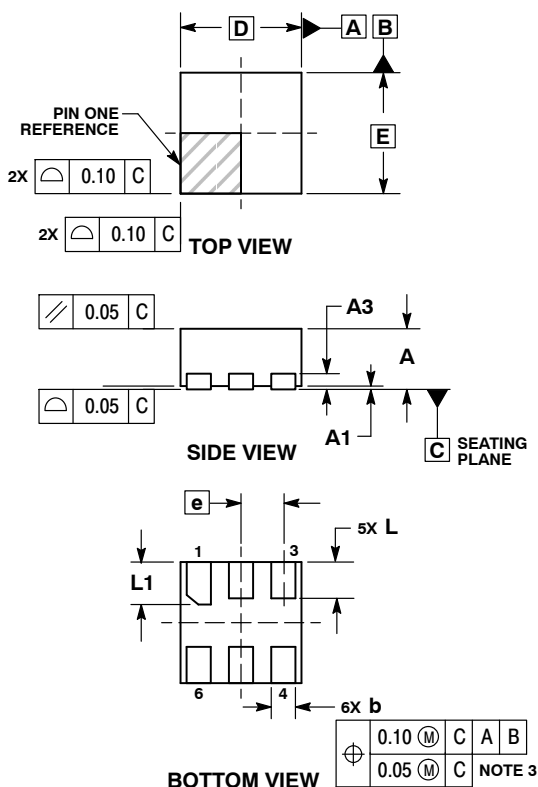
# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



SCALE 4:1

UDFN6, 1x1, 0.35P  
CASE 517BX  
ISSUE O

DATE 18 MAY 2011

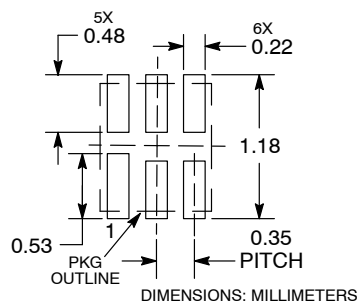


## NOTES:

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.

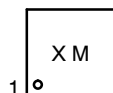
| MILLIMETERS |      |      |
|-------------|------|------|
| DIM         | MIN  | MAX  |
| A           | 0.45 | 0.55 |
| A1          | 0.00 | 0.05 |
| A3          | 0.13 | REF  |
| b           | 0.12 | 0.22 |
| D           | 1.00 | BSC  |
| E           | 1.00 | BSC  |
| e           | 0.35 | BSC  |
| L           | 0.25 | 0.35 |
| L1          | 0.30 | 0.40 |

## RECOMMENDED SOLDERING FOOTPRINT\*



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

## GENERIC MARKING DIAGRAM\*



X = Specific Device Code  
M = Date Code

\*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.

|                  |                   |                                                                                                                                                                                  |
|------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOCUMENT NUMBER: | 98AON56787E       | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| DESCRIPTION:     | UDFN6, 1x1, 0.35P | PAGE 1 OF 1                                                                                                                                                                      |

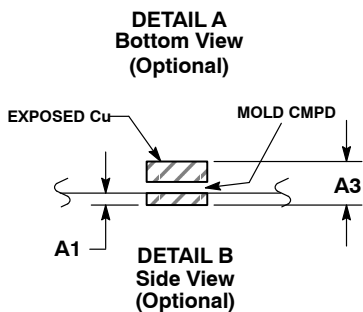
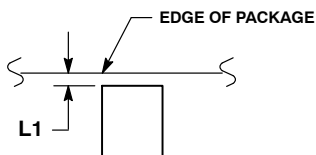
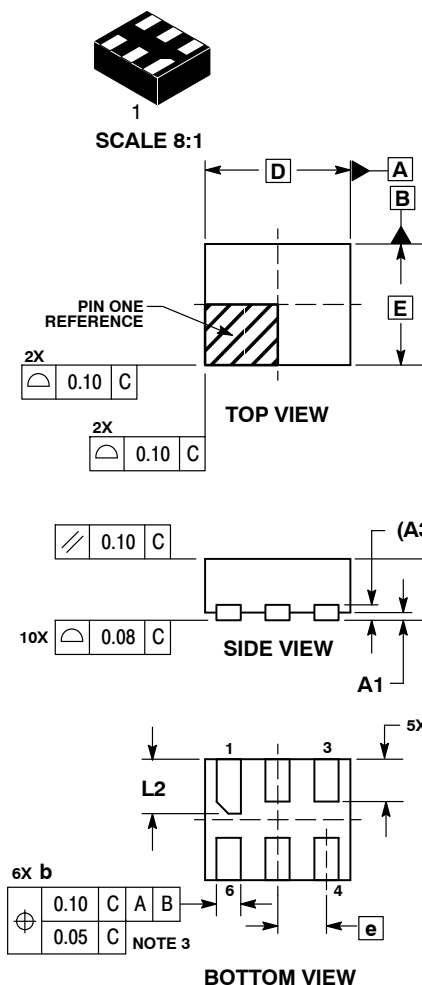
onsemi and onsemi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding 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.

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



UDFN6, 1.2x1.0, 0.4P  
CASE 517AA  
ISSUE D

DATE 03 SEP 2010



## 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 0.25 AND 0.30 mm FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

| MILLIMETERS |           |      |
|-------------|-----------|------|
| DIM         | MIN       | MAX  |
| A           | 0.45      | 0.55 |
| A1          | 0.00      | 0.05 |
| A3          | 0.127 REF |      |
| b           | 0.15      | 0.25 |
| D           | 1.20 BSC  |      |
| E           | 1.00 BSC  |      |
| e           | 0.40 BSC  |      |
| L           | 0.30      | 0.40 |
| L1          | 0.00      | 0.15 |
| L2          | 0.40      | 0.50 |

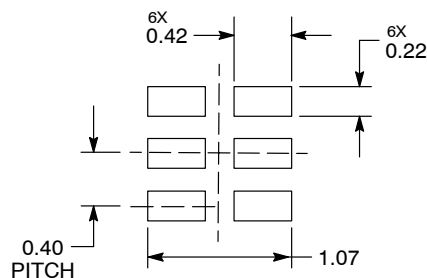
## GENERIC MARKING DIAGRAM\*



X = Specific Device Code  
M = Date Code

\*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.

## MOUNTING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

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

|                  |                           |                                                                                                                                                                                  |
|------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOCUMENT NUMBER: | 98AON22068D               | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| DESCRIPTION:     | 6 PIN UDFN, 1.2X1.0, 0.4P | PAGE 1 OF 4                                                                                                                                                                      |

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.

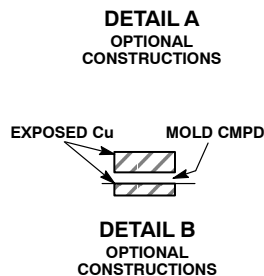
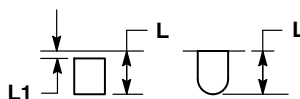
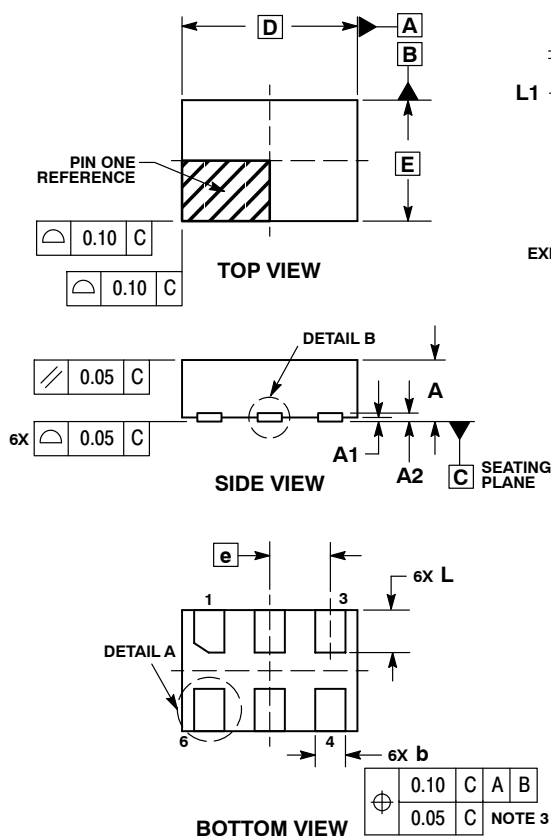
# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



SCALE 4:1

UDFN6, 1.45x1.0, 0.5P  
CASE 517AQ  
ISSUE O

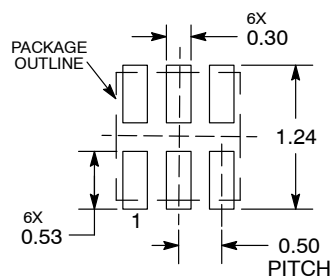
DATE 15 MAY 2008



- 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 | 0.55 |
| A1          | 0.00 | 0.05 |
| A2          | 0.07 | REF  |
| b           | 0.20 | 0.30 |
| D           | 1.45 | BSC  |
| E           | 1.00 | BSC  |
| e           | 0.50 | BSC  |
| L           | 0.30 | 0.40 |
| L1          | ---  | 0.15 |

## MOUNTING FOOTPRINT



DIMENSIONS: MILLIMETERS

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

## GENERIC MARKING DIAGRAM\*



X = Specific Device Code  
M = Date Code

\*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.

|                  |                       |                                                                                                                                                                                     |
|------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOCUMENT NUMBER: | 98AON30313E           | Electronic versions are uncontrolled except when accessed directly from the Document Repository.<br>Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| DESCRIPTION:     | UDFN6, 1.45x1.0, 0.5P | PAGE 1 OF 1                                                                                                                                                                         |

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.

## ADDITIONAL INFORMATION

### TECHNICAL PUBLICATIONS:

Technical Library: [www.onsemi.com/design/resources/technical-documentation](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at  
[www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)