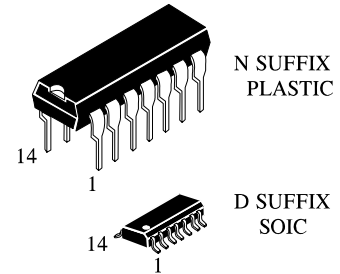


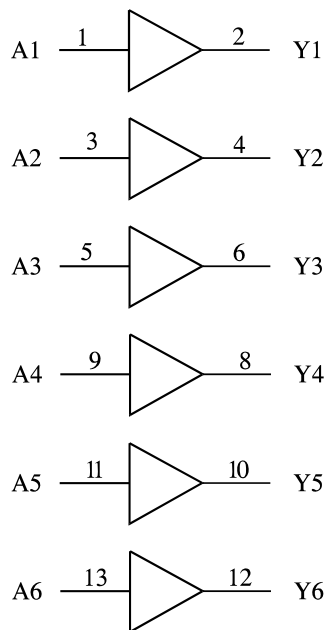
**IN7407**

# Hex Buffers/Drivers with Open-Collector High-Voltage Outputs



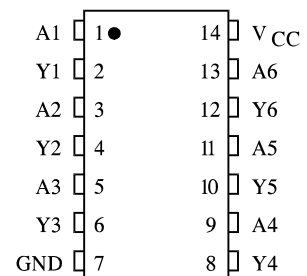
**ORDERING INFORMATION**  
 IN7407N Plastic  
 IN7407D SOIC  
 $T_A = -10^\circ \text{ to } 70^\circ \text{ C}$  for all packages

## LOGIC DIAGRAM



PIN 14 =  $V_{CC}$   
 PIN 7 = GND

## PIN ASSIGNMENT



## FUNCTION TABLE

Inputs	Output
A	Y
H	Z
L	L

Z = High Impedance

**MAXIMUM RATINGS\***

Symbol	Parameter	Value	Unit
$V_{CC}$	Supply Voltage	7.0	V
$V_{IN}$	Input Voltage	5.5	V
$V_{OUT}$	Output Voltage	30	V
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**

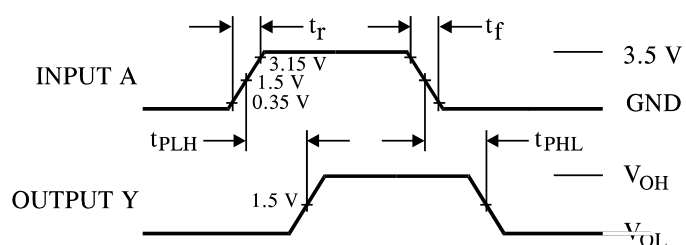
Symbol	Parameter	Min	Max	Unit
$V_{CC}$	Supply Voltage	4.75	5.25	V
$V_{IH}$	High Level Input Voltage	2.0		V
$V_{IL}$	Low Level Input Voltage		0.8	V
$U_{OH}$	High Level Output Voltage		30	V
$I_{OL}$	Low Level Output Current		40	mA
$T_A$	Ambient Temperature Range	-10	+70	°C

**DC ELECTRICAL CHARACTERISTICS** over full operating conditions

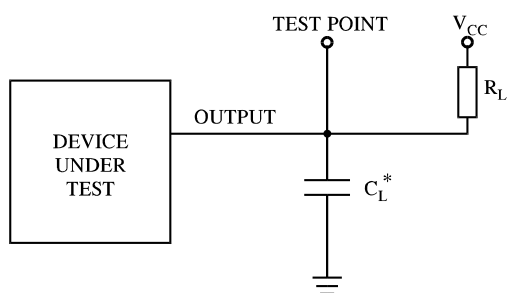
Symbol	Parameter	Test Conditions	Guaranteed Limit		Unit
			Min	Max	
$V_{IK}$	Input Clamp Voltage	$V_{CC} = \min, I_{IN} = -12 \text{ mA}$		-1.5	V
$I_{OH}$	High Level Output Current	$V_{CC} = \min, V_{OH} = \max$		0.25	mA
$V_{OL}$	Low Level Output Voltage	$V_{CC} = \min, I_{OL} = 16 \text{ mA}$		0.4	V
		$V_{CC} = \min, I_{OL} = 40 \text{ mA}$		0.7	
$I_{IH}$	High Level Input Current	$V_{CC} = \max, V_{IN} = 2.4 \text{ V}$		0.04	$\mu\text{A}$
		$V_{CC} = \max, V_{IN} = 5.5 \text{ V}$		1.0	mA
$I_{IL}$	Low Level Input Current	$V_{CC} = \max, V_{IN} = 0.4 \text{ V}$		-1.6	mA
$I_{CC}$	Supply Current	$V_{CC} = \max$ Outputs High		41	mA
		Outputs Low		30	

**AC ELECTRICAL CHARACTERISTICS** ( $T = 25^{\circ}\text{C}$ ,  $V_{CC} = 5.0\text{ V}$ ,  $C_L = 15\text{ pF}$ ,  
 $R_L = 110\ \Omega$ , 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)		10	ns
$t_{PHL}$	Propagation Delay Time, High to Low Level Output (from Input to Output)		35	ns



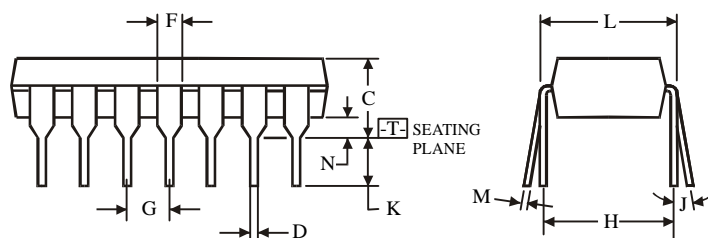
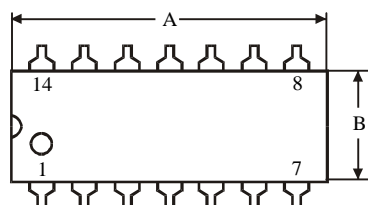
**Figure 1. Switching Waveforms**



\* Includes all probe and jig capacitance

**Figure 2. Test Circuit**

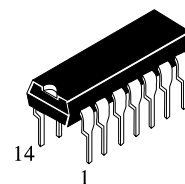
**N SUFFIX PLASTIC DIP**  
(MS - 001AA)



$\oplus 0.25 (0.010) \text{ (M) T}$

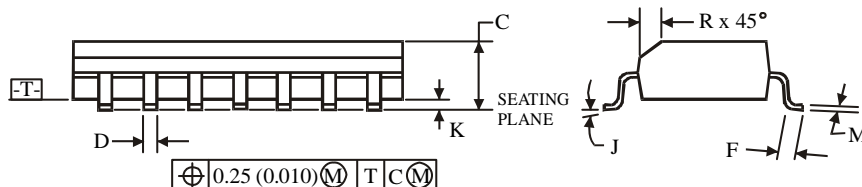
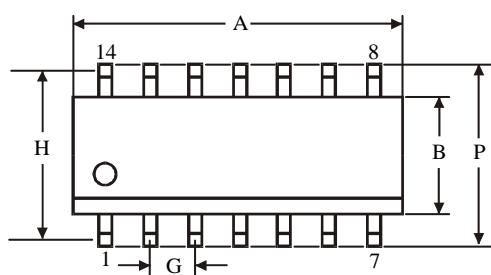
**NOTES:**

- 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	

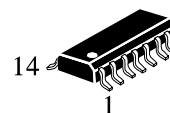
**D SUFFIX SOIC**  
(MS - 012AB)



$\oplus 0.25 (0.010) \text{ (M) T C (M)}$

**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