

DM74ALS804A Hex 2-Input NAND Driver

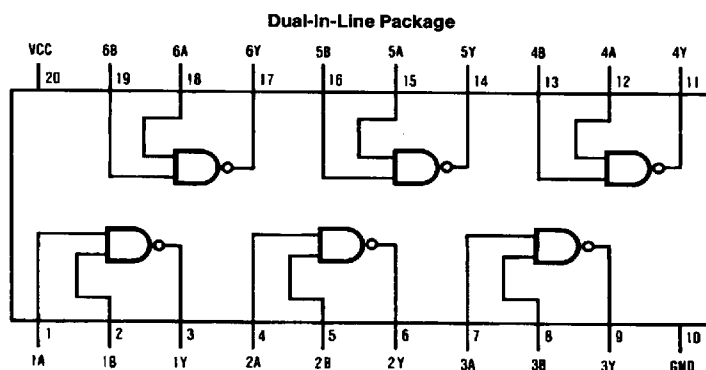
General Description

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

Connection Diagram



Order Number DM74ALS804AWM or DM74ALS804AN
See NS Package Number M20B or N20A

TL/F/6239-1

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

Supply Voltage	7V
Input Voltage	7V
Operating Free Air Temperature Range	
DM74ALS	0°C to +70°C
Storage Temperature Range	-65°C to +150°C
Typical θ_{JA}	
N Package	58.0°C/W
M Package	78.0°C/W

Note: This product meets application requirements of 500 temperature cycles from -65°C to +150°C.

Note: 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.

Recommended Operating Conditions

Symbol	Parameter	DM74ALS804A			Units
		Min	Nom	Max	
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

*Applies for the DM74ALS804-1 option only.

Electrical Characteristics

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

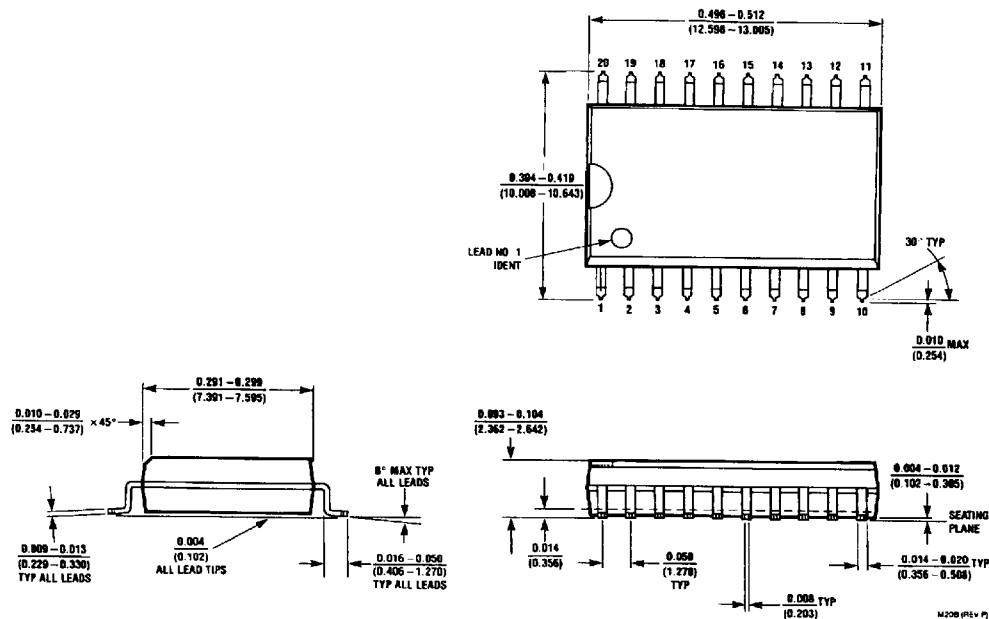
Symbol	Parameter	Conditions	Min	Typ	Max	Units
V_{IK}	Input Clamp Voltage	$V_{CC} = 4.5V$, $I_I = -18mA$			-1.2	V
V_{OH}	High Level Output Voltage	$I_{OH} = -0.4mA$, $V_{CC} = 4.5V$ to $5.5V$	$V_{CC} - 2$			V
		$I_{OH} = -3mA$, $V_{CC} = 4.5V$	2.4			V
		$I_{OH} = \text{Max}$, $V_{CC} = 4.5V$	2			V
V_{OL}	Low Level Output Voltage	$V_{CC} = 4.5V$ 74ALS $I_{OL} = 24mA$		0.35	0.5	V
I_I	Input Current at 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	$V_{CC} = 5.5V$, $V_{IL} = 0.4V$			-0.1	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
		$V_I = 4.5V$, Outputs Low		7	12	mA

Switching Characteristics over recommended operating free air temperature range (Note 1)

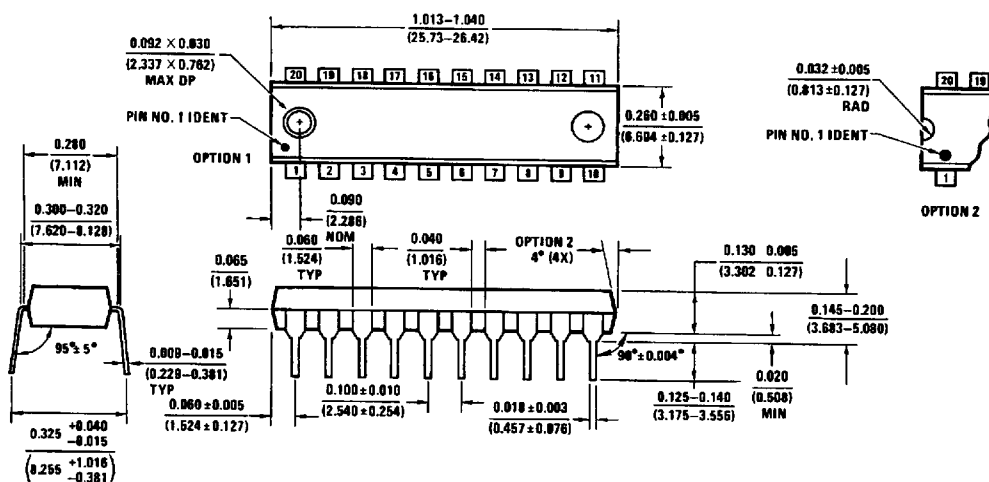
Symbol	Parameter	Conditions	DM74ALS804A		Units
			Min	Max	
t_{PLH}	Propagation Delay Time Low to High Level Output	$V_{CC} = 4.5V$ to $5.5V$ $R_L = 500\Omega$ $C_L = 50pF$	2	7	ns
t_{PHL}	Propagation Delay Time High to Low Level Output		2	8	ns

Note 1: See Section 5 for test waveforms and output load.

Physical Dimensions inches (millimeters)



S.O. Package (M)
Order Number DM74ALS804AWM
NS Package Number M20B

Physical Dimensions inches (millimeters) (Continued)

Molded Dual-In-Line Package (N)
Order Number DM74ALS804AN
NS Package Number N20A

N20A (REV G)

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National Semiconductor Corporation
 1111 West Bardin Road
 Arlington, TX 76017
 Tel: 1(800) 272-9959
 Fax: 1(800) 737-7018

<http://www.national.com>

National Semiconductor Europe

Fax: +49 (0) 180-530 85 86
 Email: europe.support@nsc.com
 Deutsch Tel: +49 (0) 180-530 85 86
 English Tel: +49 (0) 180-532 78 32
 Français Tel: +49 (0) 180-532 93 58
 Italiano Tel: +49 (0) 180-534 16 80

National Semiconductor Hong Kong Ltd.

13th Floor, Straight Block,
 Ocean Centre, 5 Canton Rd.
 Tsimshatsui, Kowloon
 Hong Kong
 Tel: (852) 2737-1600
 Fax: (852) 2736-9960

National Semiconductor Japan Ltd.

Tel: 81-043-299-2308
 Fax: 81-043-299-2408

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