

September 1986 Revised February 2000

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

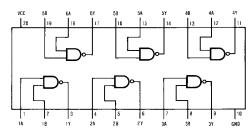
- Switching specifications at 50 pF
- \blacksquare Switching specifications guaranteed over full temperature and V_{CC} range
- Advanced oxide-isolated, ion-implanted Schottky TTL process
- Functionally and pin for pin compatible with Schottky and low power Schottky TTL counterpart
- Improved AC performance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

 $\mathbf{Y}=\overline{\mathbf{AB}}$

Inp	Output		
Α	В	Υ	
L	L	Н	
L	Н	Н	
Н	L	Н	
Н	Н	L	

H = HIGH Logic Leve

Absolute Maximum Ratings(Note 1)

Supply Voltage 7V Input Voltage 7V

Operating Free Air Temperature Range 0°C to +70°C

Storage Temperature Range $-65^{\circ}\text{C to } +150^{\circ}\text{C}$

Typical θ_{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

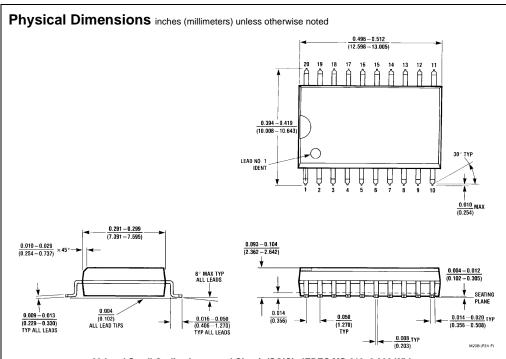
over recommended operating free air temperature range. All typical values are measured at $V_{CC} = 5V$, $T_A = 25^{\circ}C$.

Symbol	Parameter	Conditions		Min	Тур	Max	Units
V _{IK}	Input Clamp Voltage	$V_{CC} = 4.5V, I_I = -18 \text{ mA}$	V _{CC} = 4.5V, I _I = -18 mA			-1.2	V
V _{OH}	HIGH Level	$I_{OH} = -0.4 \text{ mA}, V_{CC} = 4.5 \text{V t}$	$I_{OH} = -0.4 \text{ mA}, V_{CC} = 4.5 \text{V to } 5.5 \text{V}$				V
	Output Voltage	$I_{OH} = -3 \text{ mA}, V_{CC} = 4.5 \text{V}$		2.4			V
		I _{OH} = 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	μΑ
I _{IL}	LOW Level Input Current	$V_{CC} = 5.5V, V_{IL} = 0.4V$				-0.1	mA
Io	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
			$V_I = 4.5V$, Outputs LOW		7	12	mA

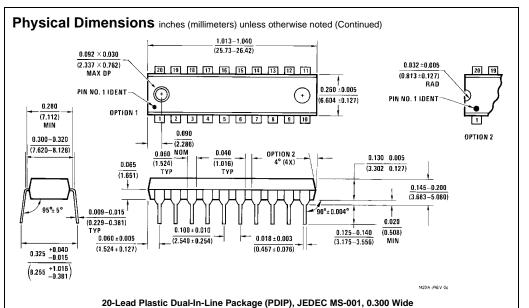
Switching Characteristics

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	2	7	ns
	LOW-to-HIGH Level Output	$R_L = 500\Omega$		l '	110
t _{PHL}	Propagation Delay Time	$C_L = 50 \text{ pF}$	2	8	ns
	HIGH-to-LOW Level Output		_	0	113



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



Package Number N20A

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