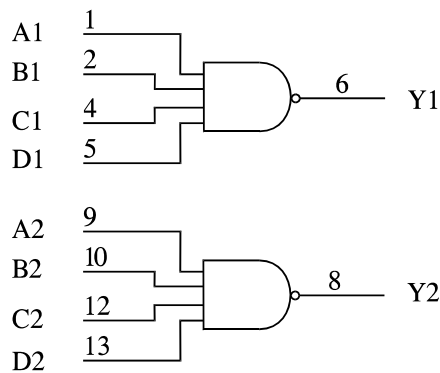


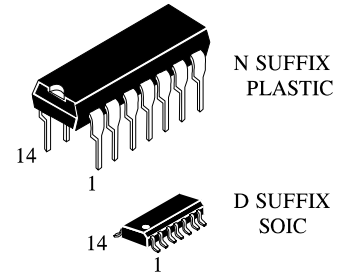
IN7440

Dual 4-Input Positive-NAND Buffers

LOGIC DIAGRAM

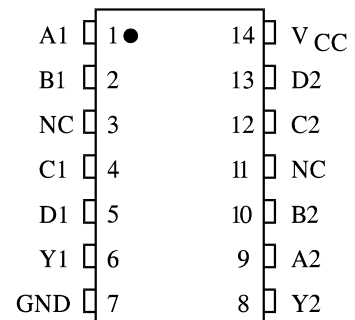


PIN 14 = V_{CC}
PIN 7 = GND



ORDERING INFORMATION
IN7440N Plastic
IN7440D SOIC
 $T_A = -10^\circ$ to 70° C for all packages

PIN ASSIGNMENT



NC - No internal connection

FUNCTION TABLE

Inputs				Output
A	B	C	D	Y
L	X	X	X	H
X	L	X	X	H
X	X	L	X	H
X	X	X	L	H
H	H	H	H	L

X = don't care

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	7.0	V
V_{IN}	Input Voltage	5.5	V
I_{OL}	Low Level Output Current	48	mA
Tstg	Storage Temperature Range	-65 to +150	°C

*Maximum Ratings are those values beyond which damage to the device may occur. Functional operation should be restricted to the Recommended Operating Conditions.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V_{CC}	Supply Voltage	4.75	5.25	V
V_{IH}	High Level Input Voltage	2.0		V
V_{IL}	Low Level Input Voltage		0.8	V
I_{OH}	High Level Output Current		-1.2	mA
I_{OL}	Low Level Output Current		48	mA
T_A	Ambient Temperature Range	-10	+70	°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Test Conditions	Guaranteed Limit		Unit
			Min	Max	
V_{IK}	Input Clamp Voltage	$V_{CC} = \min, I_{IN} = -10 \text{ mA}$		-1.5	V
V_{OH}	High Level Output Voltage	$V_{CC} = \min, I_{OH} = \max$	2.4		V
V_{OL}	Low Level Output Voltage	$V_{CC} = \min, I_{OL} = \max$		0.4	V
I_I	Input Current at Maximum Input Voltage	$V_{CC} = \max, V_{IN} = 5.5 \text{ V}$		1	mA
I_{IH}	High Level Input Current	$V_{CC} = \max, V_{IN} = 2.4 \text{ V}$		40	μA
I_{IL}	Low Level Input Current	$V_{CC} = \max, V_{IN} = 0.4 \text{ V}$		-1.6	mA
I_{OS}^*	Short-Circuit Output Current		-18	-70	mA
I_{CC}	Supply Current	$V_{CC} = \max$	Outputs High	8	mA
			Outputs Low	27	

*Not more than one output should be shorted at a time, and duration of the short-circuit should not exceed one second.

AC ELECTRICAL CHARACTERISTICS ($T = 25^{\circ}\text{C}$, $V_{\text{CC}} = 5.0\text{ V}$, $C_L = 15\text{ pF}$,
 $R_L = 130\ \Omega$, Input $t_r = t_f = 10\text{ ns}$)

Symbol	Parameter	Min	Max	Unit
t_{PLH}	Propagation Delay Time, Low to High Level Output (from Input to Output)		22	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output (from Input to Output)		15	ns

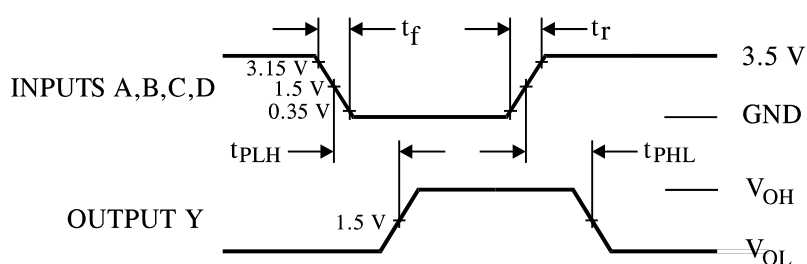
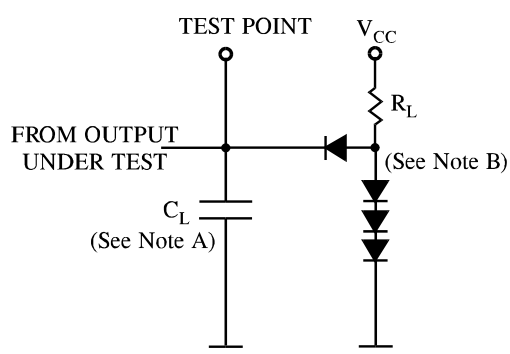


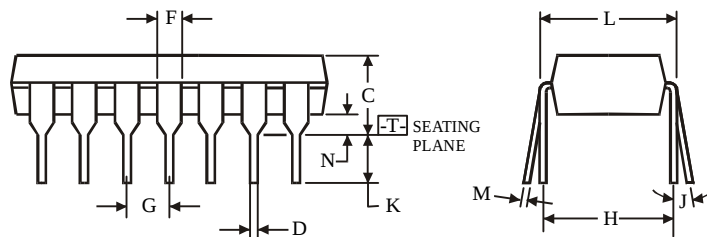
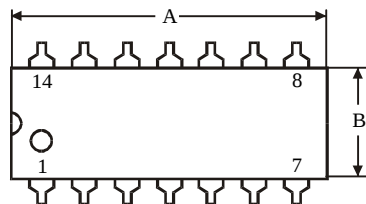
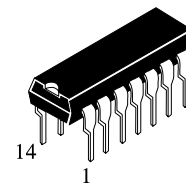
Figure 1. Switching Waveforms



NOTES A. C_L includes probe and jig capacitance.
 B. All diodes are 1N916 or 1N3064.

Figure 2. Test Circuit

N SUFFIX PLASTIC DIP (MS - 001AA)



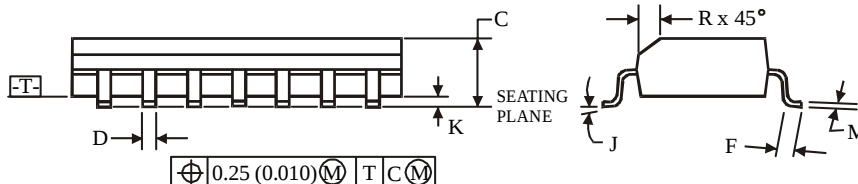
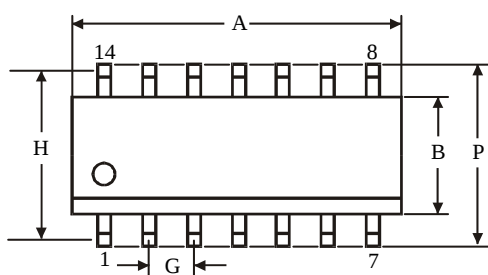
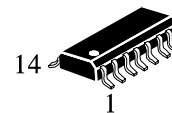
⌀ 0.25 (0.010) (M) T

NOTES:

- Dimensions "A", "B" do not include mold flash or protrusions.
Maximum mold flash or protrusions 0.25 mm (0.010) per side.

	Dimension, mm	
Symbol	MIN	MAX
A	18.67	19.69
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

D SUFFIX SOIC (MS - 012AB)



⌀ 0.25 (0.010) (M) T C (M)

NOTES:

- Dimensions A and B do not include mold flash or protrusion.
- Maximum mold flash or protrusion 0.15 mm (0.006) per side
for A; for B - 0.25 mm (0.010) per side.

	Dimension, mm	
Symbol	MIN	MAX
A	8.55	8.75
B	3.8	4
C	1.35	1.75
D	0.33	0.51
F	0.4	1.27
G	1.27	
H	5.27	
J	0°	8°
K	0.1	0.25
M	0.19	0.25
P	5.8	6.2
R	0.25	0.5