

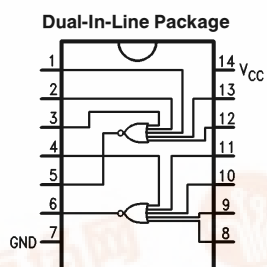
April 1992

DM54LS260/DM74LS260 Dual 5-Input NOR Gate

General Description

This device contains two individual five input gates, each of which perform the logic NOR function.

Connection Diagram



TL/F/9824-1

Order Number DM54LS260J, DM54LS260W,
DN54LS260E, DM74LS260M or DM74LS260N
See NS Package Number E20A, J14A, M14A, N14A or W14B

Truth Table

$$A + B + C + D + E = Y$$

Inputs					Outputs
A	B	C	D	E	Y
L	L	L	L	L	H
X	X	X	X	H	L
X	X	X	H	X	L
X	X	H	X	X	L
X	H	X	X	X	L
H	X	X	X	X	L



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	7V
Operating Free Air Temperature Range	
DM54LS	−55°C to +125°C
DM74LS	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	DM54LS260			DM74LS260			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			0.7			0.8	V
I _{OH}	High Level Output Current			−0.4			−0.4	mA
I _{OL}	Low Level Output Current			4			8	mA
T _A	Free Air Operating Temperature	−55		125	0		70	°C

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

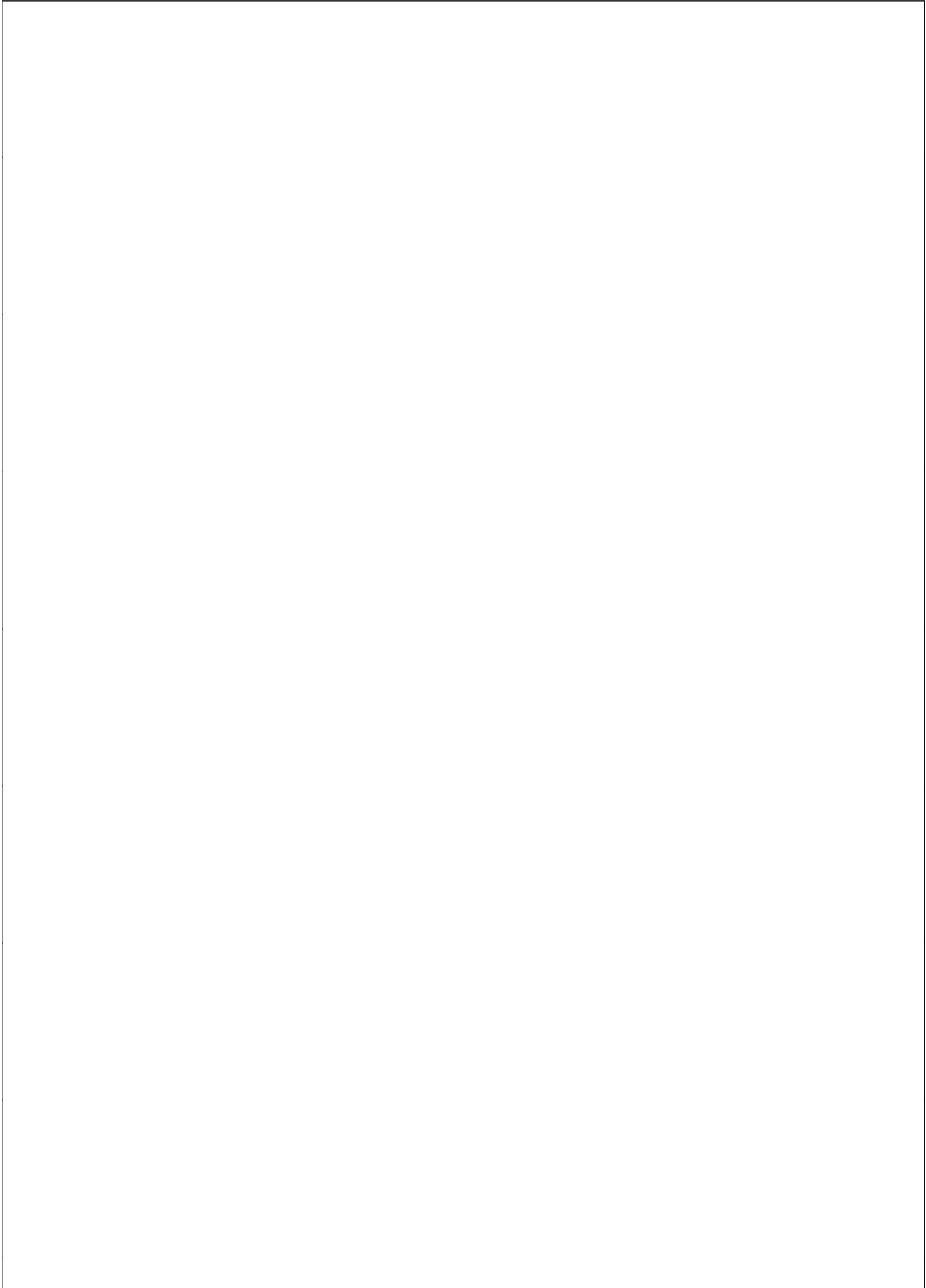
Symbol	Parameter	Conditions	Min	Typ (Note 1)	Max	Units
V _I	Input Clamp Voltage	V _{CC} = Min, I _I = −18 mA			−1.5	V
V _{OH}	High Level Output Voltage	V _{CC} = Min, I _{OH} = Max V _{IL} = Max	DM54 2.5 DM74 2.7			V
V _{OL}	Low Level Output Voltage	V _{CC} = Min, I _{OL} = Max V _{IH} = Min	DM54 DM74		0.4 0.5	V
		I _{OL} = 4 mA, V _{CC} = Min	DM74		0.4	
I _I	Input Current @ Max Input Voltage	V _{CC} = Max, V _I = 7V V _I = 10V	DM54		0.1	mA
I _{IH}	High Level Input Current	V _{CC} = Max, V _I = 2.7V			20	μA
I _{IL}	Low Level Input Current	V _{CC} = Max, V _I = 0.4V	DM54 DM74		−0.40 −0.36	mA
I _{OS}	Short Circuit Output Current	V _{CC} = Max (Note 2)	DM54 DM74	−20 −20	−100 −100	mA
I _{CCH}	Supply Current with Outputs High	V _{CC} = Max, V _{IN} = GND			4.0	mA
I _{CCL}	Supply Current with Outputs Low	V _{CC} = Max, V _{IN} = Open			5.5	mA

Note 1: All typicals are at V_{CC} = 5V, T_A = 25°C.

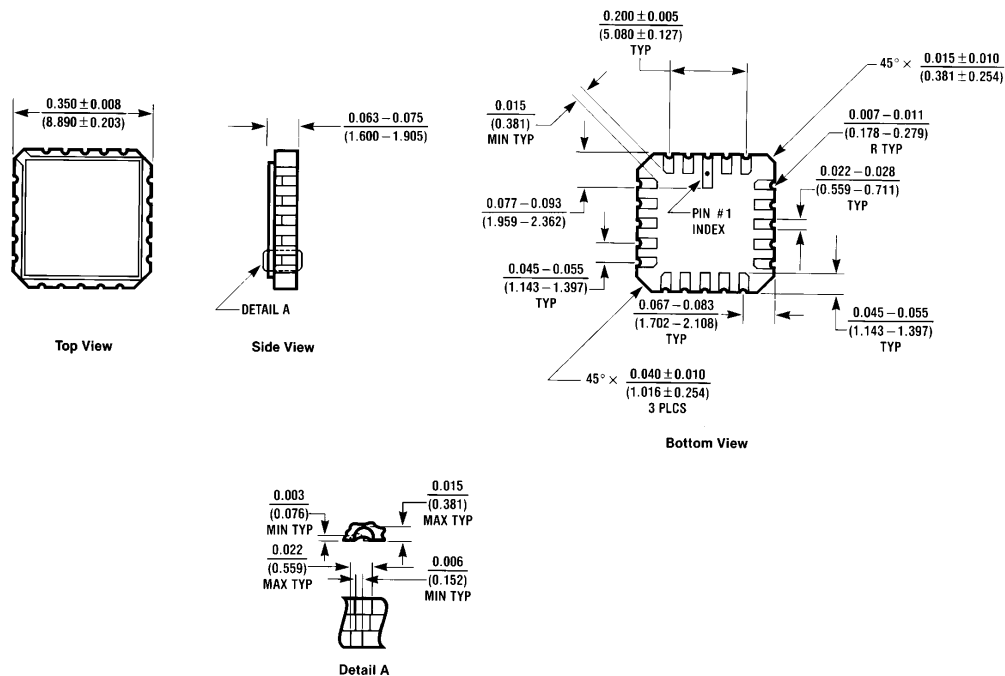
Note 2: Not more than one output should be shorted at a time, and the duration should not exceed one second.

Switching Characteristics V_{CC} = +5V, T_A = +25°C

Symbol	Parameter	R _L = 2 kΩ, C _L = 15 pF		Units
		Min	Max	
t _{PLH}	Propagation Delay Time Low to High Level Output		10	ns
t _{PHL}	Propagation Delay Time High to Low Level Output		12	ns

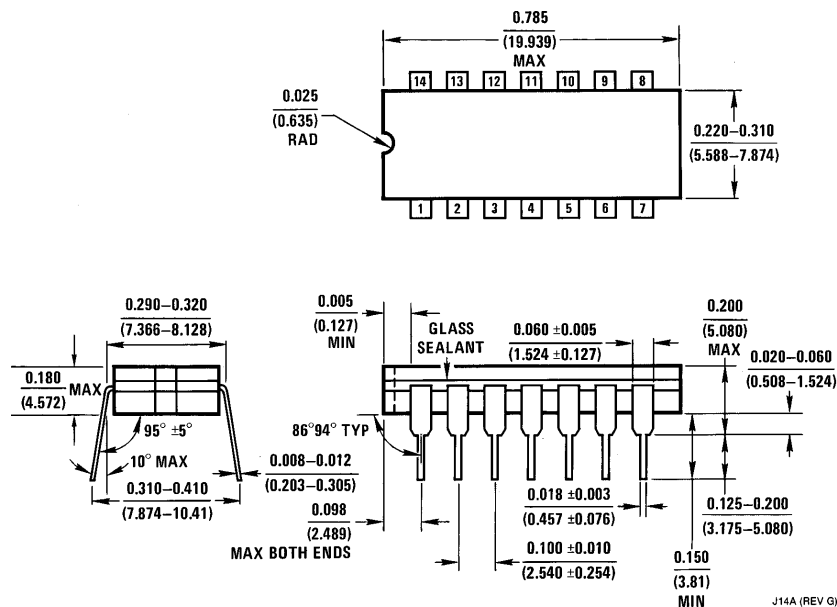


Physical Dimensions inches (millimeters)



Ceramic Leadless Chip Carrier Package (E)
Order Number DM54LS260E
NS Package Number E20A

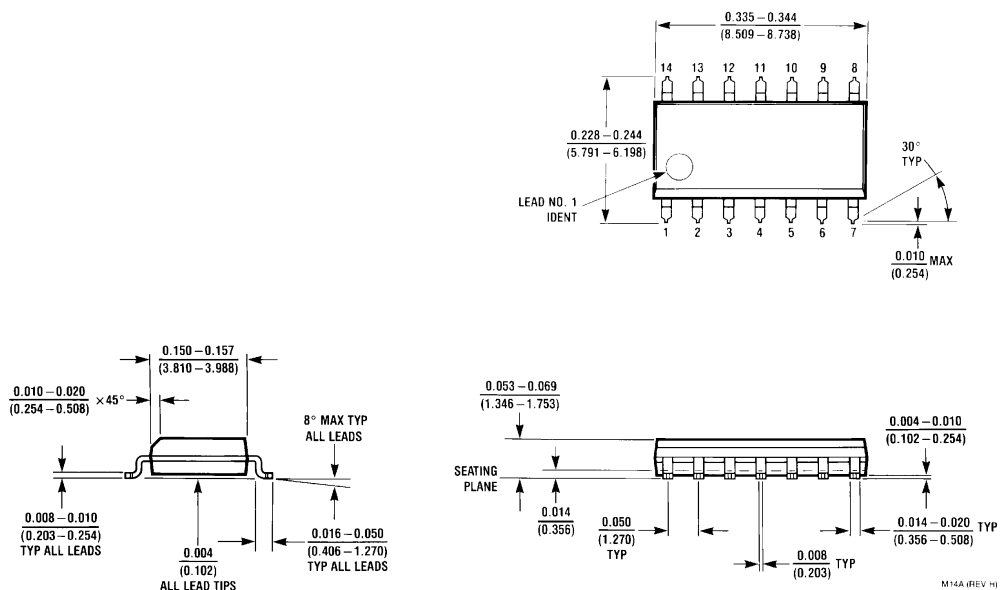
E20A (REV D)



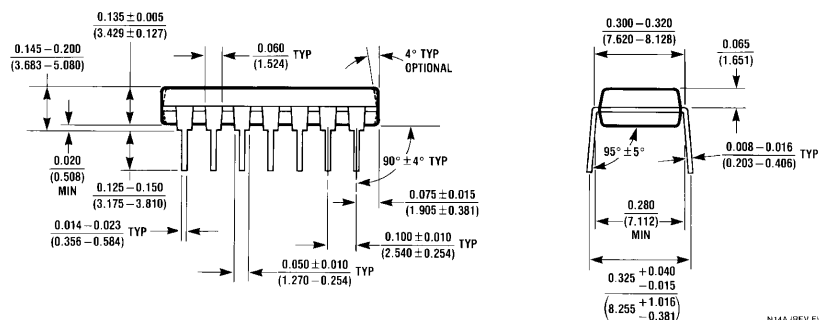
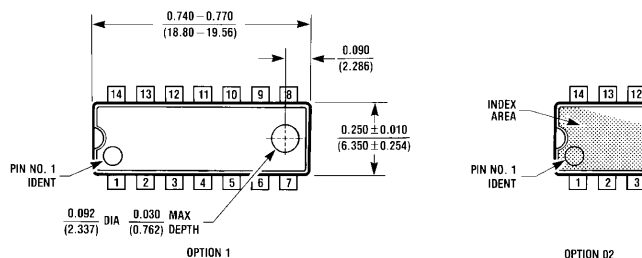
14-Lead Ceramic Dual-In-Line Package (J)
Order Number DM54LS260J
NS Package Number J14A

J14A (REV G)

Physical Dimensions inches (millimeters) (Continued)

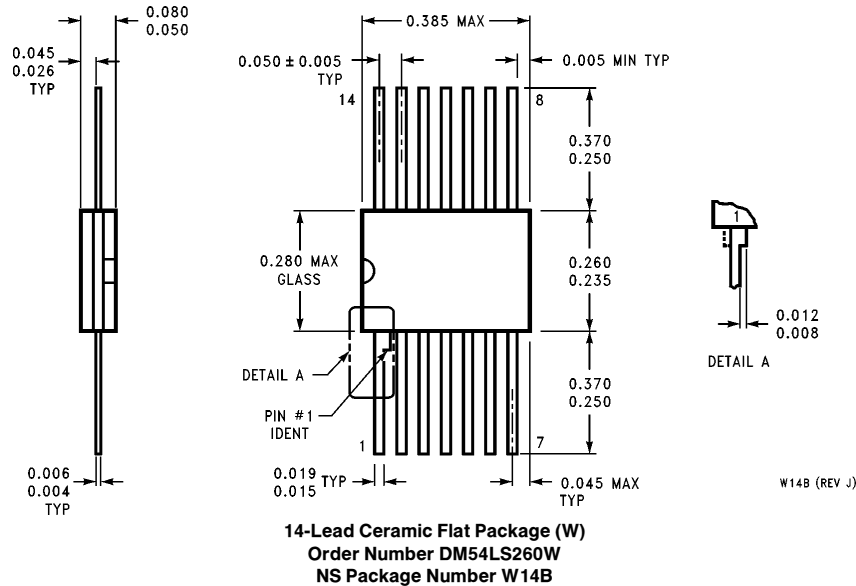


14-Lead Small Outline Molded Package (M)
Order Number DM74LS260M
NS Package Number M14A



14-Lead Molded Dual-In-Line Package (N)
Order Number DM74LS260N
NS Package Number N14A

Physical Dimensions inches (millimeters) (Continued)



LIFE SUPPORT POLICY

NATIONAL'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF NATIONAL SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
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.



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

National Semiconductor Europe
Fax: (+49) 0-180-530 85 86
Email: cnjwge@tevm2.nsc.com
Deutsch Tel: (+49) 0-180-530 85 85
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: 81-043-299-2309
Fax: 81-043-299-2408