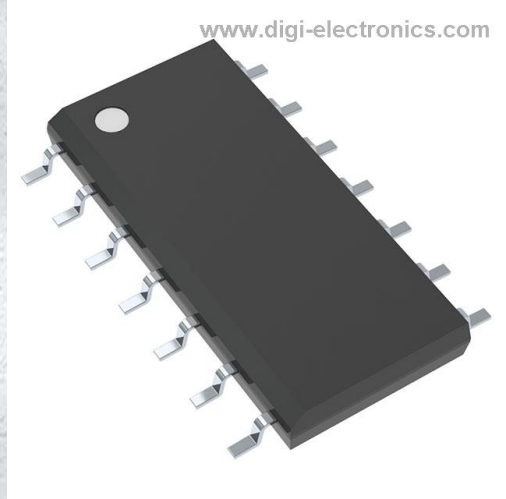
DM74AS00MX Datasheet



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DiGi Electronics Part Number	DM74AS00MX-DG
Manufacturer	onsemi
Manufacturer Product Number	DM74AS00MX
Description	IC GATE NAND 4CH 2-INP 14SOIC
Detailed Description	NAND Gate IC 4 Channel 14-SOIC

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
DM74AS00MX	onsemi
Series:	Product Status:
74AS	Obsolete
Logic Type:	Number of Circuits:
NAND Gate	4
Number of Inputs:	Features:
2	-
Voltage - Supply:	Current - Output High, Low:
4.5V ~ 5.5V	2mA, 20mA
Input Logic Level - Low:	Input Logic Level - High:
0.8V	2V
Max Propagation Delay @ V, Max CL:	Operating Temperature:
4.5ns @ 5V, 50pF	0°C ~ 70°C
Mounting Type:	Supplier Device Package:
Surface Mount	14-SOIC
Package / Case:	Base Product Number:
14-SOIC (0.154", 3.90mm Width)	74AS00

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8542.39.0001

FAIRCHILD SEMICONDUCTOR™

September 1986
Revised March 2000

DM74AS00
Quad 2-Input NAND Gate

General Description

This device contains four independent gates, each of which performs the logic NAND function.

Features

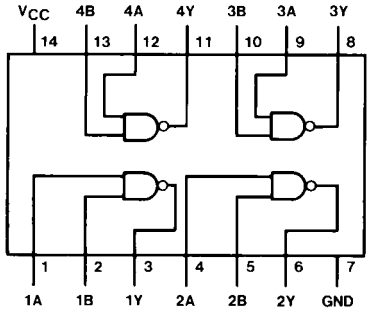
- Switching specifications at 50 pF
- Switching specifications guaranteed over full temperature and V_{CC} range
- Advanced oxide-isolated, ion-implanted Schottky TTL process
- Functionally and pin for pin compatible with Schottky, low power Schottky, and advanced low power Schottky TTL counterpart
-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

Ordering Code:

Order Number	Package Number	Package Description
DM74AS00M	M14A	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
DM74AS00N	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

$Y = \overline{AB}$

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 θ_{JA}	
N Package	84.0°C/W
M Package	114.0°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			−2	mA
I_{OL}	LOW Level Output Current			20	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°C.

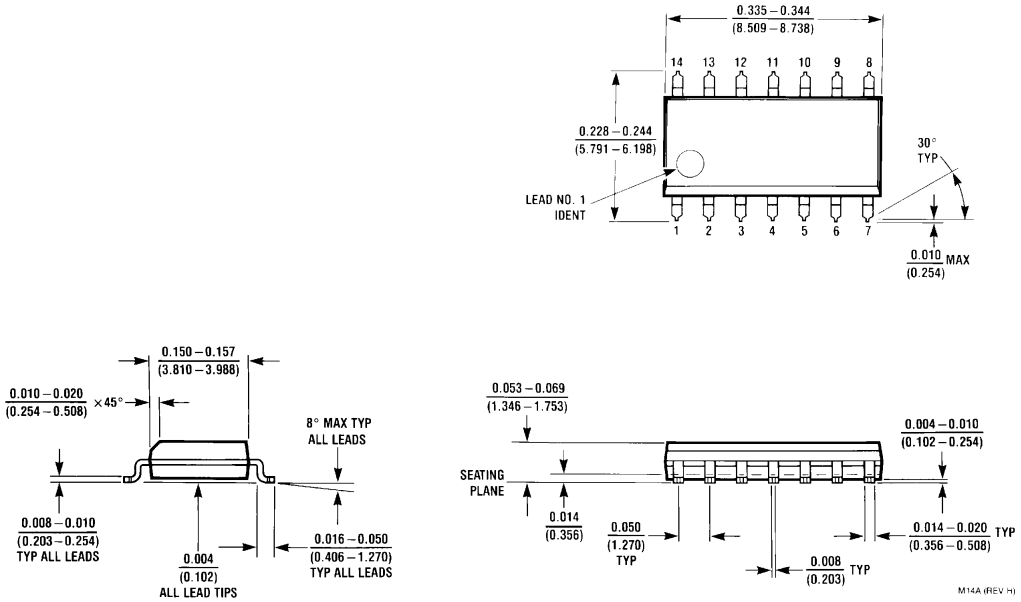
Symbol	Parameter	Conditions		Min	Typ	Max	Units
V_{IK}	Input Clamp Voltage	V_{CC} = 4.5V, I_I = −18 mA				−1.2	V
V_{OH}	HIGH Level Output Voltage	I_{OH} = −2 mA V_{CC} = 4.5V to 5.5V		V_{CC} − 2			V
V_{OL}	LOW Level Output Voltage	V_{CC} = 4.5V I_{OL} = 20 mA			0.35	0.5	V
I_I	Input Current at Max Input 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				−0.5	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	Outputs HIGH		2.2	3.2	mA
			Outputs LOW		10.8	17.4	mA

Switching Characteristics

over recommended operating free air temperature range

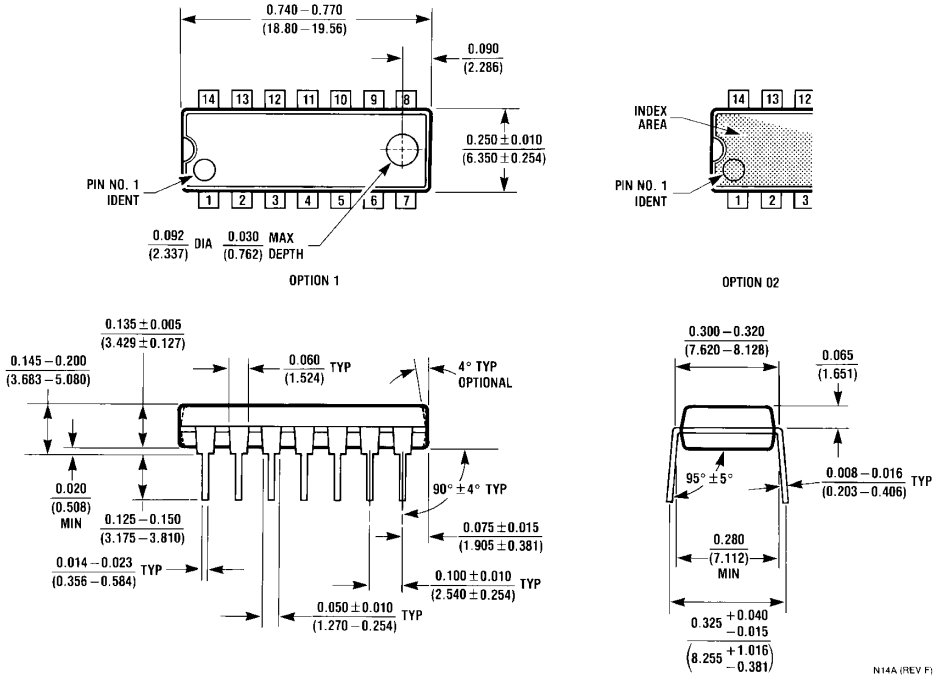
Symbol	Parameter	Conditions	Min	Max	Units
t_{PLH}	Propagation Delay Time LOW-to-HIGH Level Output	V_{CC} = 4.5V to 5.5V R_L = 500Ω C_L = 50 pF	1	4.5	ns
t_{PHL}	Propagation Delay Time HIGH-to-LOW Level Output		1	4	ns

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

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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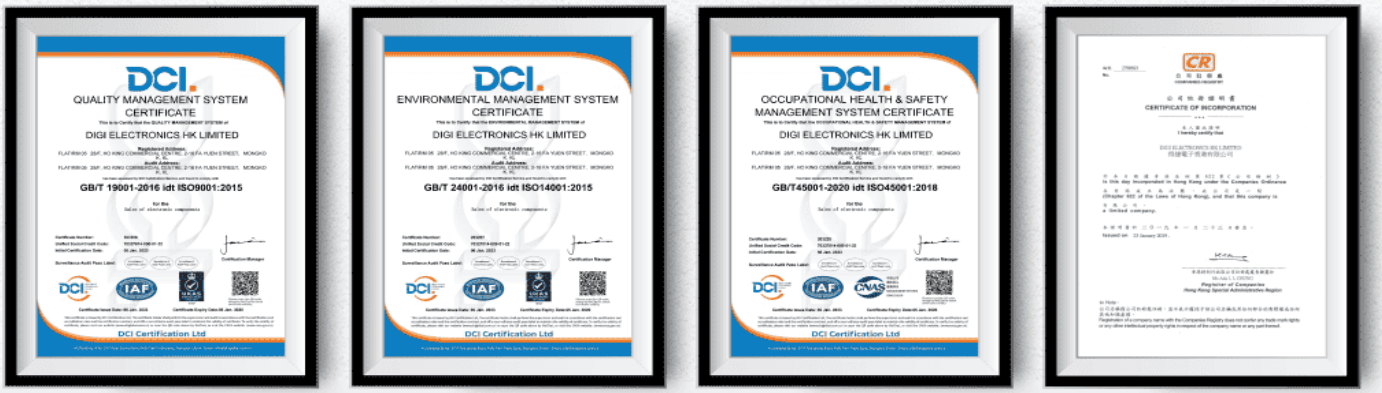

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