

## DM74AS1004A Hex Inverting Driver

### General Description

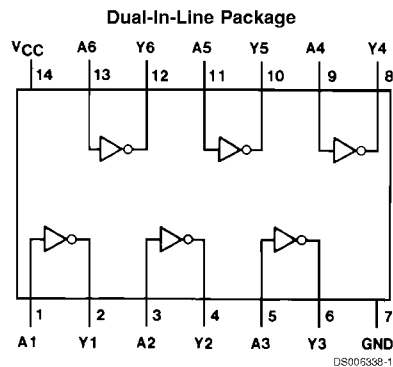
These devices contain six independent 2-input drivers, each of which performs the logic invert/complement function. The 'AS1004A is a driver version of the 'AS04. Each driver has increased output drive capability to allow the driving of high capacitive loads.

- Switching specifications guaranteed over full temperature and  $V_{CC}$  range
- Advanced oxide-isolated, ion-implanted Schottky TTL process

### Features

- Switching specifications at 50 pF

### Connection Diagram



Order Number DM74AS1004AM or DM74AS1004AN  
See Package Number M14A or N14A

### Function Table

$$A = \bar{Y}$$

Input	Output
A	Y
L	H
H	L

H = High Logic Level  
L = Low Logic Level

**Absolute Maximum Ratings** (Note 1)

Supply Voltage	7V
Input Voltage	7V
Operating Free Air Temperature Range	0°C to +70°C

Storage Temperature Range

-65°C to +150°C

Typical  $\theta_{JA}$ 

N Package

76.0°C/W

M Package

106.0°C/W

**Recommended Operating Conditions**

Symbol	Parameter	Min	Nom	Max	Units
$V_{CC}$	Supply Voltage	4.5	5	5.5	V
$V_{IH}$	High Level Input Voltage	2			V
$V_{IL}$	Low Level Input Voltage			0.8	V
$I_{OH}$	High Level Output Current			-48	mA
$I_{OL}$	Low Level Output Current			48	mA
$T_A$	Free Air Operating Temperature	0		70	°C

**Note 1:** The "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the "Electrical Characteristics" table are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

**Electrical Characteristics**

over recommended operating free air temperature range. All typical values are measured at  $V_{CC} = 5V$ ,  $T_A = 25^\circ C$ .

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_{IK}$	Input Clamp Voltage	$V_{CC} = 4.5V$ , $I_I = -18 mA$			-1.2	V
$V_{OH}$	High Level Output Voltage	$I_{OH} = -2 mA$ , $V_{CC} = 4.5V$ to $5.5V$	$V_{CC} - 2$			V
		$I_{OH} = -3 mA$ , $V_{CC} = 4.5V$	2.4	3.2		
		$I_{OH} = \text{Max}$ , $V_{CC} = 4.5V$	2			
$V_{OL}$	Low Level Output Voltage	$V_{CC} = 4.5V$ , $I_{OL} = \text{Max}$		0.35	0.5	V
$I_I$	Input Current @ Max Input Voltage	$V_{CC} = 5.5V$ , $V_{IH} = 7V$			0.1	mA
$I_{IH}$	High Level Input Current	$V_{CC} = 5.5V$ , $V_{IH} = 2.7V$			20	$\mu A$
$I_{IL}$	Low Level Input Current	$V_{CC} = 5.5V$ , $V_{IL} = 0.4V$			-0.5	mA
$I_O$	Output Drive Current	$V_{CC} = 5.5V$ , $V_O = 2.25V$	-50	-135	-200	mA
$I_{CC}$	Supply Current	$V_{CC} = 5.5V$	Outputs High	3.2	5	mA
			Outputs Low	16	27	mA

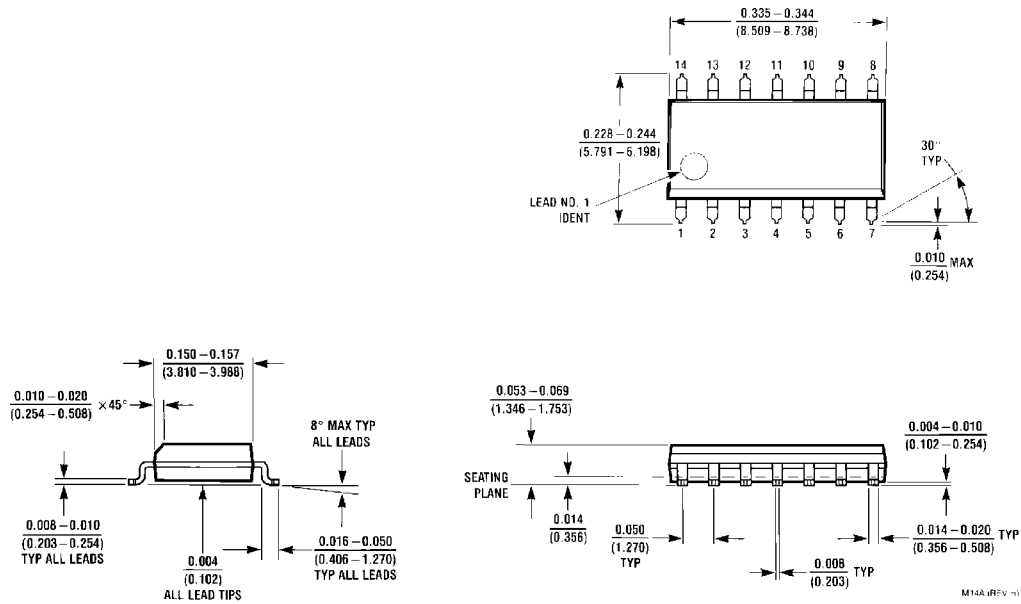
**Switching Characteristics**

over recommended operating free air temperature range (Note 2)

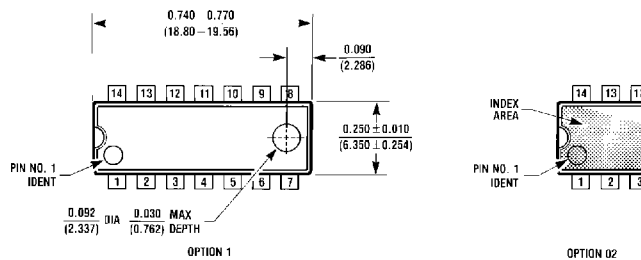
Symbol	Parameter	Conditions	Min	Max	Units
$t_{PLH}$	Propagation Delay Time Low to High Level Output	$V_{CC} = 4.5V$ to $5.5V$ $R_L = 500\Omega$	1	4	ns
$t_{PHL}$	Propagation Delay Time High to Low Level Output	$C_L = 50 pF$	1	4	ns

**Note 2:** See Section 1 for test waveforms and output load.

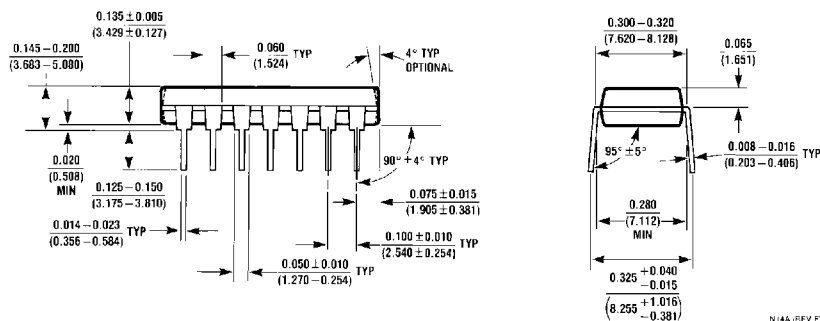
**Physical Dimensions** inches (millimeters) unless otherwise noted



**S.O. Package (M)**  
**Order Number DM74AS1004AM**  
**Package Number M14A**



**Molded Dual-In-Line Package (N)**  
**Order Number DM74AS1004AN**  
**Package Number N14A**



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