

## DM74ALS804A Hex 2-Input NAND Driver

### General Description

This device contains six independent 2-input drivers, each of which performs the logic NAND function.

### Features

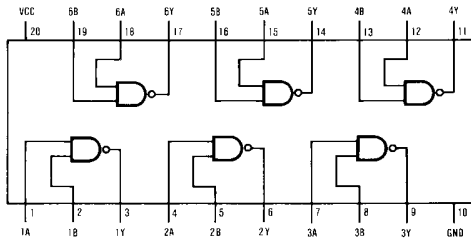
- Switching specifications at 50 pF
- Switching specifications guaranteed over full temperature and  $V_{CC}$  range
- Advanced oxide-isolated, ion-implanted Schottky TTL process
- Functionally and pin for pin compatible with Schottky and low power Schottky TTL counterpart
- Improved AC performance over Schottky and low power Schottky counterparts

### Ordering Code:

Order Number	Package Number	Package Description
DM74ALS804AWM	M20B	20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300 Wide
DM74ALS804AN	N20A	20-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

$$Y = \overline{AB}$$

Inputs		Output
A	B	Y
L	L	H
L	H	H
H	L	H
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	58.0°C/W
M Package	78.0°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			-15	mA
$I_{OL}$	LOW Level Output Current			24	mA
$T_A$	Free Air Operating Temperature	0		70	°C

**Note 2:** Applies for the DM74ALS804-1 option only.

**Electrical Characteristics**

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

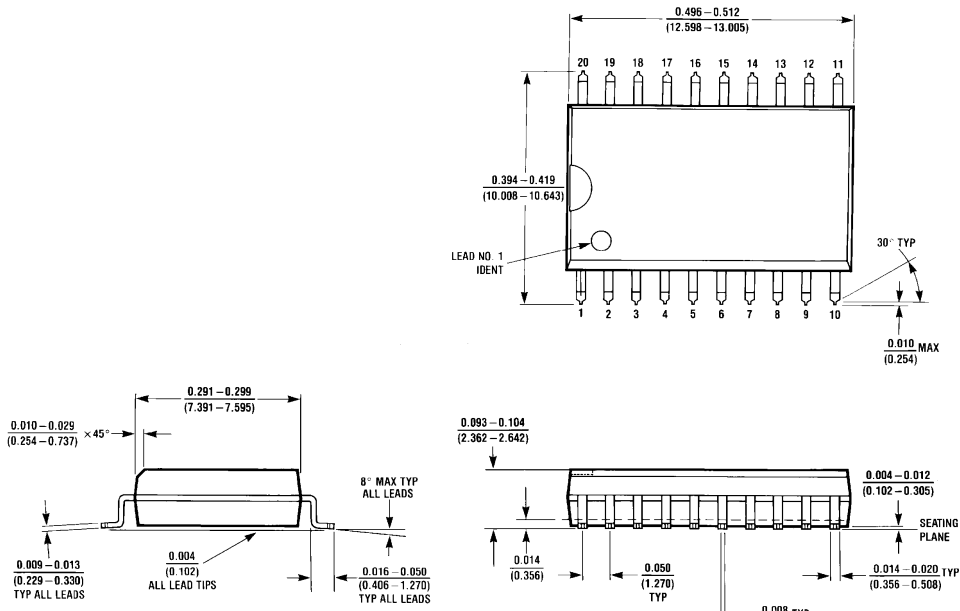
Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_{IK}$	Input Clamp Voltage	$V_{CC} = 4.5V$ , $I_I = -18$ mA			-1.2	V
$V_{OH}$	HIGH Level	$I_{OH} = -0.4$ mA, $V_{CC} = 4.5V$ to $5.5V$	$V_{CC} - 2$			V
	Output Voltage	$I_{OH} = -3$ mA, $V_{CC} = 4.5V$	2.4			V
		$I_{OH} = \text{Max}$ , $V_{CC} = 4.5V$	2			V
$V_{OL}$	LOW Level Output Voltage	$V_{CC} = 4.5V$ , $I_{OL} = 24$ mA		0.35	0.5	V
$I_I$	Input Current at Maximum 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	$V_{CC} = 5.5V$ , $V_{IL} = 0.4V$			-0.1	mA
$I_O$	Output Drive Current	$V_{CC} = 5.5V$ , $V_O = 2.25V$	-30		-112	mA
$I_{CC}$	Supply Current	$V_{CC} = 5.5V$ , $V_I = 0V$ , Outputs HIGH		0.9	2.5	mA
		$V_{CC} = 5.5V$ , $V_I = 4.5V$ , Outputs LOW		7	12	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 $5.5V$ $R_L = 500\Omega$ $C_L = 50$ pF	2	7	ns
	LOW-to-HIGH Level Output				
$t_{PHL}$	Propagation Delay Time	$V_{CC} = 4.5V$ to $5.5V$ $R_L = 500\Omega$ $C_L = 50$ pF	2	8	ns
	HIGH-to-LOW Level Output				

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



**20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300 Wide  
Package Number M20B**

