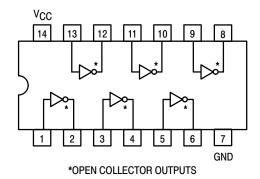
# **Hex Inverter**



### **GUARANTEED OPERATING RANGES**

Symbol	Parameter	Min	Тур	Max	Unit
VCC	Supply Voltage	4.75	5.0	5.25	V
T <sub>A</sub>	Operating Ambient Temperature Range	0	25	70	°C
Vон	Output Voltage – High			5.5	V
l <sub>OL</sub>	Output Current – Low			8.0	mA



# ON Semiconductor™

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# LOW POWER SCHOTTKY



PLASTIC N SUFFIX CASE 646



SOIC D SUFFIX CASE 751A



SOEIAJ M SUFFIX CASE 965

## **ORDERING INFORMATION**

Device	Package	Shipping
SN74LS05N	14 Pin DIP	2000 Units/Box
SN74LS05D	SOIC-14	55 Units/Rail
SN74LS05DR2	SOIC-14	2500/Tape & Reel
SN74LS05M	SOEIAJ-14	See Note 1
SN74LS05MEL	SOEIAJ-14	See Note 1

 For ordering information on the EIAJ version of the SOIC package, please contact your local ON Semiconductor representative.

# DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

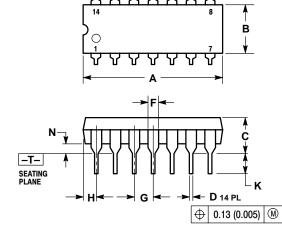
			Limits				
Symbol	Parameter	Min	Тур	Max	Unit	Test C	onditions
VIH	Input HIGH Voltage	2.0			V	Guaranteed Inp All Inputs	ut HIGH Voltage for
V <sub>IL</sub>	Input LOW Voltage			0.8	V	Guaranteed Input LOW Voltage for All Inputs	
VIK	Input Clamp Diode Voltage		-0.65	-1.5	V	V <sub>CC</sub> = MIN, I <sub>IN</sub>	= -18 mA
loн	Output HIGH Current			100	μΑ	V <sub>CC</sub> = MIN, V <sub>C</sub>	oH = MAX
	Outroit I OW/Vallana		0.25	0.4	V	I <sub>OL</sub> = 4.0 mA	V <sub>CC</sub> = V <sub>CC</sub> MIN,
V <sub>OL</sub>	Output LOW Voltage		0.35	0.5	V	I <sub>OL</sub> = 8.0 mA	V <sub>CC</sub> = V <sub>CC</sub> MIN, V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub> per Truth Table
	lament I II Ci I Comment			20	μΑ	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 2.7 V	
ΊΗ	Input HIGH Current			0.1	mA	V <sub>CC</sub> = MAX, V <sub>I</sub>	N = 7.0 V
Ι <sub>Ι</sub> L	Input LOW Current			-0.4	mA	V <sub>CC</sub> = MAX, V <sub>I</sub>	N = 0.4 V
	Power Supply Current						
ICC	Total, Output HIGH			2.4	mA	V <sub>C</sub> C = MAX	
	Total, Output LOW			6.6			

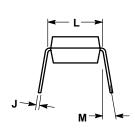
# AC CHARACTERISTICS $(T_A = 25^{\circ}C)$

		Limits				
Symbol	Parameter	Min	Тур	Max	Unit	Test Conditions
<sup>t</sup> PLH	Turn-Off Delay, Input to Output		17	32	ns	V <sub>CC</sub> = 5.0 V
t <sub>PHL</sub>	Turn-On Delay, Input to Output		15	28	ns	$C_L = 15 \text{ pF}, R_L = 2.0 \text{ k}\Omega$

#### **PACKAGE DIMENSIONS**

#### **N SUFFIX** PLASTIC PACKAGE CASE 646-06 ISSUE M





- NOTES:

  1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

  2. CONTROLLING DIMENSION: INCH.

  3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.

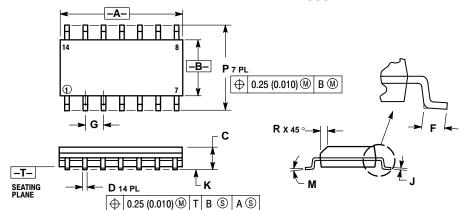
  4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.

  5. ROUNDED CORNERS OPTIONAL.

	INC	HES	MILLIN	IETERS	
DIM	MIN MAX		MIN	MAX	
Α	0.715	0.770	18.16	18.80	
В	0.240	0.260	6.10	6.60	
С	0.145	0.185	3.69	4.69	
D	0.015	0.021	0.38	0.53	
F	0.040	0.070	1.02	1.78	
G	0.100	BSC	2.54 BSC		
Н	0.052	0.095	1.32	2.41	
J	0.008	0.015	0.20	0.38	
K	0.115	0.135	2.92	3.43	
L	0.290	0.310	7.37	7.87	
M		10°		10°	
N	0.015	0.039	0.38	1.01	

#### **D SUFFIX**

PLASTIC SOIC PACKAGE CASE 751A-03 ISSUE F



#### NOTES:

- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: MILLIMETER.
- DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
- MOLD PROTRUSION.

  4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.

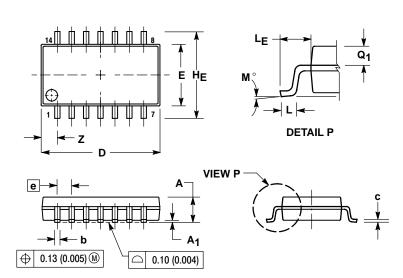
  5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INCHES		
DIM	MIN	MAX	MIN	MAX	
Α	8.55	8.75	0.337	0.344	
В	3.80	4.00	0.150	0.157	
С	1.35	1.75	0.054	0.068	
D	0.35	0.49	0.014	0.019	
F	0.40	1.25	0.016	0.049	
G	1.27	BSC	0.050	BSC	
7	0.19	0.25	0.008	0.009	
K	0.10	0.25	0.004	0.009	
M	0 °	7°	0 °	7°	
P	5.80	6.20	0.228	0.244	
R	0.25	0.50	0.010	0.019	

#### PACKAGE DIMENSIONS

#### **M SUFFIX**

SOEIAJ PACKAGE CASE 965-01 **ISSUE O** 



- NOTES:
  1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. CONTROLLING DIMENSION: MILLIMETER.
- 3. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS AND ARE MEASURED AT THE PARTING LINE. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
- TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY. THE LEAD WIDTH DIMENSION (b) DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003)
  TOTAL IN EXCESS OF THE LEAD WIDTH DIMENSION AT MAXIMUM MATERIAL CONDITION.

  DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT. MINIMUM SPACE BETWEEN PROTRUSIONS AND ADJACENT LEAD TO BE 0.46 ( 0.018).

	MILLIMETERS		INCHES		
DIM	MIN	MAX	MIN	MAX	
Α		2.05		0.081	
Α <sub>1</sub>	0.05	0.20	0.002	0.008	
b	0.35	0.50	0.014	0.020	
С	0.18	0.27	0.007	0.011	
D	9.90	10.50	0.390	0.413	
Е	5.10	5.45	0.201	0.215	
е	1.27 BSC		0.050 BSC		
ΗE	7.40	8.20	0.291	0.323	
0.50	0.50	0.85	0.020	0.033	
上	1.10	1.50	0.043	0.059	
M	0 °	10°	0 °	10 °	
Q <sub>1</sub>	0.70	0.90	0.028	0.035	
Z		1.42		0.056	

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