# TinyLogic ULP-A Dual Inverter

## NC7WV04

The NC7WV04 is a dual inverter in tiny footprint packages. The device is designed to operate for $V_{CC}$ = 0.9 V to 3.6 V.

### Features

- Designed for 0.9 V to 3.6 V $V_{CC}$ Operation
- 1.6 ns $t_{PD}$ at 3.3 V (Typ)
- Inputs/Outputs Over−Voltage Tolerant up to 3.6 V
- $I_{OFF}$ Supports Partial Power Down Protection
- Source/Sink 24 mA at 3.3 V
- Available in SC−88A and MicroPak™ Packages
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant
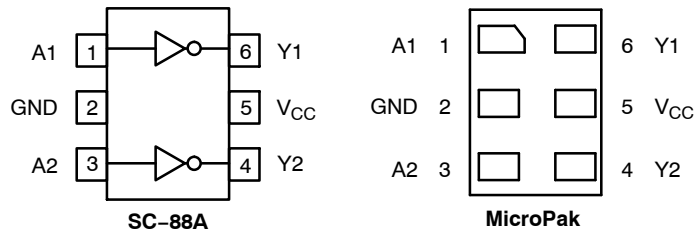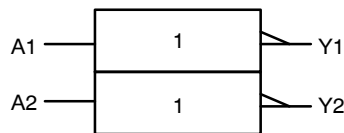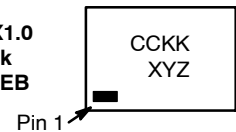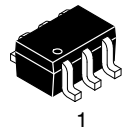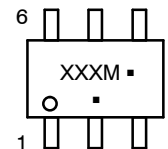
**ON Semiconductor®**

**MARKING DIAGRAMS**

SIP6 1.45X1.0 MicroPak CASE 127EB

CCKK XYZ

Pin 1

CC = Specific Device Code
KK = 2−Digit Lot Run Traceability Code
XY = 2−Digit Date Code
Z = Assembly Plant Code

SC−88 DF SUFFIX CASE 419B−02

XXXM ▪

XXX = Specific Devic Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or position may vary depending upon manufacturing location.



**Figure 1. Pinout Diagrams** (Top Views)



**Figure 2. Logic Symbol**

### ORDERING INFORMATION

See detailed ordering, marking and shipping information on page 6 of this data sheet.

### PIN ASSIGNMENT

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

### FUNCTION TABLE

| A Input | Y Output |
|---------|----------|
| L | H |
| H | L |

**MAXIMUM RATINGS**

| Symbol | Characteristics | | Value | Unit |
|---|---|---|---|---|
| $V_{CC}$ | DC Supply Voltage | | −0.5 to +4.3 | V |
| $V_{IN}$ | DC Input Voltage | | −0.5 to +4.3 | V |
| $V_{OUT}$ | DC Output Voltage | Active−Mode (High or Low State)<br>Tri−State Mode (Note 1)<br>Power−Down Mode ($V_{CC}$ = 0 V) | −0.5 to $V_{CC}$ + 0.5<br>−0.5 to +4.3<br>−0.5 to +4.3 | V |
| $I_{IK}$ | DC Input Diode Current | $V_{IN}$ < GND | −50 | mA |
| $I_{OK}$ | DC Output Diode Current | $V_{OUT}$ < GND | −50 | mA |
| $I_{OUT}$ | DC Output Source/Sink Current | | ±50 | mA |
| $I_{CC}$ or $I_{GND}$ | DC Supply Current per Supply Pin or Ground Pin | | ±50 | 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 |
| $\theta_{JA}$ | Thermal Resistance (Note 2) | SC−88A<br>MicroPak | 377<br>154 | °C/W |
| $P_D$ | Power Dissipation in Still Air | SC−88A<br>MicroPak | 332<br>812 | mW |
| MSL | Moisture Sensitivity | | Level 1 | − |
| $F_R$ | Flammability Rating | Oxygen Index: 28 to 34 | UL 94 V−0 @ 0.125 in | − |
| $V_{ESD}$ | ESD Withstand Voltage (Note 3) | Human Body Model<br>Charged Device Model | 2000<br>1000 | V |
| $I_{Latchup}$ | 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 10 mm−by−1 inch, 2 ounce copper trace no air flow per JESD51−7.
3. HBM tested to EIA / JESD22−A114−A. CDM tested to JESD22−C101−A. JEDEC recommends that ESD qualification to EIA/JESD22−A115A (Machine Model) be discontinued.
4. Tested to EIA/JESD78 Class II.

# NC7WV04

## RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter | | Min | Max | Unit |
|--------|-----------|---|-----|-----|------|
| $V_{CC}$ | Positive DC Supply Voltage | | 0.9 | 3.6 | V |
| $V_{IN}$ | DC Input Voltage | | 0 | 3.6 | V |
| $V_{OUT}$ | DC Output Voltage | Active−Mode (High or Low State)<br>Tri−State Mode (Note 1)<br>Power−Down Mode ($V_{CC}$ = 0 V) | 0<br>0<br>0 | $V_{CC}$<br>3.6<br>3.6 | |
| $T_A$ | Operating Temperature Range | | −40 | +85 | °C |
| $t_r$ , $t_f$ | Input Transition Rise and Fall Time | $V_{CC}$ = 3.3 V ± 0.3 V | 0 | 10 | 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 | Condition | $V_{CC}$ (V) | $T_A$ = 25°C | | | $T_A$ = −40°C to +85°C | | Unit |
|--------|-----------|-----------|--------------|-----|-----|-----|-----|-----|------|
| | | | | Min | Typ | Max | Min | Max | |
| $V_{IH}$ | High−Level Input Voltage | | 0.9 | – | 0.5 | – | – | – | V |
| | | | 1.1 to 1.3 | 0.65 x $V_{CC}$ | – | – | 0.65 x $V_{CC}$ | – | |
| | | | 1.4 to 1.6 | 0.65 x $V_{CC}$ | – | – | 0.65 x $V_{CC}$ | – | |
| | | | 1.65 to 1.95 | 0.65 x $V_{CC}$ | – | – | 0.65 x $V_{CC}$ | – | |
| | | | 2.3 to <2.7 | 1.6 | – | – | 1.6 | – | |
| | | | 2.7 to 3.6 | 2.0 | – | – | 2.0 | – | |
| $V_{IL}$ | Low−Level Input Voltage | | 0.9 | – | 0.5 | – | – | – | V |
| | | | 1.1 to 1.3 | – | – | 0.35 x $V_{CC}$ | – | 0.35 x $V_{CC}$ | |
| | | | 1.4 to 1.6 | – | – | 0.35 x $V_{CC}$ | – | 0.35 x $V_{CC}$ | |
| | | | 1.65 to 1.95 | – | – | 0.35 x $V_{CC}$ | – | 0.35 x $V_{CC}$ | |
| | | | 2.3 to <2.7 | – | – | 0.7 | – | 0.7 | |
| | | | 2.7 to 3.6 | – | – | 0.8 | – | 0.8 | |
| $V_{OH}$ | High−Level Output Voltage | $V_{IN}$ = $V_{IH}$ or $V_{IL}$ | | | | | | | V |
| | | $I_{OH}$ = −100 μA | 0.9 | – | $V_{CC}$ − 0.1 | – | – | – | |
| | | | 1.1 to 1.3 | $V_{CC}$ − 0.1 | – | – | $V_{CC}$ − 0.1 | – | |
| | | | 1.4 to 1.6 | $V_{CC}$ − 0.1 | – | – | $V_{CC}$ − 0.1 | – | |
| | | | 1.65 to 1.95 | $V_{CC}$ − 0.2 | – | – | $V_{CC}$ − 0.2 | – | |
| | | | 2.3 to <2.7 | $V_{CC}$ − 0.2 | – | – | $V_{CC}$ − 0.2 | – | |
| | | | 2.7 to 3.6 | $V_{CC}$ − 0.2 | – | – | $V_{CC}$ − 0.2 | – | |
| | | $I_{OH}$ = −2 mA | 1.1 o 1.3 | 0.75 x $V_{CC}$ | – | – | 0.75 x $V_{CC}$ | – | |
| | | $I_{OH}$ = −4 mA | 1.4 to 1.6 | 0.75 x $V_{CC}$ | – | – | 0.75 x $V_{CC}$ | – | |
| | | $I_{OH}$ = −6 mA | 1.65 to 1.95 | 1.25 | – | – | 1.25 | – | |
| | | | 2.3 to <2.7 | 2.0 | – | – | 2.0 | – | |
| | | $I_{OH}$ = −12 mA | 2.3 to <2.7 | 1.8 | – | – | 1.8 | – | |
| | | | 2.7 to 3.6 | 2.2 | – | – | 2.2 | – | |
| | | $I_{OH}$ = −18 mA | 2.3 to <2.7 | 1.7 | – | – | 1.7 | – | |
| | | | 2.7 to 3.6 | 2.4 | – | – | 2.4 | – | |
| | | $I_{OH}$ = −24 mA | 2.7 to 3.6 | 2.2 | – | – | 2.2 | – | |

## DC ELECTRICAL CHARACTERISTICS (continued)

| Symbol | Parameter | Condition | $V_{CC}$ (V) | $T_A$ = 25°C | | | $T_A$ = −40°C to +85°C | | Unit |
|--------|-----------|-----------|--------------|-----|-----|-----|-----|-----|------|
| | | | | Min | Typ | Max | Min | Max | |
| $V_{OL}$ | Low−Level Output Voltage | $V_{IN}$ = $V_{IH}$ or $V_{IL}$ | | | | | | | V |
| | | $I_{OL}$ = 100 μA | 0.9 | – | 0.1 | – | – | – | |
| | | | 1.1 to 1.3 | – | – | 0.1 | – | 0.1 | |
| | | | 1.4 to 1.6 | – | – | 0.1 | – | 0.1 | |
| | | | 1.65 to 1.95 | – | – | 0.2 | – | 0.2 | |
| | | | 2.3 to < 2.7 | – | – | 0.2 | – | 0.2 | |
| | | | 2.7 to 3.6 | – | – | 0.2 | – | 0.2 | |
| | | $I_{OL}$ = 2 mA | 1.1 o 1.3 | – | – | 0.25 x $V_{CC}$ | – | 0.25 x $V_{CC}$ | |
| | | $I_{OL}$ = 4 mA | 1.4 to 1.6 | – | – | 0.25 x $V_{CC}$ | – | 0.25 x $V_{CC}$ | |
| | | $I_{OL}$ = 6 mA | 1.65 to 1.95 | – | – | 0.3 | – | 0.3 | |
| | | $I_{OL}$ = 12 mA | 2.3 to <2.7 | – | – | 0.4 | – | 0.4 | |
| | | | 2.7 to 3.6 | – | – | 0.4 | – | 0.4 | |
| | | $I_{OL}$ = 18 mA | 2.3 to <2.7 | – | – | 0.6 | – | 0.6 | |
| | | | 2.7 to 3.6 | – | – | 0.4 | – | 0.4 | |
| | | $I_{OL}$ = 24 mA | 2.7 to 3.6 | – | – | 0.55 | – | 0.55 | |
| $I_{IN}$ | Input Leakage Current | $V_{IN}$ = 0 V to 3.6 V | 0.9 to 3.6 | – | – | ±0.1 | – | ±0.5 | μA |
| $I_{OFF}$ | Power Off Leakage Current | $V_{IN}$ = 0 V to 3.6 V or $V_{OUT}$ = 0 V to 3.6 V | 0 | – | – | 0.5 | – | 0.5 | μA |
| $I_{CC}$ | Quiescent Supply Current | $V_{IN}$ = $V_{CC}$ or GND | 0.9 to 3.6 | – | – | 0.9 | – | 0.9 | 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 | Condition | $V_{CC}$ (V) | $T_A$ = 25°C | | | $T_A$ = −40°C to +85°C | | Unit |
|--------|-----------|-----------|--------------|-----|-----|-----|-----|-----|------|
| | | | | Min | Typ | Max | Min | Max | |
| $t_{PLH}$, $t_{PHL}$ | Propagation Delay, A to Y (Figures 3 and 4) | $R_L$ = 1 MΩ, $C_L$ = 15 pF | 0.9 | – | 17.4 | – | – | – | ns |
| | | $R_L$ = 2 kΩ, $C_L$ = 15 pF | 1.1 to 1.3 | – | 4.5 | 12.1 | – | 14.9 | |
| | | | 1.4 to 1.6 | – | 2.9 | 5.4 | – | 6.0 | |
| | | $R_L$ = 500 Ω, $C_L$ = 30 pF | 1.65 to 1.95 | – | 2.5 | 4.6 | – | 5.2 | |
| | | | 2.3 to 2.7 | – | 1.9 | 3.6 | – | 3.8 | |
| | | | 2.7 to 3.6 | – | 1.6 | 3.0 | – | 3.3 | |

## CAPACITIVE CHARACTERISTICS

| Symbol | Parameter | Test Condition | Typical ($T_A$ = 25°C) | Unit |
|--------|-----------|----------------|------------------------|------|
| $C_{IN}$ | Input Capacitance | $V_{CC}$ = 0 V | 2.0 | pF |
| $C_{OUT}$ | Output Capacitance | $V_{CC}$ = 0 V | 4.5 | pF |
| $C_{PD}$ | Power Dissipation Capacitance (Note 5) | f = 10 MHz, $V_{CC}$ = 0.9 to 3.6 V, $V_{IN}$ = 0 V or $V_{CC}$ | 10.0 | pF |

5. $C_{PD}$ 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 $I_{CC(OPR)}$ = $C_{PD}$ • $V_{CC}$ • $f_{in}$ + $I_{CC}$. $C_{PD}$ is used to determine the no−load dynamic power consumption: $P_D$ = $C_{PD}$ • $V_{CC}^2$ • $f_{in}$ + $I_{CC}$ • $V_{CC}$.
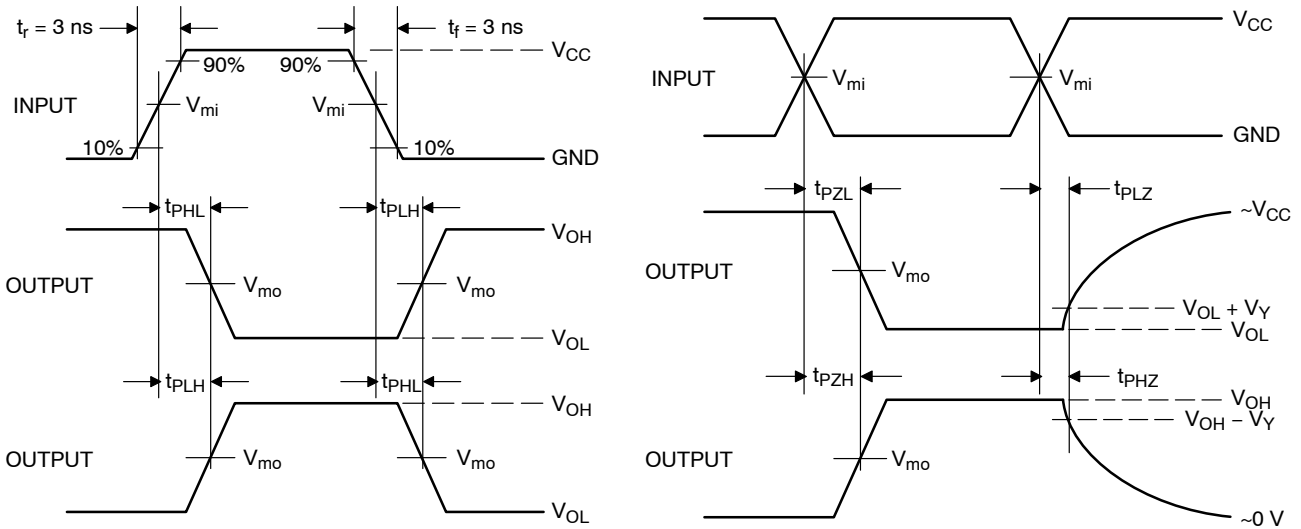
**Figure 3. Test Circuit**

| Test | Switch Position |
|------|-----------------|
| $t_{PLH}$ / $t_{PHL}$ | Open |
| $t_{PLZ}$ / $t_{PZL}$ | $2 \times V_{CC}$ |
| $t_{PHZ}$ / $t_{PZH}$ | GND |
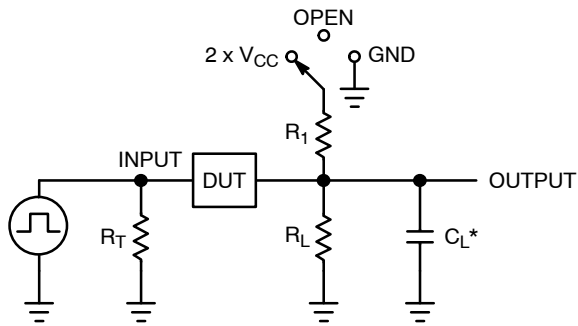
$C_L$ includes probe and jig capacitance
$R_T$ is $Z_{OUT}$ of pulse generator (typically 50 Ω)
f = 1 MHz



| $V_{CC}$, V | $V_{mi}$, V | $V_{mo}$, V | $V_Y$, V |
|-------------|-------------|-------------|----------|
| 0.9 | $V_{CC}$ / 2 | $V_{CC}$ / 2 | 0.1 |
| 1.1 to 1.3 | $V_{CC}$ / 2 | $V_{CC}$ / 2 | 0.1 |
| 1.4 to 1.6 | $V_{CC}$ / 2 | $V_{CC}$ / 2 | 0.1 |
| 1.65 to 1.95 | $V_{CC}$ / 2 | $V_{CC}$ / 2 | 0.15 |
| 2.3 to 2.7 | $V_{CC}$ / 2 | $V_{CC}$ / 2 | 0.15 |
| 3.0 to 3.6 | 1.5 | 1.5 | 0.3 |

**Figure 4. Switching Waveforms**

# NC7WV04

## ORDERING INFORMATION

| Device | Package | Marking | Pin 1 Orientation (See below) | Shipping† |
|---|---|---|---|---|
| NC7WV04P6X | SC−88 | V04 | Q4 | 3000 / Tape & Reel |
| NC7WV04L6X | MicroPak | BA | Q4 | 5000 / 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.

### Pin 1 Orientation in Tape and Reel
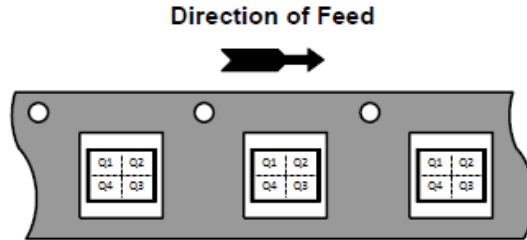


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## PACKAGE DIMENSIONS

**SIP6 1.45X1.0**
CASE 127EB
ISSUE O



TOP VIEW

PIN 1 IDENTIFIER

BOTTOM VIEW

RECOMMENED LAND PATTERN

DETAIL A
PIN 1 TERMINAL

0.075 X 45° CHAMFER
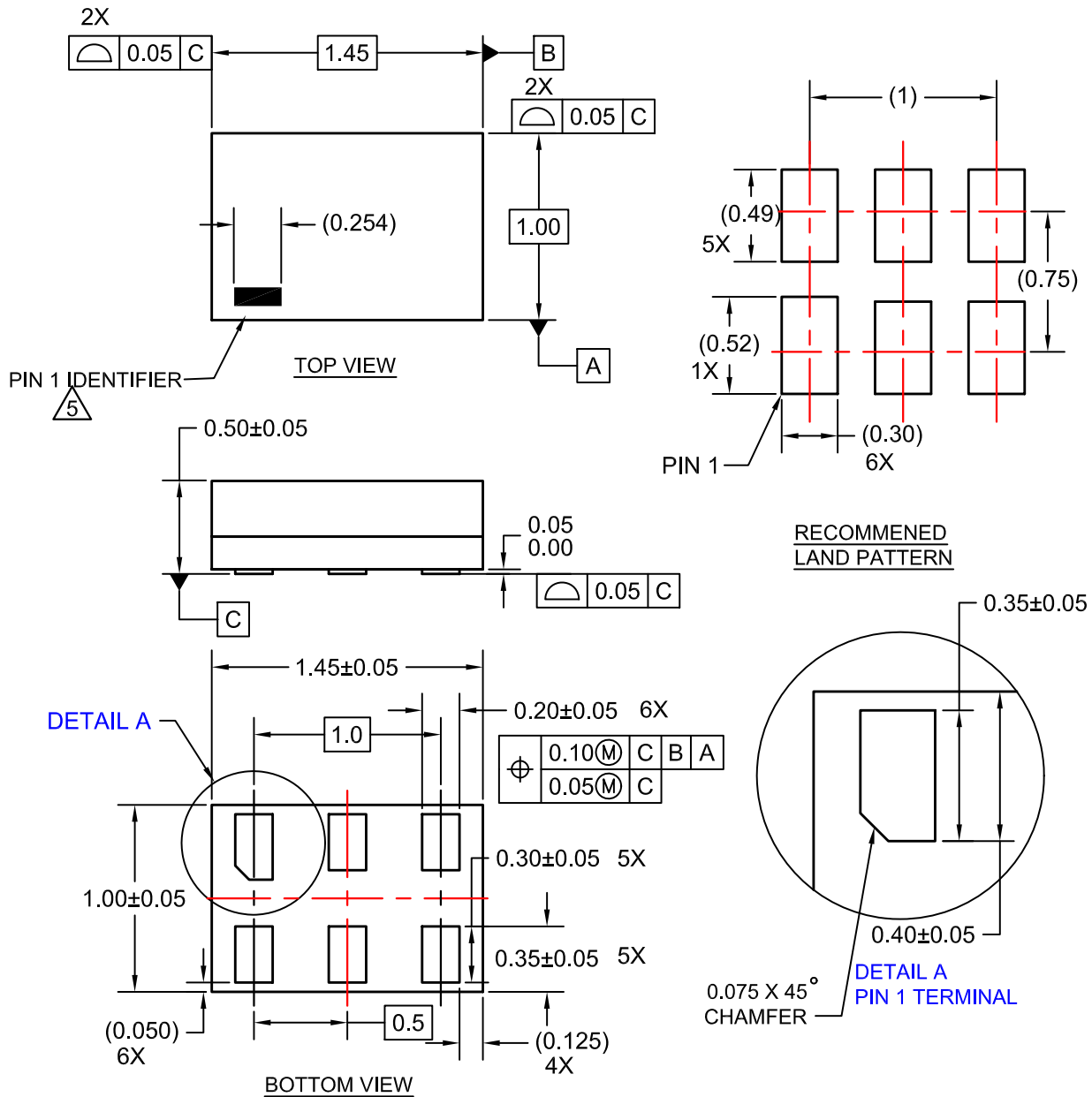
NOTES:

1. CONFORMS TO JEDEC STANDARD MO-252 VARIATION UAAD
2. DIMENSIONS ARE IN MILLIMETERS
3. DRAWING CONFORMS TO ASME Y14.5M-2009
4. PIN ONE IDENTIFIER IS 2X LENGTH OF ANY OTHER LINE IN THE MARK CODE LAYOUT.

# MECHANICAL CASE OUTLINE
## PACKAGE DIMENSIONS

**ON Semiconductor®**

**SC−88/SC70−6/SOT−363**
CASE 419B−02
ISSUE Y

1
**SCALE 2:1**

DATE 11 DEC 2012
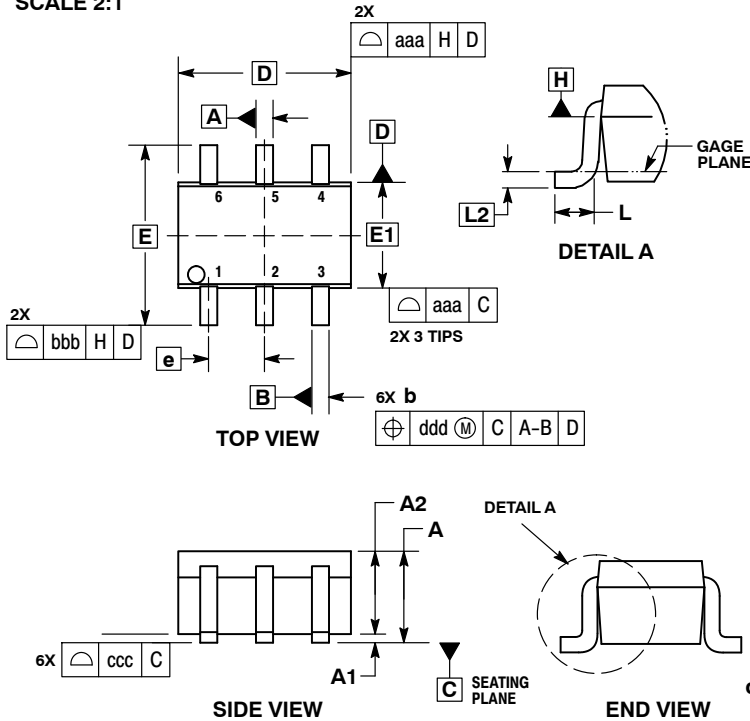
**NOTES:**
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 PER END.
4. DIMENSIONS D AND E1 AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY AND DATUM H.
5. DATUMS A AND B ARE DETERMINED AT DATUM H.
6. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.08 AND 0.15 FROM THE TIP.
7. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 TOTAL IN EXCESS OF DIMENSION b AT MAXIMUM MATERIAL CONDITION. THE DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OF THE FOOT.

**TOP VIEW**

**DETAIL A**

**SIDE VIEW**

**END VIEW**

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-----|-----|-----|-----|-----|-----|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | --- | --- | 1.10 | --- | --- | 0.043 |
| A1 | 0.00 | --- | 0.10 | 0.000 | --- | 0.004 |
| A2 | 0.70 | 0.90 | 1.00 | 0.027 | 0.035 | 0.039 |
| b | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |
| C | 0.08 | 0.15 | 0.22 | 0.003 | 0.006 | 0.009 |
| D | 1.80 | 2.00 | 2.20 | 0.070 | 0.078 | 0.086 |
| E | 2.00 | 2.10 | 2.20 | 0.078 | 0.082 | 0.086 |
| E1 | 1.15 | 1.25 | 1.35 | 0.045 | 0.049 | 0.053 |
| e | 0.65 BSC | | | 0.026 BSC | | |
| L | 0.26 | 0.36 | 0.46 | 0.010 | 0.014 | 0.018 |
| L2 | 0.15 BSC | | | 0.006 BSC | | |
| aaa | 0.15 | | | 0.006 | | |
| bbb | 0.30 | | | 0.012 | | |
| ccc | 0.10 | | | 0.004 | | |
| ddd | 0.10 | | | 0.004 | | |

## RECOMMENDED
## SOLDERING FOOTPRINT*

6X
0.30

6X
0.66

2.50

0.65
PITCH

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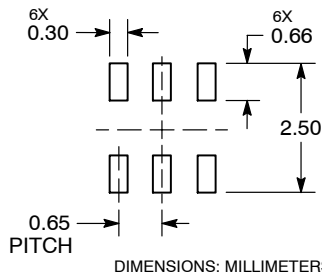
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

## GENERIC
## MARKING DIAGRAM*

6

XXXM■

1

XXX = Specific Device Code
M = Date Code*
■ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or position may vary depending upon manufacturing location.

*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.

## STYLES ON PAGE 2

| DOCUMENT NUMBER: | 98ASB42985B | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. | |
|---|---|---|---|
| DESCRIPTION: | SC−88/SC70−6/SOT−363 | | PAGE 1 OF 9 |

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# NC7WV04

## SC−88/SC70−6/SOT−363
CASE 419B−02
ISSUE Y

DATE 11 DEC 2012

STYLE 1:
PIN 1. EMITTER 2
2. BASE 2
3. COLLECTOR 1
4. EMITTER 1
5. BASE 1
6. COLLECTOR 2

STYLE 2:
CANCELLED

STYLE 3:
CANCELLED

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. COLLECTOR
4. EMITTER
5. BASE
6. ANODE

STYLE 5:
PIN 1. ANODE
2. ANODE
3. COLLECTOR
4. EMITTER
5. BASE
6. CATHODE

STYLE 6:
PIN 1. ANODE 2
2. N/C
3. CATHODE 1
4. ANODE 1
5. N/C
6. CATHODE 2

STYLE 7:
PIN 1. SOURCE 2
2. DRAIN 2
3. GATE 1
4. SOURCE 1
5. DRAIN 1
6. GATE 2

STYLE 8:
CANCELLED

STYLE 9:
PIN 1. EMITTER 2
2. EMITTER 1
3. COLLECTOR 1
4. BASE 1
5. BASE 2
6. COLLECTOR 2

STYLE 10:
PIN 1. SOURCE 2
2. SOURCE 1
3. GATE 1
4. DRAIN 1
5. DRAIN 2
6. GATE 2

STYLE 11:
PIN 1. CATHODE 2
2. CATHODE 2
3. ANODE 1
4. CATHODE 1
5. CATHODE 1
6. ANODE 2

STYLE 12:
PIN 1. ANODE 2
2. ANODE 2
3. CATHODE 1
4. ANODE 1
5. ANODE 1
6. CATHODE 2

STYLE 13:
PIN 1. ANODE
2. N/C
3. COLLECTOR
4. EMITTER
5. BASE
6. CATHODE

STYLE 14:
PIN 1. VREF
2. GND
3. GND
4. IOUT
5. VEN
6. VCC

STYLE 15:
PIN 1. ANODE 1
2. ANODE 2
3. ANODE 3
4. CATHODE 3
5. CATHODE 2
6. CATHODE 1

STYLE 16:
PIN 1. BASE 1
2. EMITTER 2
3. COLLECTOR 2
4. BASE 2
5. EMITTER 1
6. COLLECTOR 1

STYLE 17:
PIN 1. BASE 1
2. EMITTER 1
3. COLLECTOR 2
4. BASE 2
5. EMITTER 2
6. COLLECTOR 1

STYLE 18:
PIN 1. VIN1
2. VCC
3. VOUT2
4. VIN2
5. GND
6. VOUT1

STYLE 19:
PIN 1. I OUT
2. GND
3. GND
4. V CC
5. V EN
6. V REF

STYLE 20:
PIN 1. COLLECTOR
2. COLLECTOR
3. BASE
4. EMITTER
5. COLLECTOR
6. COLLECTOR

STYLE 21:
PIN 1. ANODE 1
2. N/C
3. ANODE 2
4. CATHODE 2
5. N/C
6. CATHODE 1

STYLE 22:
PIN 1. D1 (i)
2. GND
3. D2 (i)
4. D2 (c)
5. VBUS
6. D1 (c)

STYLE 23:
PIN 1. Vn
2. CH1
3. Vp
4. N/C
5. CH2
6. N/C

STYLE 24:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE

STYLE 25:
PIN 1. BASE 1
2. CATHODE
3. COLLECTOR 2
4. BASE 2
5. EMITTER
6. COLLECTOR 1

STYLE 26:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 27:
PIN 1. BASE 2
2. BASE 1
3. COLLECTOR 1
4. EMITTER 1
5. EMITTER 2
6. COLLECTOR 2

STYLE 28:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

STYLE 29:
PIN 1. ANODE
2. ANODE
3. COLLECTOR
4. EMITTER
5. BASE/ANODE
6. CATHODE

STYLE 30:
PIN 1. SOURCE 1
2. DRAIN 2
3. DRAIN 2
4. SOURCE 2
5. GATE 1
6. DRAIN 1

Note: Please refer to datasheet for style callout. If style type is not called out in the datasheet refer to the device datasheet pinout or pin assignment.

## PUBLICATION ORDERING INFORMATION

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