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# Noninverting 3-State Buffer

## MC74VHC1G126, MC74VHC1GT126

The MC74VHC1G126 / MC74VHC1GT126 is a single gate noninverting 3-state buffer in tiny footprint packages. The MC74VHC1G126 has CMOS-level input thresholds while the MC74VHC1GT126 has TTL-level input thresholds.

The internal circuit is composed of three stages, including a buffered 3-state output which provides high noise immunity and stable output.

The input structures provide protection when voltages up to 5.5 V are applied, regardless of the supply voltage. This allows the device to be used to interface 5 V circuits to 3 V circuits. The output structures also provide protection when  $V_{CC} = 0$  V and when the output voltage exceeds  $V_{CC}$ . These input and output structures help prevent device destruction caused by supply voltage – input/output voltage mismatch, battery backup, hot insertion, etc.

### Features

- Designed for 2.0 V to 5.5 V  $V_{CC}$  Operation
- 3.5 ns  $t_{PD}$  at 5 V (typ)
- Inputs/Outputs Over-Voltage Tolerant up to 5.5 V
- $I_{OFF}$  Supports Partial Power Down Protection
- Source/Sink 8 mA at 3.0 V
- Available in SC-88A, SC-74A, TSOP-5, SOT-553, SOT-953 and UDFN6 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

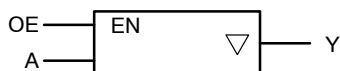


Figure 1. Logic Symbol



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### MARKING DIAGRAMS

	<b>SC-88A</b> DF SUFFIX CASE 419A	
	<b>SC-74A</b> DBV SUFFIX CASE 318BQ	
	<b>TSOP-5</b> DT SUFFIX CASE 483	
	<b>SOT-553</b> XV5 SUFFIX CASE 463B	
	<b>SOT-953</b> P5 SUFFIX CASE 527AE	
	<b>UDFN6</b> 1.45 x 1.0 CASE 517AQ	
	<b>UDFN6</b> 1.2 x 1.0 CASE 517AA	
	<b>UDFN6</b> 1.0 x 1.0 CASE 517BX	

XX = Specific Device Code  
M = Date Code\*  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

See detailed ordering, marking and shipping information in the package dimensions section on page 8 of this data sheet.

MC74VHC1G126, MC74VHC1GT126

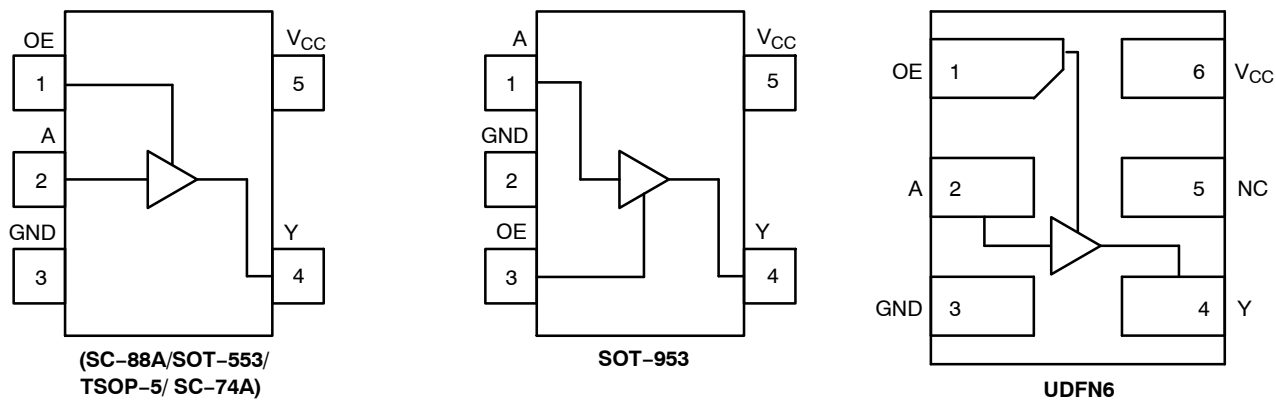


Figure 2. Pinout (Top View)

**PIN ASSIGNMENT**  
(SC-88A/SOT-553/ TSOP-5/SC-74A)

Pin	Function
1	OE
2	A
3	GND
4	Y
5	V <sub>CC</sub>

**PIN ASSIGNMENT (SOT-953)**

Pin	Function
1	A
2	GND
3	OE
4	Y
5	V <sub>CC</sub>

**PIN ASSIGNMENT (UDFN)**

Pin	Function
1	OE
2	A
3	GND
4	Y
5	NC
6	V <sub>CC</sub>

**FUNCTION TABLE**

Input		Output
OE	A	Y
H	L	L
H	H	H
L	X	Z

X = Don't Care

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## MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
$V_{CC}$	DC Supply Voltage TSOP-5, SC-88A (NLV) SC-74A, SC-88A, UDFN6, SOT-553, SOT-953	-0.5 to +7.0 -0.5 to +6.5	V
$V_{IN}$	DC Input Voltage TSOP-5, SC-88A (NLV) SC-74A, SC-88A, UDFN6, SOT-553, SOT-953	-0.5 to +7.0 -0.5 to +6.5	V
$V_{OUT}$	DC Output Voltage TSOP-5, SC-88A (NLV) Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode ( $V_{CC} = 0$ V)	-0.5 to $V_{CC} + 0.5$ -0.5 to +7.0 -0.5 to +7.0	V
	DC Output Voltage SC-74A, SC-88A, UDFN6, SOT-553, SOT-953 Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode ( $V_{CC} = 0$ V)	-0.5 to $V_{CC} + 0.5$ -0.5 to +6.5 -0.5 to +6.5	V
$I_{IK}$	DC Input Diode Current $V_{IN} < GND$	-20	mA
$I_{OK}$	DC Output Diode Current $V_{OUT} < GND$	-20	mA
$I_{OUT}$	DC Output Source/Sink Current	$\pm 25$	mA
$I_{CC}$ or $I_{GND}$	DC Supply Current per Supply Pin or Ground Pin	$\pm 50$	mA
$T_{STG}$	Storage Temperature Range	-65 to +150	°C
$T_L$	Lead Temperature, 1 mm from Case for 10 secs	260	°C
$T_J$	Junction Temperature Under Bias	+150	°C
$\theta_{JA}$	Thermal Resistance (Note 2) SC-88A SC-74A SOT-553 SOT-953 UDFN6	377 320 324 254 154	°C/W
$P_D$	Power Dissipation in Still Air SC-88A SC-74A SOT-553 SOT-953 UDFN6	332 390 386 491 812	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 Charged Device Model	2000 1000	V
$I_{Latchup}$	Latchup Performance (Note 4)	$\pm 100$	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.

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## RECOMMENDED OPERATING CONDITIONS

Symbol	Characteristics	Min	Max	Unit
$V_{CC}$	Positive DC Supply Voltage	2.0	5.5	V
$V_{IN}$	DC Input Voltage	0	5.5	V
$V_{OUT}$	DC Output Voltage TSOP-5, SC-88A (NLV)	0	$V_{CC}$	V
	DC Output Voltage SC-74A, SC-88A, UDFN6, SOT-553, SOT-953			
	Active-Mode (High or Low State)	0	$V_{CC}$	
	Tri-State Mode (Note 1)	0	5.5	
	Power-Down Mode ( $V_{CC} = 0$ V)	0	5.5	
$T_A$	Operating Temperature Range	-55	+125	°C
$t_r, t_f$	Input Rise and Fall Time TSOP-5, SC-88A (NLV)			ns/V
		$V_{CC} = 3.0$ V to 3.6 V	100	
		$V_{CC} = 4.5$ V to 5.5 V	20	
	Input Rise and Fall Time SC-74A, SC-88A, UDFN6, SOT-553, SOT-953			
		$V_{CC} = 2.0$ V	20	
		$V_{CC} = 2.3$ V to 2.7 V	20	
		$V_{CC} = 3.0$ V to 3.6 V	10	
		$V_{CC} = 4.5$ V to 5.5 V	5	

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 (MC74VHC1G126)

Symbol	Parameter	Test Conditions	$V_{CC}$ (V)	$T_A = 25^\circ\text{C}$			$-40^\circ\text{C} \leq T_A \leq 85^\circ\text{C}$		$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		Unit
				Min	Typ	Max	Min	Max	Min	Max	
$V_{IH}$	High-Level Input Voltage		2.0	1.5	–	–	1.5	–	1.5	–	V
			3.0	2.1	–	–	2.1	–	2.1	–	
			4.5	3.15	–	–	3.15	–	3.15	–	
			5.5	3.85	–	–	3.85	–	3.85	–	
$V_{IL}$	Low-Level Input Voltage		2.0	–	–	0.5	–	0.5	–	0.5	V
			3.0	–	–	0.9	–	0.9	–	0.9	
			4.5	–	–	1.35	–	1.35	–	1.35	
			5.5	–	–	1.65	–	1.65	–	1.65	
$V_{OH}$	High-Level Output Voltage	$V_{IN} = V_{IH}$ or $V_{IL}$	2.0	1.9	2.0	–	1.9	–	1.9	–	V
		$I_{OH} = -50$ $\mu\text{A}$	3.0	2.9	3.0	–	2.9	–	2.9	–	
		$I_{OH} = -50$ $\mu\text{A}$	4.5	4.4	4.5	–	4.4	–	4.4	–	
		$I_{OH} = -50$ $\mu\text{A}$	3.0	2.58	–	–	2.48	–	2.34	–	
		$I_{OH} = -4$ mA	4.5	3.94	–	–	3.80	–	3.66	–	
		$I_{OH} = -8$ mA									
$V_{OL}$	Low-Level Output Voltage	$V_{IN} = V_{IH}$ or $V_{IL}$	2.0	–	0.0	0.1	–	0.1	–	0.1	V
		$I_{OL} = 50$ $\mu\text{A}$	3.0	–	0.0	0.1	–	0.1	–	0.1	
		$I_{OL} = 50$ $\mu\text{A}$	4.5	–	0.0	0.1	–	0.1	–	0.1	
		$I_{OL} = 50$ $\mu\text{A}$	3.0	–	–	0.36	–	0.44	–	0.52	
		$I_{OL} = 4$ mA	4.5	–	–	0.36	–	0.44	–	0.52	
		$I_{OL} = 8$ mA									
$I_{IN}$	Input Leakage Current	$V_{IN} = 5.5$ V or GND	2.0 to 5.5	–	–	$\pm 0.1$	–	$\pm 1.0$	–	$\pm 1.0$	$\mu\text{A}$
$I_{OZ}$	3-State Output Leakage Current	$V_{OUT} = 0$ V to 5.5 V	5.5	–	–	$\pm 0.25$	–	$\pm 2.5$	–	$\pm 2.5$	$\mu\text{A}$
$I_{OFF}$	Power Off Leakage Current	$V_{IN} = 5.5$ V or $V_{OUT} = 5.5$ V	0	–	–	1.0	–	10	–	10	$\mu\text{A}$
$I_{CC}$	Quiescent Supply Current	$V_{IN} = V_{CC}$ or GND	5.5	–	–	1.0	–	20	–	40	$\mu\text{A}$

# MC74VHC1G126, MC74VHC1GT126

## DC ELECTRICAL CHARACTERISTICS (MC74VHC1GT126)

Symbol	Parameter	Test Conditions	V <sub>CC</sub> (V)	T <sub>A</sub> = 25°C			-40°C ≤ T <sub>A</sub> ≤ 85°C		-55°C ≤ T <sub>A</sub> ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V <sub>IH</sub>	High-Level Input Voltage		2.0	1.0	–	–	1.0	–	1.0	–	V
			3.0	1.4	–	–	1.4	–	1.4	–	
			4.5	2.0	–	–	2.0	–	2.0	–	
			5.5	2.0	–	–	2.0	–	2.0	–	
V <sub>IL</sub>	Low-Level Input Voltage		2.0	–	–	0.28	–	0.28	–	0.28	V
			3.0	–	–	0.45	–	0.45	–	0.45	
			4.5	–	–	0.8	–	0.8	–	0.8	
			5.5	–	–	0.8	–	0.8	–	0.8	
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> = –50 μA I <sub>OH</sub> = –50 μA I <sub>OH</sub> = –50 μA I <sub>OH</sub> = –4 mA I <sub>OH</sub> = –8 mA	2.0	1.9	2.0	–	1.9	–	1.9	–	V
			3.0	2.9	3.0	–	2.9	–	2.9	–	
			4.5	4.4	4.5	–	4.4	–	4.4	–	
			3.0	2.58	–	–	2.48	–	2.34	–	
			4.5	3.94	–	–	3.80	–	3.66	–	
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> = 50 μA I <sub>OL</sub> = 50 μA I <sub>OL</sub> = 50 μA I <sub>OL</sub> = 4 mA I <sub>OL</sub> = 8 mA	2.0	–	0.0	0.1	–	0.1	–	0.1	V
			3.0	–	0.0	0.1	–	0.1	–	0.1	
			4.5	–	0.0	0.1	–	0.1	–	0.1	
			3.0	–	–	0.36	–	0.44	–	0.52	
			4.5	–	–	0.36	–	0.44	–	0.52	
I <sub>IN</sub>	Input Leakage Current	V <sub>IN</sub> = 5.5 V or GND	2.0 to 5.5	–	–	±0.1	–	±1.0	–	±1.0	μA
I <sub>OZ</sub>	3-State Output Leakage Current	V <sub>OUT</sub> = 0 V to 5.5 V	5.5	–	–	±0.25	–	±2.5	–	±2.5	μA
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	–	10	μA
I <sub>CC</sub>	Quiescent Supply Current	V <sub>IN</sub> = V <sub>CC</sub> or GND	5.5	–	–	1.0	–	20	–	40	μA
I <sub>CCT</sub>	Increase in Quiescent Supply Current per Input Pin	One Input: V <sub>IN</sub> = 3.4 V; Other Input at V <sub>CC</sub> or GND	5.5	–	–	1.35	–	1.5	–	1.65	mA

# MC74VHC1G126, MC74VHC1GT126

## AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V <sub>CC</sub> (V)	T <sub>A</sub> = 25°C			-40°C ≤ T <sub>A</sub> ≤ 85°C		-55°C ≤ T <sub>A</sub> ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t <sub>PLH</sub> , t <sub>PHL</sub>	Propagation Delay, A to Y (Figures 3 and 4)	C <sub>L</sub> = 15 pF	3.0 to 3.6	–	4.5	8.0	–	9.5	–	12.0	ns
		C <sub>L</sub> = 50 pF		–	6.4	11.5	–	13.0	–	16.0	
		C <sub>L</sub> = 15 pF	4.5 to 5.5	–	3.5	5.5	–	6.5	–	8.5	
		C <sub>L</sub> = 50 pF		–	4.5	7.5	–	8.5	–	10.5	
t <sub>PZL</sub> , t <sub>PZH</sub>	Output Enable Time, OE to Y (Figures 3 and 4)	C <sub>L</sub> = 15 pF	3.0 to 3.6	–	4.5	8.0	–	9.5	–	11.5	ns
		C <sub>L</sub> = 50 pF		–	6.4	11.5	–	13.0	–	15.0	
		C <sub>L</sub> = 15 pF	4.5 to 5.5	–	3.5	5.1	–	6.0	–	8.5	
		C <sub>L</sub> = 50 pF		–	4.5	7.1	–	8.0	–	10.5	
t <sub>PLZ</sub> , t <sub>PHZ</sub>	Output Disable Time, OE to Y (Figures 3 and 4)	C <sub>L</sub> = 15 pF	3.0 to 3.6	–	6.5	9.7	–	11.5	–	14.5	ns
		C <sub>L</sub> = 50 pF		–	8.0	13.2	–	15.0	–	18.0	
		C <sub>L</sub> = 15 pF	4.5 to 5.5	–	4.8	6.8	–	8.0	–	10.0	
		C <sub>L</sub> = 50 pF		–	7.0	8.8	–	10.0	–	12.0	
C <sub>IN</sub>	Input Capacitance			–	4.0	10	–	10	–	10	pF
C <sub>OUT</sub>	Output Capacitance	Output in High Impedance State		–	6.0	–	–	–	–	–	pF

C <sub>PD</sub>	Power Dissipation Capacitance (Note 5)	Typical @ 25°C, V <sub>CC</sub> = 5.0 V	pF
		8.0	

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>.

# MC74VHC1G126, MC74VHC1GT126

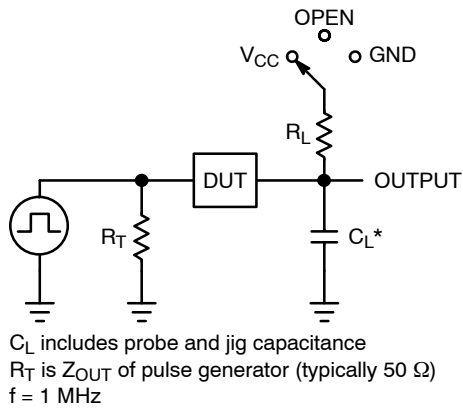


Figure 3. Test Circuit

Test	Switch Position	$C_L$ , pF	$R_L$ , $\Omega$
$t_{PLH} / t_{PHL}$	Open	See AC Characteristics Table	X
$t_{PLZ} / t_{PZL}$	$V_{CC}$		1 k
$t_{PHZ} / t_{PZH}$	GND		1 k

X = Don't Care

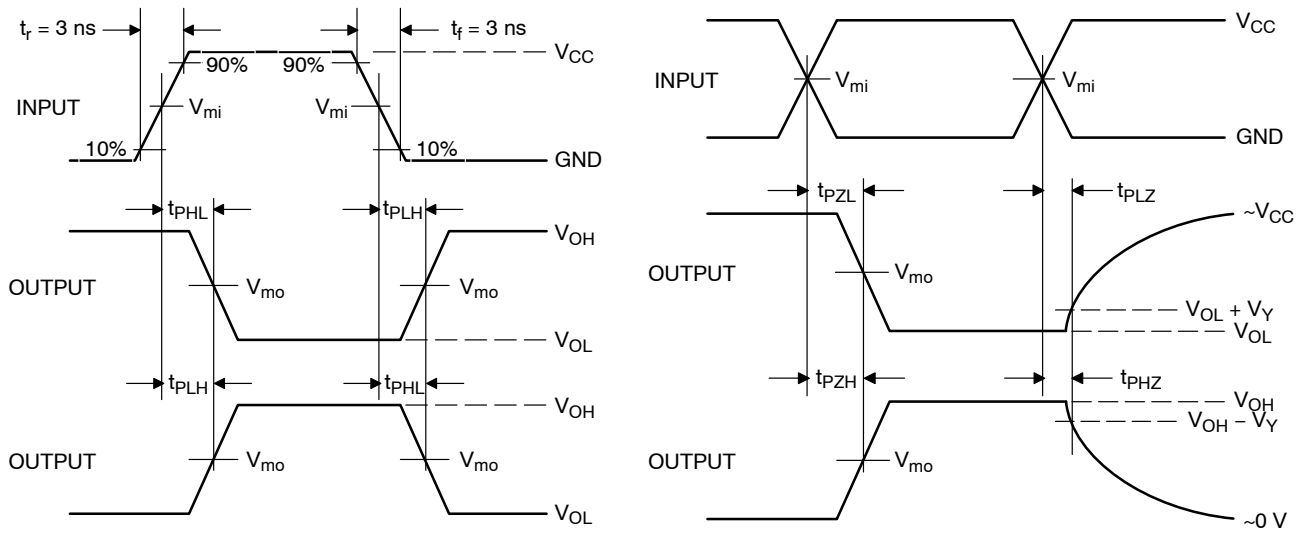


Figure 4. Switching Waveforms

$V_{CC}$ , V	$V_{mi}$ , V	$V_{mo}$ , V		$V_Y$ , V
		$t_{PLH}, t_{PHL}$	$t_{PLZ}, t_{PZL}, t_{PZH}, t_{PHZ}$	
3.0 to 3.6	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	0.3
4.5 to 5.5	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	0.3



# MC74VHC1G126, MC74VHC1GT126

## ORDERING INFORMATION

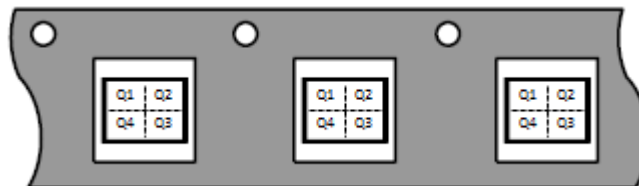
Device	Packages	Specific Device Code	Pin 1 Orientation (See below)	Shipping <sup>†</sup>
M74VHC1G126DFT1G	SC-88A	W2	Q2	3000 / Tape & Reel
M74VHC1G126DFT2G	SC-88A	W2	Q4	3000 / Tape & Reel
NLVVHC1G126DFT1G*	SC-88A	W2	Q2	3000 / Tape & Reel
NLVVHC1G126DFT2G*	SC-88A	W2	Q4	3000 / Tape & Reel
M74VHC1GT126DF1G	SC-88A	W3	Q2	3000 / Tape & Reel
M74VHC1GT126DF2G	SC-88A	W3	Q4	3000 / Tape & Reel
NLVVHC1GT126DF2G*	SC-88A	W3	Q4	3000 / Tape & Reel
NLVVHC1GT126DF1G*	SC-88A	W3	Q2	3000 / Tape & Reel
MC74VHC1G126DBVT1G	SC-74A	W2	Q4	3000 / Tape & Reel
MC74VHC1GT126DBVT1G	SC-74A	W3	Q4	3000 / Tape & Reel
M74VHC1G126DTT1G	TSOP-5	W2	Q4	3000 / Tape & Reel
M74VHC1GT126DT1G	TSOP-5	W3	Q4	3000 / Tape & Reel
NLVVHC1GT126DT1G*	TSOP-5	W3R	Q4	3000 / Tape & Reel
MC74VHC1G126XV5T2G (In Development)	SOT-553	TBD	Q4	4000 / Tape & Reel
MC74VHC1GT126XV5T2G (In Development)	SOT-553	TBD	Q4	4000 / Tape & Reel
MC74VHC1G126P5T5G	SOT-953	J	Q2	8000 / Tape & Reel
MC74VHC1GT126P5T5G	SOT-953	R	Q2	8000 / Tape & Reel
MC74VHC1G126MU1TCG (In Development)	UDFN6, 1.45 x 1.0, 0.5P	TBD	Q4	3000 / Tape & Reel
MC74VHC1GT126MU1TCG	UDFN6, 1.45 x 1.0, 0.5P	T (Rotated 270° CW)	Q4	3000 / Tape & Reel
MC74VHC1GT126MU2TCG	UDFN6, 1.2 x 1.0, 0.4P	9	Q4	3000 / Tape & Reel
MC74VHC1G126MU3TCG (In Development)	UDFN6, 1.0 x 1.0, 0.35P	TBD	Q4	3000 / Tape & Reel
MC74VHC1GT126MU3TCG	UDFN6, 1.0 x 1.0, 0.35P	R (Rotated 180° CW)	Q4	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.

## Pin 1 Orientation in Tape and Reel

Direction of Feed



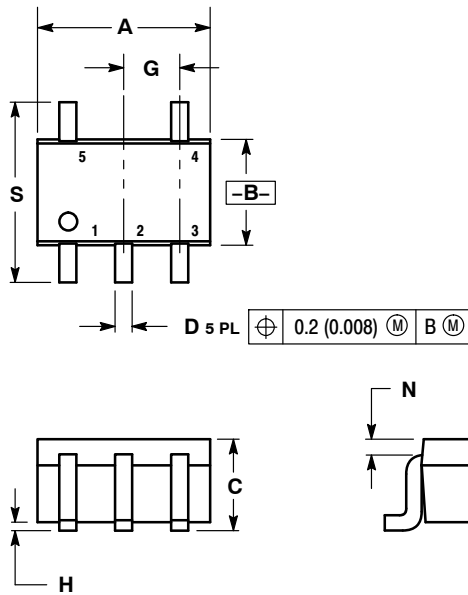
# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

SC-88A (SC-70-5/SOT-353)

CASE 419A-02

ISSUE L

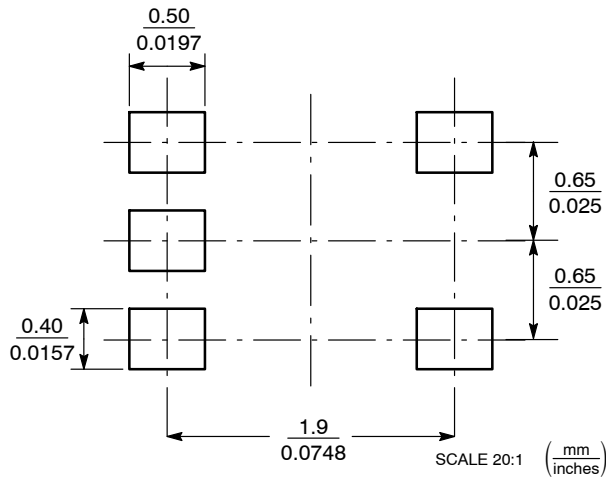


### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419A-01 OBSOLETE. NEW STANDARD 419A-02.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

## SOLDER FOOTPRINT\*

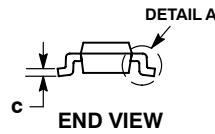
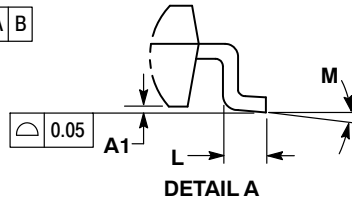
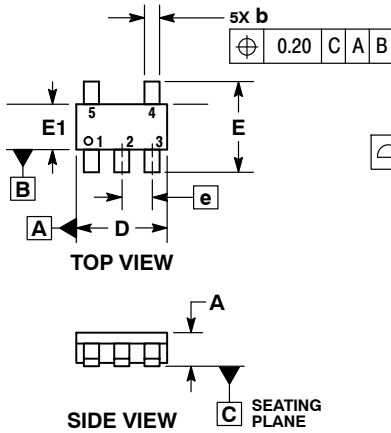


\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

### SC-74A CASE 318BQ ISSUE B

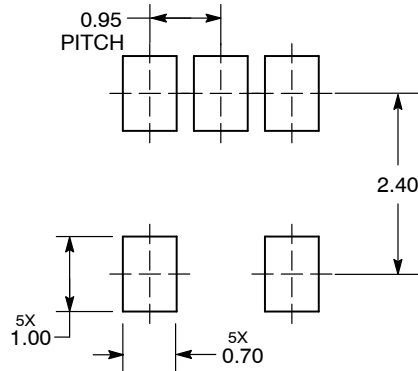


#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.15 PER SIDE.

DIM	MILLIMETERS	
	MIN	MAX
A	0.90	1.10
A1	0.01	0.10
b	0.25	0.50
c	0.10	0.26
D	2.85	3.15
E	2.50	3.00
E1	1.35	1.65
e	0.95 BSC	
L	0.20	0.60
M	0°	10°

### RECOMMENDED SOLDERING FOOTPRINT\*



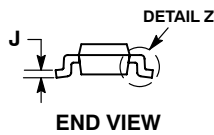
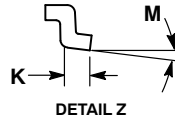
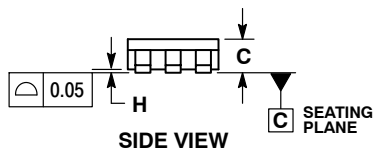
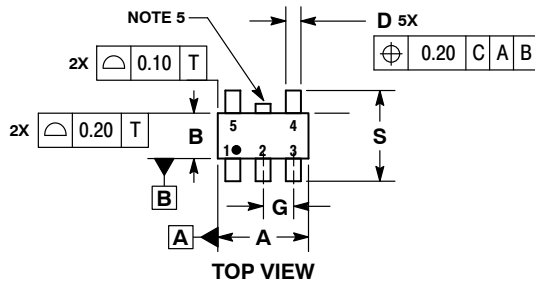
DIMENSIONS: MILLIMETERS

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

# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

### TSOP-5 CASE 483-02 ISSUE M

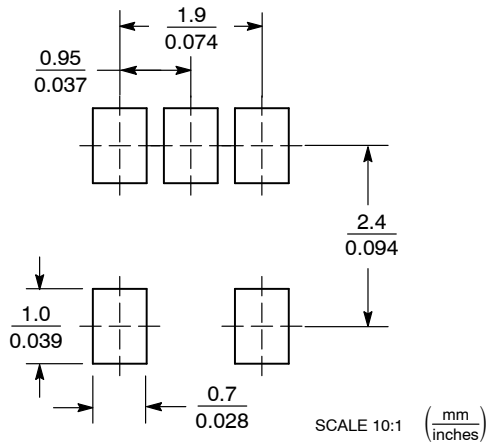


#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.15 PER SIDE. DIMENSION A.
5. OPTIONAL CONSTRUCTION: AN ADDITIONAL TRIMMED LEAD IS ALLOWED IN THIS LOCATION. TRIMMED LEAD NOT TO EXTEND MORE THAN 0.2 FROM BODY.

MILLIMETERS		
DIM	MIN	MAX
A	2.85	3.15
B	1.35	1.65
C	0.90	1.10
D	0.25	0.50
G	0.95 BSC	
H	0.01	0.10
J	0.10	0.26
K	0.20	0.60
M	0°	10°
S	2.50	3.00

#### SOLDERING FOOTPRINT\*

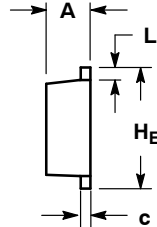
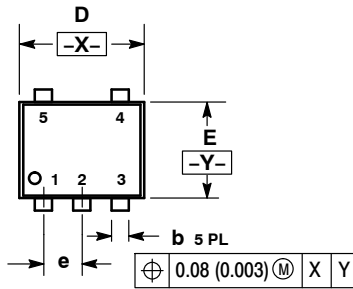


\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

### SOT-553, 5 LEAD CASE 463B ISSUE C

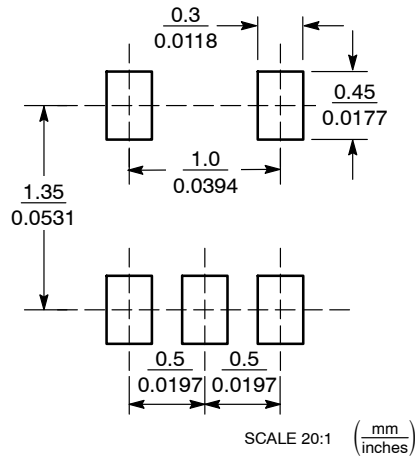


#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.55	0.60	0.020	0.022	0.024
b	0.17	0.22	0.27	0.007	0.009	0.011
c	0.08	0.13	0.18	0.003	0.005	0.007
D	1.55	1.60	1.65	0.061	0.063	0.065
E	1.15	1.20	1.25	0.045	0.047	0.049
e	0.50 BSC			0.020 BSC		
L	0.10	0.20	0.30	0.004	0.008	0.012
H <sub>E</sub>	1.55	1.60	1.65	0.061	0.063	0.065

### SOLDERING FOOTPRINT\*

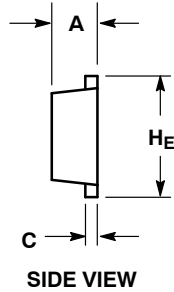
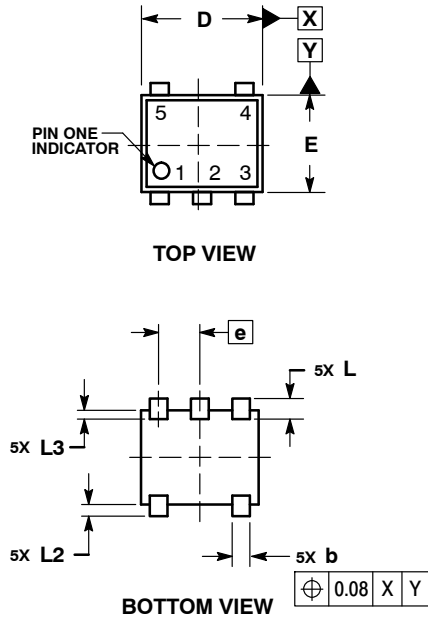


\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

**SOT-953**  
CASE 527AE  
ISSUE E

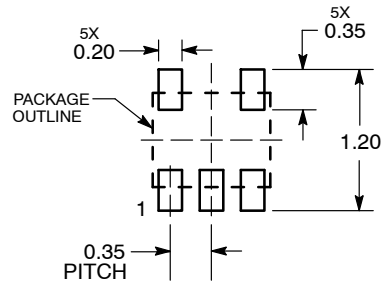


### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.34	0.37	0.40
b	0.10	0.15	0.20
C	0.07	0.12	0.17
D	0.95	1.00	1.05
E	0.75	0.80	0.85
e	0.35 BSC		
H <sub>E</sub>	0.95	1.00	1.05
L	0.175 REF		
L2	0.05	0.10	0.15
L3	---	---	0.15

### SOLDERING FOOTPRINT\*



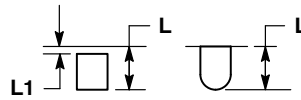
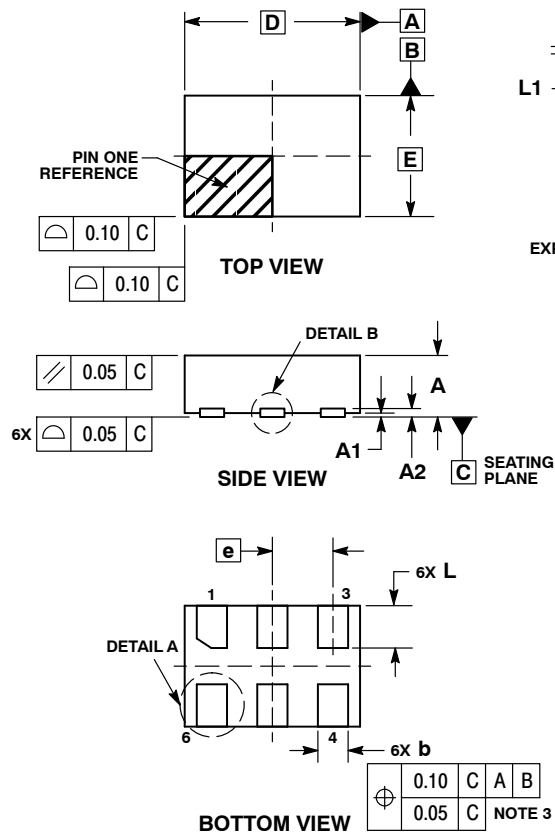
DIMENSIONS: MILLIMETERS

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

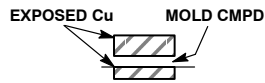
# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

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



**DETAIL A**  
OPTIONAL  
CONSTRUCTIONS



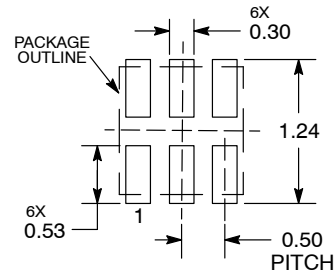
**DETAIL B**  
OPTIONAL  
CONSTRUCTIONS

### 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



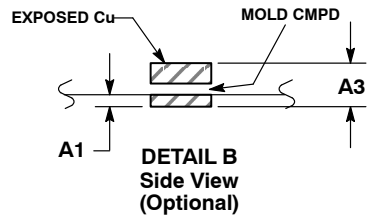
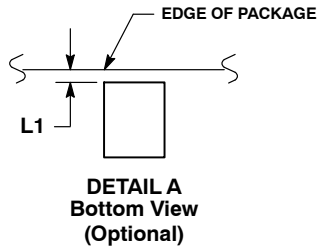
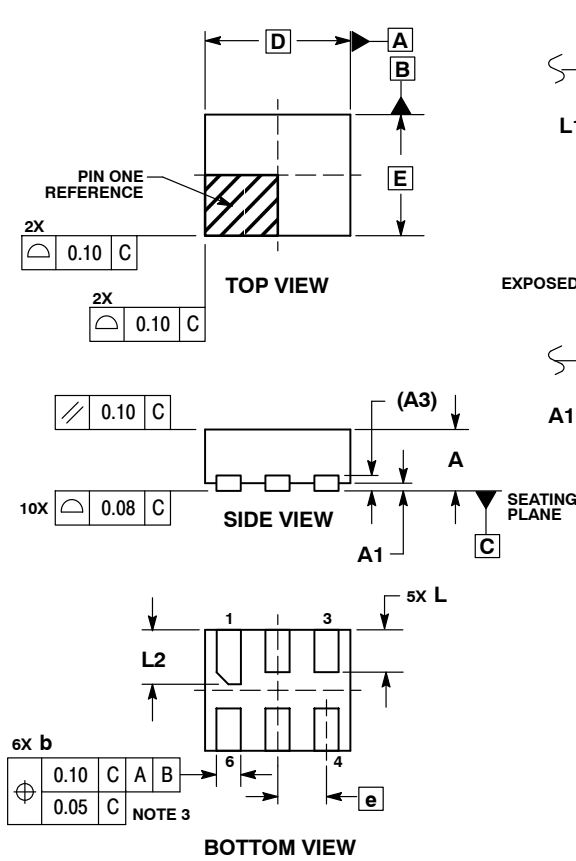
DIMENSIONS: MILLIMETERS

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

# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

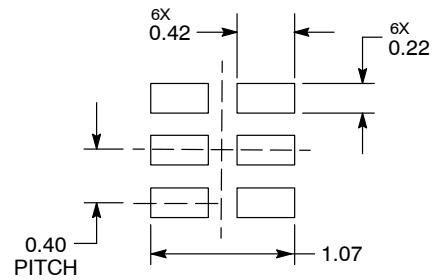
UDFN6, 1.2x1.0, 0.4P  
CASE 517AA-01  
ISSUE D



- 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

### MOUNTING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

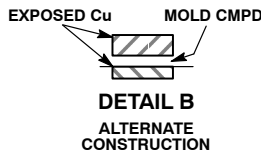
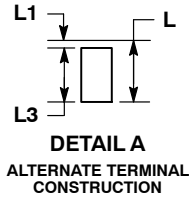
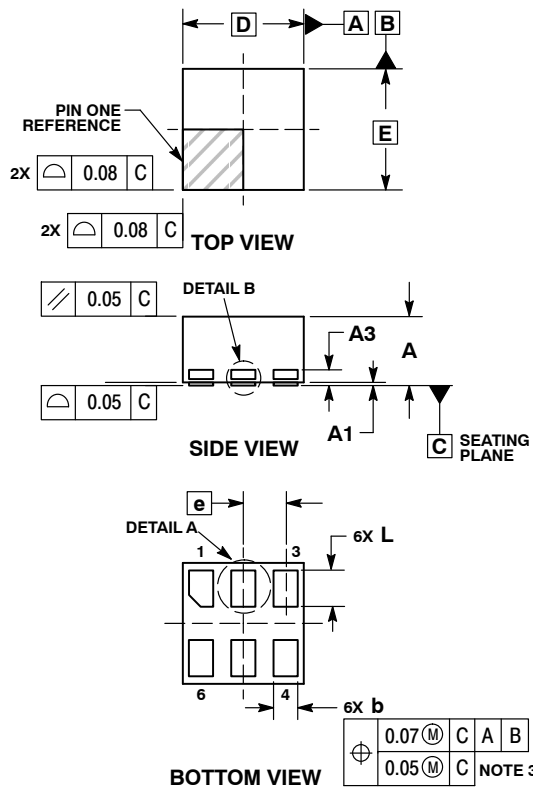
\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



# MC74VHC1G126, MC74VHC1GT126

## PACKAGE DIMENSIONS

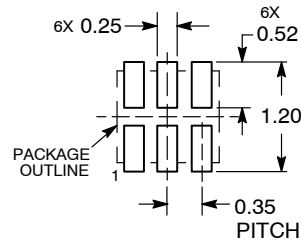
UDFN6, 1x1, 0.35P  
CASE 517BX  
ISSUE O



- 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.

DIM	MILLIMETERS	
	MIN	MAX
A	0.50	0.65
A1	0.00	0.05
A3	0.13	REF
b	0.17	0.23
D	1.00	BSC
E	1.00	BSC
e	0.35	
L	0.20	0.40
L1	---	0.15
L3	0.26	0.33

### RECOMMENDED SOLDERING FOOTPRINT\*



DIMENSION: 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.

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