

DM74AS1804 Hex 2-Input NAND Driver

General Description

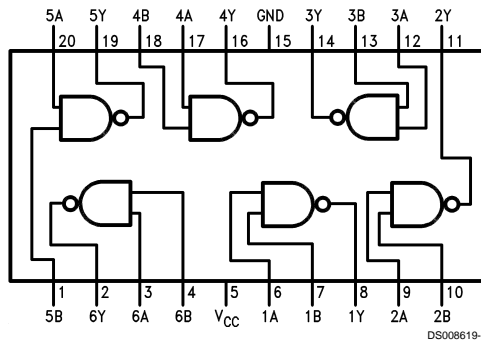
These devices contain six independent 2-Input drivers each of which performs the logic NAND function. The 'AS1804 is equivalent to the 'AS804B but the supply voltage and ground pins are centered in the package. This positioning of the supply voltage and ground pins reduce the lead inductance of these pins. This reduction of lead inductance will minimize noise generated onto either the supply voltage or ground bus which is significant in high current switching applications.

- Switching specifications guaranteed over full temperature and V_{CC} range
- Advanced oxide-isolated, ion-implanted Schottky TTL process
- Centered V_{CC} and GND configuration provides minimum lead inductance for high current switching applications
- High capacitive drive capability

Features

- Switching specifications at 50 pF

Connection Diagram



Order Number DM74AS1804WM or DM74AS1804N
See Package Number M20B or N20A

Function Table

$$Y = \overline{A \cdot B}$$

INPUTS		OUTPUT
A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

Absolute Maximum Ratings (Note 1)

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

Storage Temperature Range

-65°C to +150°C

Typical θ_{JA}

N Package

58.3°C/W

M Package

154.0°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	Operating Free Air Temperature Range	0		70	°C

Note 1: The "Absolute Maximum Ratings" are those values beyond which the safety of the device can not 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

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} = Max, V _{CC} = 4.5V	2			
V _{OL}	Low Level Output Voltage	V _{CC} = 4.5V, I _{OL} = Max, V _{IH} = 2V			0.5	V
I _I	Input Current at Maximum Input Voltage	V _{CC} = 5.5V, V _I = 7V			100	μA
I _{IH}	High Level Input Current	V _{CC} = 5.5V, V _I = 2.7V			20	μA
I _{IL}	Low Level Input Current	V _{CC} = 5.5V, V _I = 0.4V			-500	μA
I _O	Output Drive Current	V _{CC} = 5.5V, V _O = 2.25V	-50	-135	-200	mA
I _{CCH}	Supply Current with Outputs High	V _{CC} = 5.5V		3.5	5	mA
I _{CCL}	Supply Current with Outputs Low	V _{CC} = 5.5V		16	27	mA

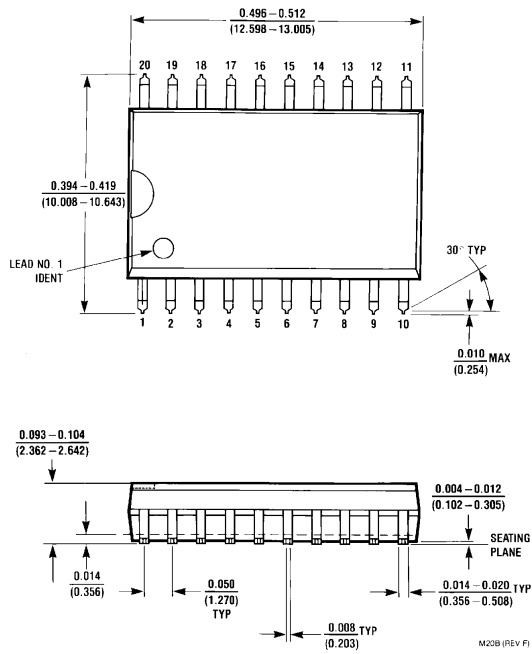
Switching Characteristics

over recommended operating free air temperature range (Note 2)

Symbol	Parameter	Conditions (Note 1)	Min	Max	Units
t _{PLH}	Propagation Delay Time Low to High Level Output	V _{CC} = 4.5V to 5.5V	1	4	ns
t _{PHL}	Propagation Delay Time High to Low Level Output	R _L = 500Ω C _L = 50 pF	1	4	ns

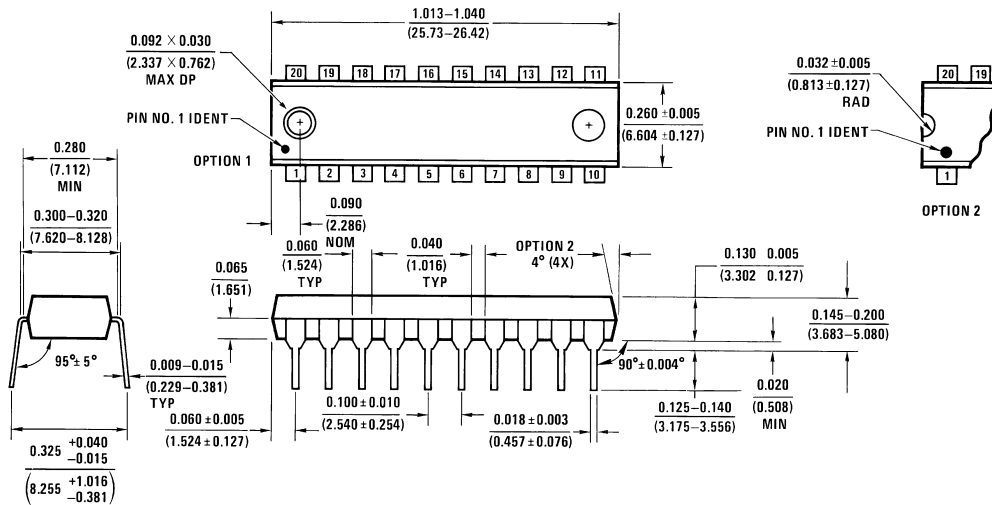
Note 2: See Section 5 for test waveforms and output load.

Physical Dimensions inches (millimeters) unless otherwise noted



M20B (REV F)

Lit. #102706



N20A (REV G)

Molded Dual-In-Line Package (N)
Order Number DM74AS1804N
Package Number N20A

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