

DM7437

Quad 2-Input NAND Buffers

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

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All re-creations are done with the approval of the Original Component Manufacturer (OCM).

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-35835
 - Class Q Military
 - Class V Space Level
- Qualified Suppliers List of Distributors (QSLD)
 - Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OCM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

FOR REFERENCE ONLY



National Semiconductor

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5437/DM5437/DM7437 Quad 2-Input NAND Buffers

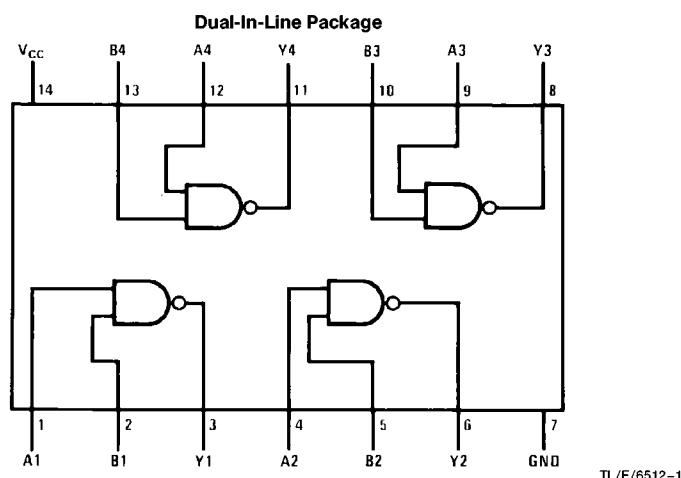
General Description

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

Features

- Alternate Military/Aerospace device (5437) is available. Contact a National Semiconductor Sales Office/Distributor for specifications.

Connection Diagram



**Order Number 5437DMQB, 5437FMQB, DM5437J, DM5437W or DM7437N
See NS Package Number J14A, N14A or W14B**

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

II = High Logic Level

Absolute Maximum Ratings (Note)

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Supply Voltage	7V
Input Voltage	5.5V
Operating Free Air Temperature Range	
DM54 and 54	−55°C to +125°C
DM74	0°C to +70°C
Storage Temperature Range	−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	DM5437			DM7437			Units
		Min	Nom	Max	Min	Nom	Max	
V_{CC}	Supply Voltage	4.5	5	5.5	4.75	5	5.25	V
V_{IH}	High Level Input Voltage	2			2			V
V_{IL}	Low Level Input Voltage			0.8			0.8	V
I_{OH}	High Level Output Current			−1.2			−1.2	mA
I_{OL}	Low Level Output Current			48			48	mA
T_A	Free Air Operating Temperature	−55		125	0		70	°C

Electrical Characteristics

over recommended operating free air temperature range (unless otherwise noted)

Symbol	Parameter	Conditions		Min	Typ (Note 1)	Max	Units
V_I	Input Clamp Voltage	$V_{CC} = \text{Min}$, $I_I = -12 \text{ mA}$				−1.5	V
V_{OH}	High Level Output Voltage	$V_{CC} = \text{Min}$, $I_{OH} = \text{Max}$ $V_{IL} = \text{Max}$		2.4	3.3		V
V_{OL}	Low Level Output Voltage	$V_{CC} = \text{Min}$, $I_{OL} = \text{Max}$ $V_{IH} = \text{Min}$			0.2	0.4	V
I_I	Input Current @ Max Input Voltage	$V_{CC} = \text{Max}$, $V_I = 5.5V$				1	mA
I_{IH}	High Level Input Current	$V_{CC} = \text{Max}$, $V_I = 2.4V$				40	μA
I_{IL}	Low Level Input Current	$V_{CC} = \text{Max}$, $V_I = 0.4V$				−1.6	mA
I_{OS}	Short Circuit Output Current	$V_{CC} = \text{Max}$ (Note 2)	DM54	−20		−70	mA
			DM74	−18		−70	
I_{CCH}	Supply Current with Outputs High	$V_{CC} = \text{Max}$			9	15.5	mA
I_{CCL}	Supply Current with Outputs Low	$V_{CC} = \text{Max}$			34	54	mA

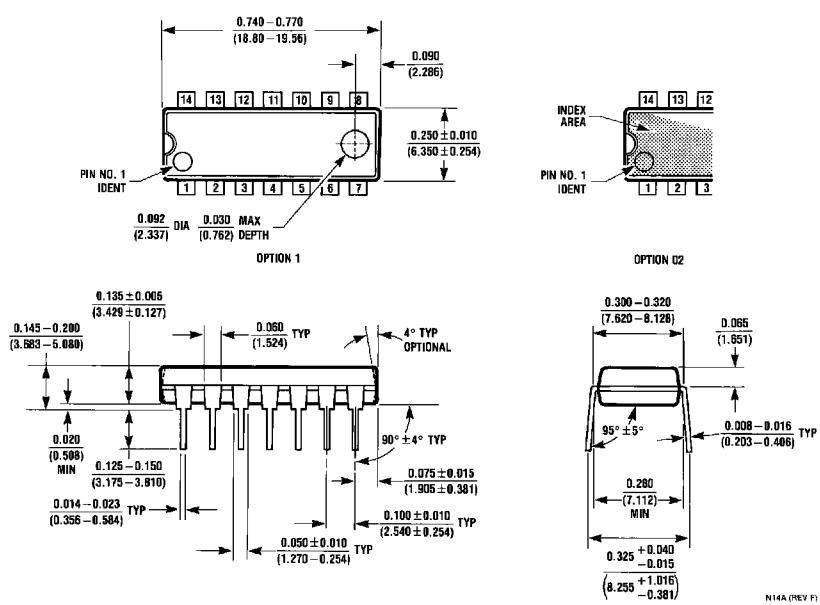
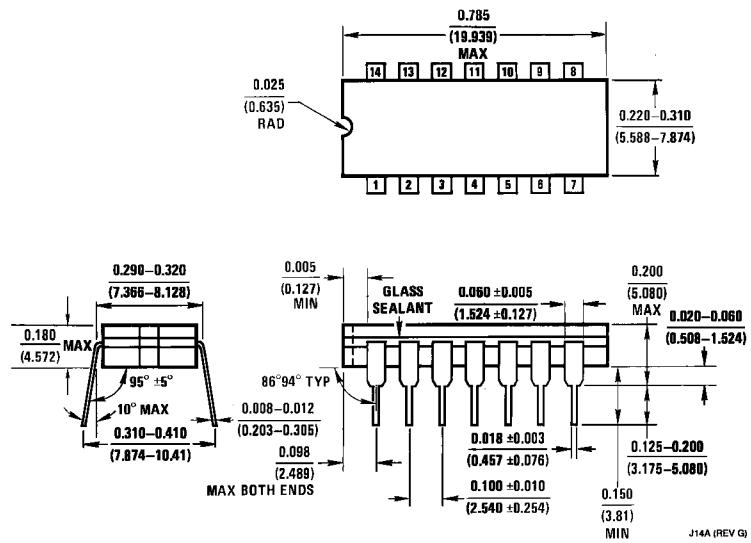
Switching Characteristics at $V_{CC} = 5V$ and $T_A = 25^\circ\text{C}$ (See Section 1 for Test Waveforms and Output Load)

Symbol	Parameter	Conditions	Min	Max	Units
t_{PLH}	Propagation Delay Time Low to High Level Output	$C_L = 45 \text{ pF}$ $R_L = 133\Omega$		22	ns
t_{PHL}	Propagation Delay Time High to Low Level Output			15	ns

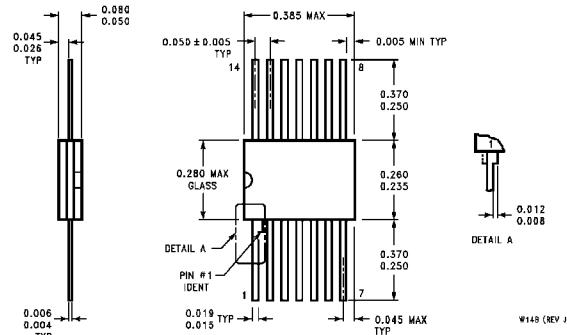
Note 1: All typicals are at $V_{CC} = 5V$, $T_A = 25^\circ\text{C}$.

Note 2: Not more than one output should be shorted at a time.

Physical Dimensions inches (millimeters)



Physical Dimensions inches (millimeters) (Continued)



14-Lead Ceramic Flat Package (W)
Order Number 5437FMQB or DM5437W
NS Package Number W14B

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2. A critical component is 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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