

Single 2-Input NOR Gate

MC74VHC1G02, MC74VHC1GT02

The MC74VHC1G02 / MC74VHC1GT02 is a an advanced high speed CMOS 2-input NOR gate in tiny footprint packages. The MC74VHC1G02 has CMOS-level input thresholds while the MC74VHC1GT02 has TTL level thresholds.

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. Some 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
- Q Suffix 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

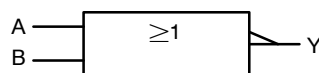
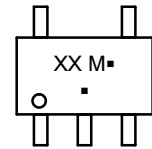


Figure 1. Logic Symbol

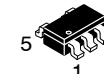
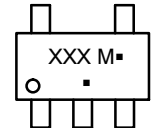
MARKING DIAGRAMS



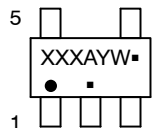
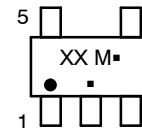
SC-88A
DF SUFFIX
CASE 419A



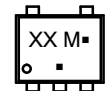
SC-74A
DBV SUFFIX
CASE 318BQ



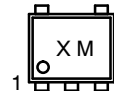
TSOP-5
DT SUFFIX
CASE 483



SOT-553
XV5 SUFFIX
CASE 463B



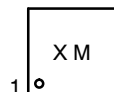
SOT-953
P5 SUFFIX
CASE 527AE



UDFN6
1.45 x 1.0
CASE 517AQ



UDFN6
1.0 x 1.0
CASE 517BX



XX = Specific Device Code
M = Date Code*
A = Assembly Location
Y = Year
W = Work Week
• = Pb-Free Package

(Note: Microdot may be in either location)

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

ORDERING INFORMATION

See detailed ordering, marking and shipping information on page 7 of this data sheet.

MC74VHC1G02, MC74VHC1GT02

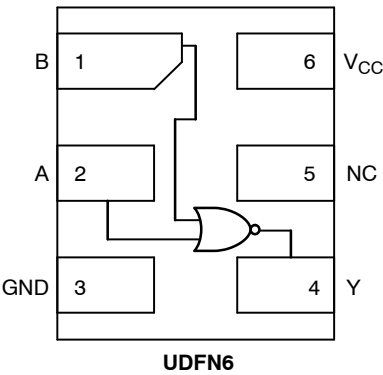
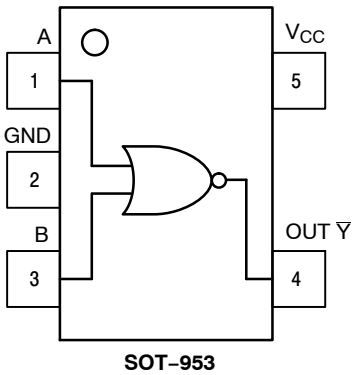
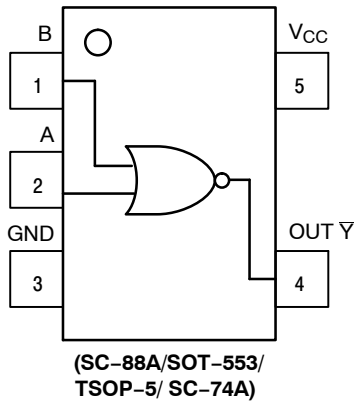


Figure 2. Pinout (Top View)

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

Pin	Function
1	B
2	A
3	GND
4	Y
5	V _{CC}

PIN ASSIGNMENT (SOT-953)

Pin	Function
1	A
2	GND
3	B
4	Y
5	V _{CC}

PIN ASSIGNMENT (UDFN)

Pin	Function
1	B
2	A
3	GND
4	Y
5	NC
6	V _{CC}

FUNCTION TABLE

Input		Output
A	B	Y
L	L	H
L	H	L
H	L	L
H	H	L

MC74VHC1G02, MC74VHC1GT02

MAXIMUM RATINGS

Symbol	Characteristics	Value	Unit
V_{CC}	DC Supply Voltage	-0.5 to +6.5	V
V_{IN}	DC Input Voltage	-0.5 to +6.5	V
V_{OUT}	DC Output Voltage 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	± 25	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 secs	260	°C
T_J	Junction Temperature Under Bias	+150	°C
θ_{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)	± 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.

MC74VHC1G02, MC74VHC1GT02

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 Active-Mode (High or Low State) Tri-State Mode (Note 1) Power-Down Mode ($V_{CC} = 0$ V)	0 0 0	V_{CC} 5.5 5.5	V
T_A	Operating Temperature Range	-55	+125	°C
t_r, t_f	Input Rise and Fall Time $V_{CC} = 2.0$ V $V_{CC} = 2.3$ V to 2.7 V $V_{CC} = 3.0$ V to 3.6 V $V_{CC} = 4.5$ V to 5.5 V	0 0 0 0	20 20 10 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 (MC74VHC1G02)

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
		$I_{OH} = -50\text{ }\mu\text{A}$	3.0	2.9	3.0	–	2.9	–	2.9	–	
		$I_{OH} = -50\text{ }\mu\text{A}$	4.5	4.4	4.5	–	4.4	–	4.4	–	
		$I_{OH} = -4\text{ mA}$	3.0	2.58	–	–	2.48	–	2.34	–	
		$I_{OH} = -8\text{ mA}$	4.5	3.94	–	–	3.80	–	3.66	–	
V_{OL}	Low-Level Output Voltage	$V_{IN} = V_{IH}$ or V_{IL}	2.0	–	0.0	0.1	–	0.1	–	0.1	V
		$I_{OL} = 50\text{ }\mu\text{A}$	3.0	–	0.0	0.1	–	0.1	–	0.1	
		$I_{OL} = 50\text{ }\mu\text{A}$	4.5	–	0.0	0.1	–	0.1	–	0.1	
		$I_{OL} = 4\text{ mA}$	3.0	–	–	0.36	–	0.44	–	0.52	
		$I_{OL} = 8\text{ mA}$	4.5	–	–	0.36	–	0.44	–	0.52	
I_{IN}	Input Leakage Current	$V_{IN} = 5.5\text{ V}$ or GND	2.0 to 5.5	–	–	± 0.1	–	± 1.0	–	± 1.0	μA
I_{OFF}	Power Off Leakage Current	$V_{IN} = 5.5\text{ V}$ or $V_{OUT} = 5.5\text{ V}$	0.0	–	–	1.0	–	10	–	10	μA
I_{CC}	Quiescent Supply Current	$V_{IN} = V_{CC}$ or GND	5.5	–	–	1.0	–	20	–	40	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.

MC74VHC1G02, MC74VHC1GT02

DC ELECTRICAL CHARACTERISTICS (MC74VHC1GT02)

Symbol	Parameter	Test Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
V _{IH}	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 _{IL}	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 _{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 μA	3.0	2.9	3.0	–	2.9	–	2.9	–	
		I _{OH} = –50 μA	4.5	4.4	4.5	–	4.4	–	4.4	–	
		I _{OH} = –4 mA	3.0	2.58	–	–	2.48	–	2.34	–	
		I _{OH} = –8 mA	4.5	3.94	–	–	3.80	–	3.66	–	
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 μA	3.0	–	0.0	0.1	–	0.1	–	0.1	
		I _{OL} = 50 μA	4.5	–	0.0	0.1	–	0.1	–	0.1	
		I _{OL} = 4 mA	3.0	–	–	0.36	–	0.44	–	0.52	
		I _{OL} = 8 mA	4.5	–	–	0.36	–	0.44	–	0.52	
I _{IN}	Input Leakage Current	V _{IN} = 5.5 V or GND	2.0 to 5.5	–	–	±0.1	–	±1.0	–	±1.0	μA
I _{OFF}	Power Off Leakage Current	V _{IN} = 5.5 V or V _{OUT} = 5.5 V	0	–	–	1.0	–	10	–	10	μA
I _{CC}	Quiescent Supply Current	V _{IN} = V _{CC} or GND	5.5	–	–	1.0	–	20	–	40	μA
I _{CCT}	Increase in Quiescent Supply Current per Input Pin	One Input: V _{IN} = 3.4 V; Other Input at V _{CC} or GND	5.5	–	–	1.35	–	1.5	–	1.65	mA

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	T _A = 25°C			-40°C ≤ T _A ≤ 85°C		-55°C ≤ T _A ≤ 125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t _{PLH} , t _{PHL}	Propagation Delay, (A or B) to Y (Figures 3 and 4)	C _L = 15 pF	3.0 to 3.6	–	4.5	7.9	–	9.5	–	11.0	ns
		C _L = 50 pF		–	6.4	11.4	–	13.0	–	15.5	
		C _L = 15 pF	4.5 to 5.5	–	3.5	5.5	–	6.5	–	8.0	
		C _L = 50 pF		–	4.5	7.5	–	8.5	–	10.0	
C _{IN}	Input Capacitance			–	4.0	10	–	10	–	10	pF
C _{OUT}	Output Capacitance	Output in High Impedance State		–	6.0	–	–	–	–	–	pF
C _{PD}	Power Dissipation Capacitance (Note 5)	Typical @ 25°C, V _{CC} = 5.0 V							pF		
		8.0									

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}.

MC74VHC1G02, MC74VHC1GT02

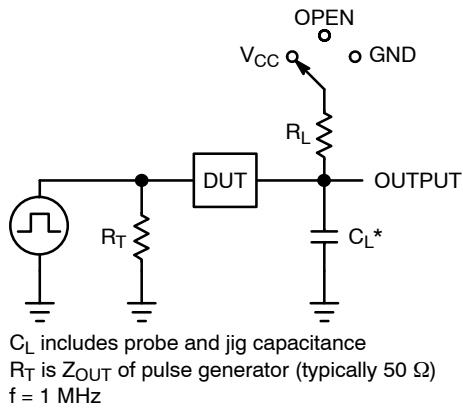


Figure 3. Test Circuit

Test	Switch Position	C_L , pF	R_L , Ω
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

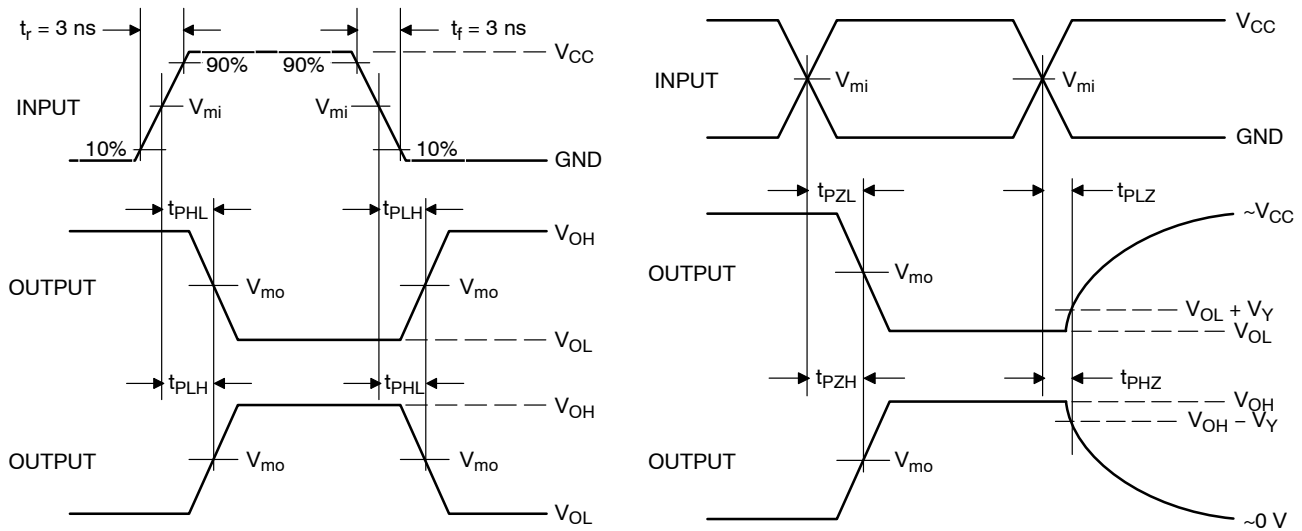


Figure 4. Switching Waveforms

V_{CC} , V	V_{mi} , V	V_{mo} , V		V_Y , V
		t_{PLH}, t_{PHL}	$t_{PZL}, t_{PLZ}, t_{PZH}, t_{PHZ}$	
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

MC74VHC1G02, MC74VHC1GT02

ORDERING INFORMATION

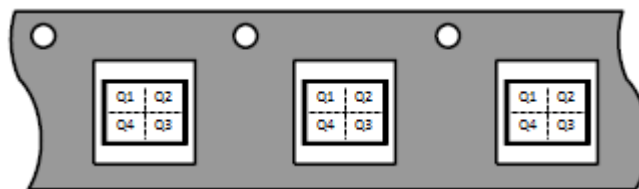
Device	Packages	Specific Device Code	Pin 1 Orientation (See below)	Shipping†
MC74VHC1G02DFT1G	SC-88A	V3	Q2	3000 / Tape & Reel
MC74VHC1G02DFT2G	SC-88A	V3	Q4	3000 / Tape & Reel
MC74VHC1G02DFT1G-Q* (Contact onsemi)	SC-88A	V3	Q2	3000 / Tape & Reel
MC74VHC1G02DFT2G-Q* (Contact onsemi)	SC-88A	V3	Q4	3000 / Tape & Reel
MC74VHC1GT02DFT1G (Contact onsemi)	SC-88A	VJ	Q2	3000 / Tape & Reel
MC74VHC1GT02DFT2G (Contact onsemi)	SC-88A	VJ	Q4	3000 / Tape & Reel
MC74VHC1GT02DFT2G-Q* (Contact onsemi)	SC-88A	VJ	Q4	3000 / Tape & Reel
MC74VHC1G02DBVT1G	SC-74A	V3	Q4	3000 / Tape & Reel
MC74VHC1GT02DBVT1G	SC-74A	VJ	Q4	3000 / Tape & Reel
MC74VHC1GT02DTT1G-Q* (Contact onsemi)	TSOP-5	VJ	Q4	3000 / Tape & Reel
MC74VHC1G02XV5T2G (Contact onsemi)	SOT-553	TBD	Q4	4000 / Tape & Reel
MC74VHC1GT02XV5T2G (Contact onsemi)	SOT-553	TBD	Q4	4000 / Tape & Reel
MC74VHC1G02P5T5G	SOT-953	V	Q2	8000 / Tape & Reel
MC74VHC1GT02P5T5G (Contact onsemi)	SOT-953	TBD	Q2	8000 / Tape & Reel
MC74VHC1G02MU1TCG (Contact onsemi)	UDFN6, 1.45 x 1.0, 0.5P	TBD	Q4	3000 / Tape & Reel
MC74VHC1GT02MU1TCG (Contact onsemi)	UDFN6, 1.45 x 1.0, 0.5P	TBD	Q4	3000 / Tape & Reel
MC74VHC1G02MU3TCG (Contact onsemi)	UDFN6, 1.0 x 1.0, 0.35P	TBD	Q4	3000 / Tape & Reel
MC74VHC1GT02MU3TCG (Contact onsemi)	UDFN6, 1.0 x 1.0, 0.35P	TBD	Q4	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.

*-Q Suffix 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



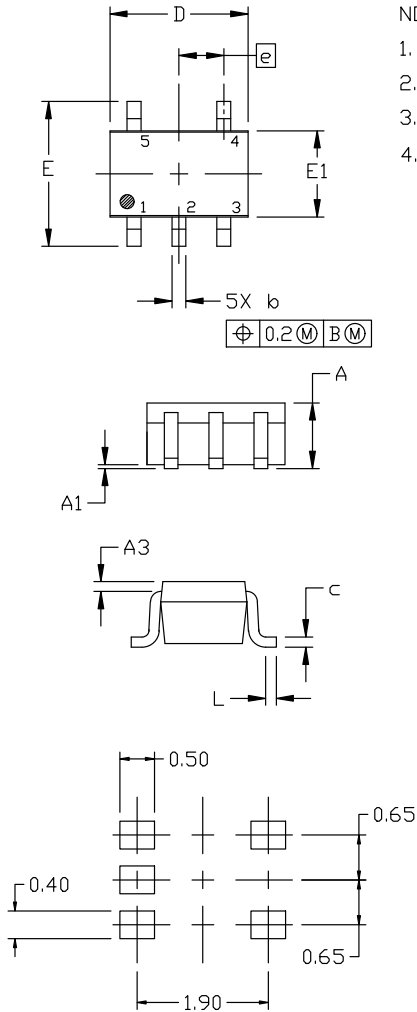
MC74VHC1G02, MC74VHC1GT02

PACKAGE DIMENSIONS

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

CASE 419A-02

ISSUE M



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. 419A-01 OBSOLETE. NEW STANDARD 419A-02
4. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.1016MM PER SIDE.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.80	0.95	1.10
A1	---	---	0.10
A3	0.20 REF		
b	0.10	0.20	0.30
c	0.10	---	0.25
D	1.80	2.00	2.20
E	2.00	2.10	2.20
E1	1.15	1.25	1.35
e	0.65 BSC		
L	0.10	0.15	0.30

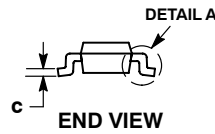
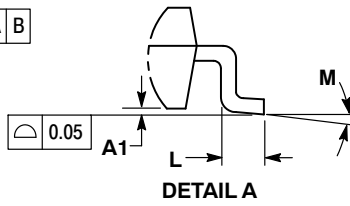
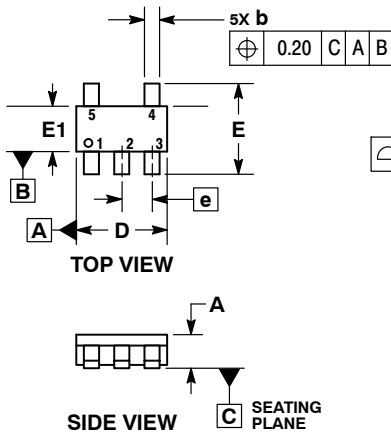
RECOMMENDED MOUNTING FOOTPRINT

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

MC74VHC1G02, MC74VHC1GT02

PACKAGE DIMENSIONS

SC-74A CASE 318BQ ISSUE B

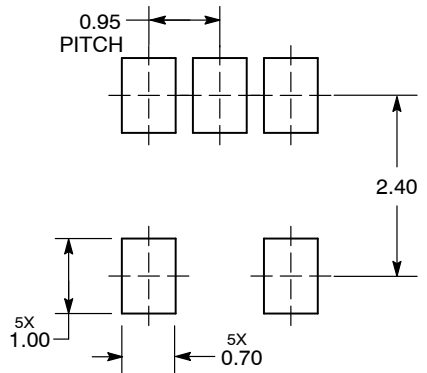


NOTES:

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*



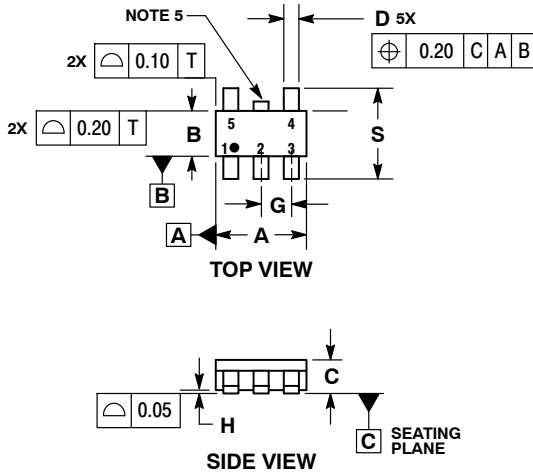
DIMENSIONS: MILLIMETERS

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

MC74VHC1G02, MC74VHC1GT02

PACKAGE DIMENSIONS

TSOP-5 CASE 483 ISSUE N

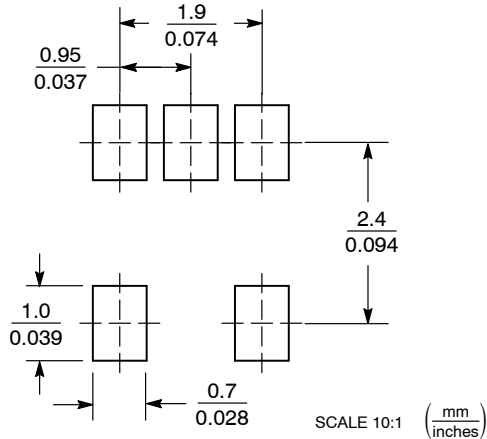


NOTES:

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*

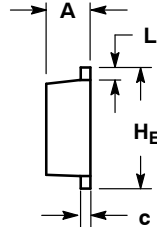


*For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MC74VHC1G02, MC74VHC1GT02

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 _E	1.55	1.60	1.65	0.061	0.063	0.065

SOLDERING FOOTPRINT*

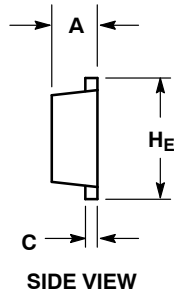
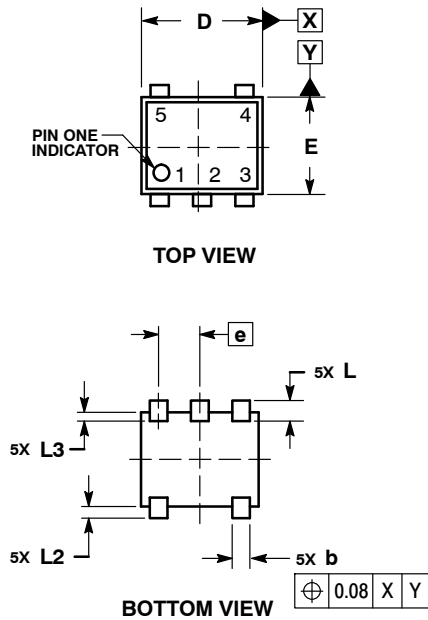


*For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MC74VHC1G02, MC74VHC1GT02

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 _E	0.95	1.00	1.05
L	0.175 REF		
L2	0.05	0.10	0.15
L3	---	---	0.15

SOLDERING FOOTPRINT*



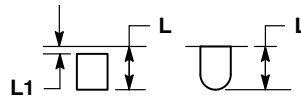
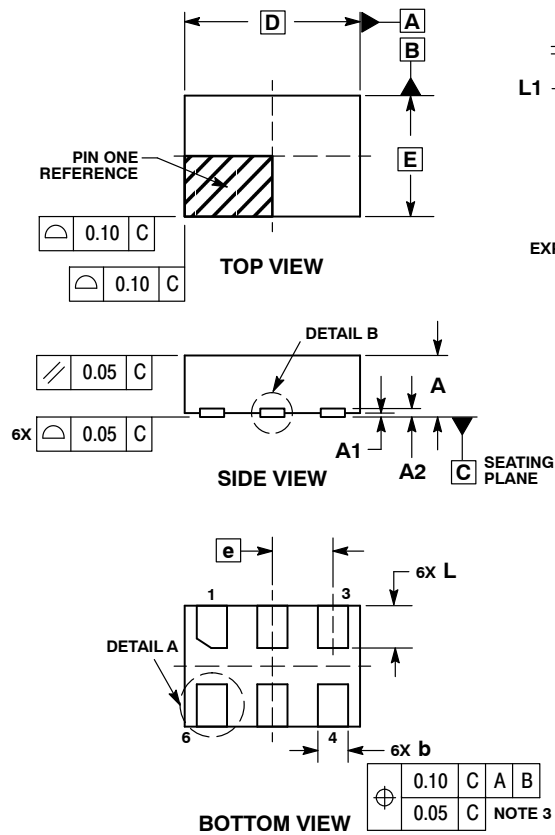
DIMENSIONS: MILLIMETERS

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

MC74VHC1G02, MC74VHC1GT02

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



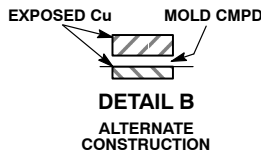
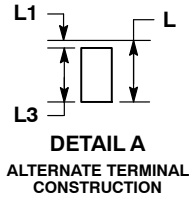
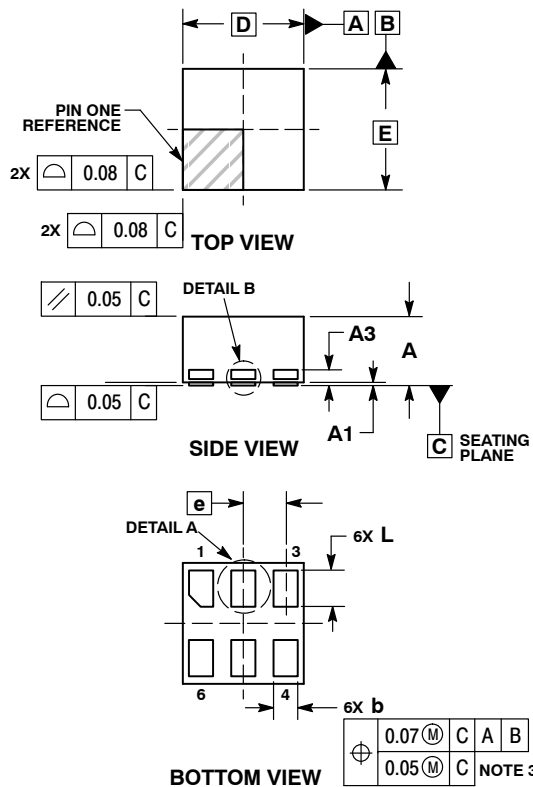
DIMENSIONS: MILLIMETERS

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

MC74VHC1G02, MC74VHC1GT02

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.

MILLIMETERS		
DIM	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 **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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-Marketing.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

onsemi Website: 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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[onsemi:](#)

[M74VHC1GT02DFT1G](#) [M74VHC1GT02DFT2G](#) [MC74VHC1G02DFT1G](#) [MC74VHC1G02DFT2G](#)
[MC74VHC1GT02DBVT1G](#) [MC74VHC1G02DBVT1G](#) [MC74VHC1G02P5T5G](#) [MC74VHC1GT02DBVT1G-Q](#)
[MC74VHC1GT02DFT2G-Q](#) [MC74VHC1GT02DFT1G](#) [MC74VHC1GT02DFT2G](#) [MC74VHC1G02DFT1G-Q](#)
[MC74VHC1G02DFT2G-Q](#)