

DM74AS1004A Hex Inverting Driver

General Description

These devices contain six independent 2-input drivers, each of which performs the logic invert/complement function. The DM74AS1004A is a driver version of the DM74AS04. Each driver has increased output drive capability to allow the driving of high capacitive loads.

Features

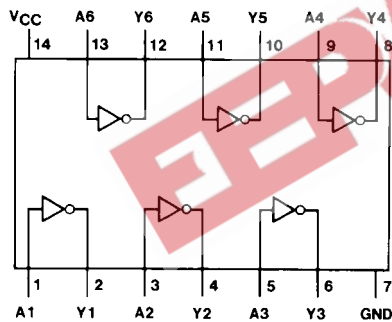
- Switching specifications at 50 pF
- Switching specifications guaranteed over full temperature and V_{CC} range
- Advanced oxide-isolated, ion-implanted Schottky TTL process

Ordering Code:

Order Number	Package Number	Package Description
DM74AS1004AM	M14A	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
DM74AS1004AN	N14A	14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

Devices also available in Tape and Reel. Specify by appending the suffix letter "X" to the ordering code.

Connection Diagram



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 θ_{JA}	
N Package	76.0°C/W
M Package	106.0°C/W

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 tables are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

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

Electrical Characteristics

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

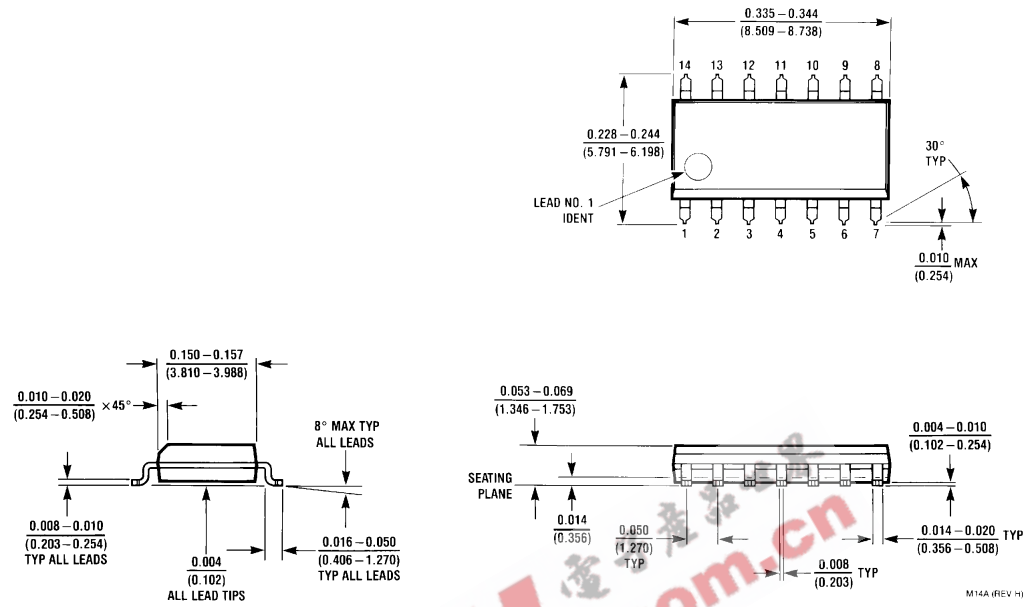
Symbol	Parameter	Conditions	Min	Typ	Max	Units	
V_{IK}	Input Clamp Voltage	$V_{CC} = 4.5V$, $I_I = -18\text{ mA}$			-1.2	V	
V_{OH}	HIGH Level Output Voltage	$I_{OH} = -2\text{ mA}$, $V_{CC} = 4.5V$ to $5.5V$	$V_{CC} - 2$			V	
	Output Voltage	$I_{OH} = -3\text{ mA}$, $V_{CC} = 4.5V$	2.4	3.2			
		$I_{OH} = \text{Max}$, $V_{CC} = 4.5V$	2				
V_{OL}	LOW Level Output Voltage	$V_{CC} = 4.5V$, $I_{OL} = \text{Max}$		0.35	0.5	V	
	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	μA	
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

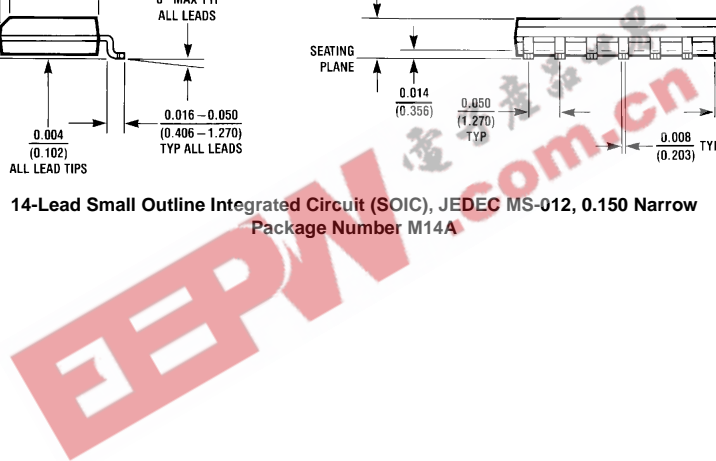
over recommended operating free air temperature range

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

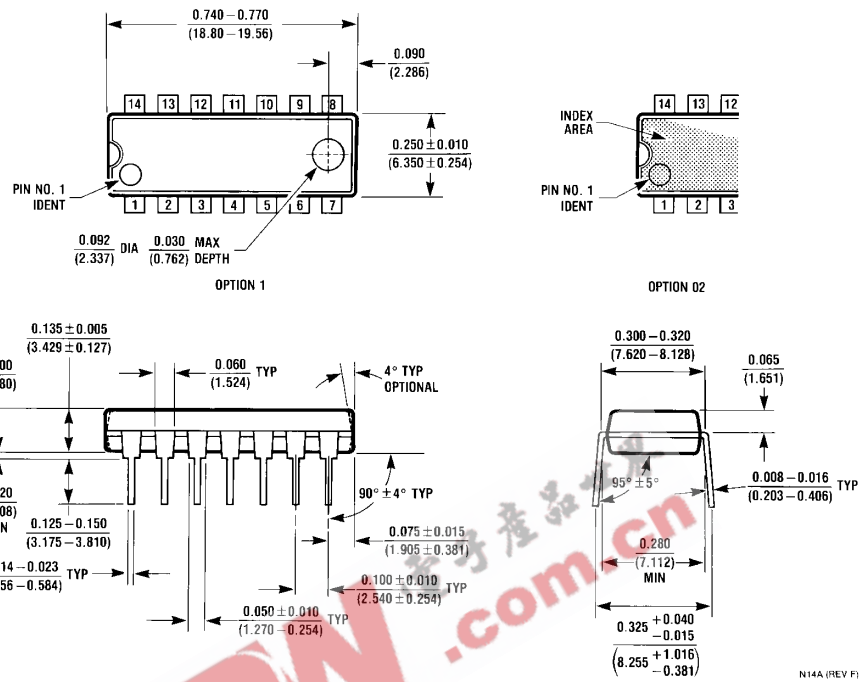
Physical Dimensions inches (millimeters) unless otherwise noted



**14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
Package Number M14A**



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



**14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide
Package Number N14A**

N14A (REV F)

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