

DM7402 Quad 2-Input NOR Gates March 1998

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Absolute	Maximum	Ratings	(Note 1)
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Supply Voltage	7V
Input Voltage	5.5V
Operating Free Air Temperature Range	

DM54 and 54 DM74 Storage Temperature Range -55°C to +125°C 0°C to +70°C -65°C to +150°C

## **Recommended Operating Conditions**

Symbol	Parameter	DM5402		DM7402			Units	
		Min	Nom	Max	Min	Nom	Max	
V <sub>cc</sub>	Supply Voltage	4.5	5	5.5	4.75	5	5.25	V
V <sub>IH</sub>	High Level Input Voltage	2			2			V
VIL	Low Level Input Voltage			0.8			0.8	V
I <sub>он</sub>	High Level Output Current			-0.4			-0.4	mA
I <sub>OL</sub>	Low Level Output Current			16			16	mA
T <sub>A</sub>	Free Air Operating Temperature	-55		125	0		70	°C

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" 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 (unless otherwise noted)

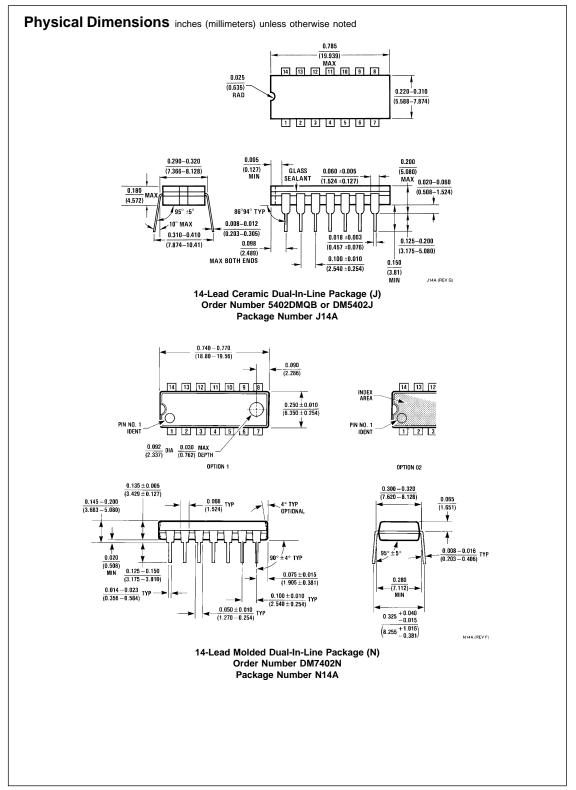
Symbol	Parameter	Condit	ions	Min	Typ (Note 2)	Max	Units
VI	Input Clamp Voltage	V <sub>CC</sub> = Min, I <sub>I</sub> =	–12 mA		(	-1.5	V
V <sub>он</sub>	High Level Output	V <sub>CC</sub> = Min, I <sub>OH</sub>	= Max	2.4	3.4		V
	Voltage	V <sub>IL</sub> = Max	V <sub>IL</sub> = Max				
V <sub>OL</sub>	Low Level Output	V <sub>CC</sub> = Min, I <sub>OL</sub>	V <sub>CC</sub> = Min, I <sub>OL</sub> = Max		0.2	0.4	V
	Voltage	V <sub>IH</sub> = Min					
l <sub>i</sub>	Input Current @ Max	$V_{CC} = Max, V_1 = 5.5V$				1	mA
	Input Voltage						
IIH	High Level Input Current	$V_{\rm CC}$ = Max, $V_{\rm I}$ = 2.4V				40	μA
I <sub>IL</sub>	Low Level Input Current	V <sub>CC</sub> = Max, V <sub>I</sub>	$V_{CC} = Max, V_I = 0.4V$			-1.6	mA
I <sub>os</sub>	Short Circuit	V <sub>CC</sub> = Max	DM54	-20		-55	mA
	Output Current	(Note 3)	DM74	-18		-55	1
I <sub>CCH</sub>	Supply Current with	V <sub>CC</sub> = Max			8	16	mA
	Outputs High						
I <sub>CCL</sub>	Supply Current with	V <sub>CC</sub> = Max			14	27	mA
	Outputs Low						

## **Switching Characteristics**

at $V_{CC}$ = 5V and $T_A$ = 25°C (for Test Waveforms and Output Load)							
Symbol	Parameter	Conditions	Min	Max	Units		
t <sub>PLH</sub>	Propagation Delay Time	C <sub>L</sub> = 15 pF		22	ns		
	Low to High Level Output	$R_{L} = 400\Omega$					
t <sub>PHL</sub>	Propagation Delay Time			15	ns		
	High to Low Level Output						

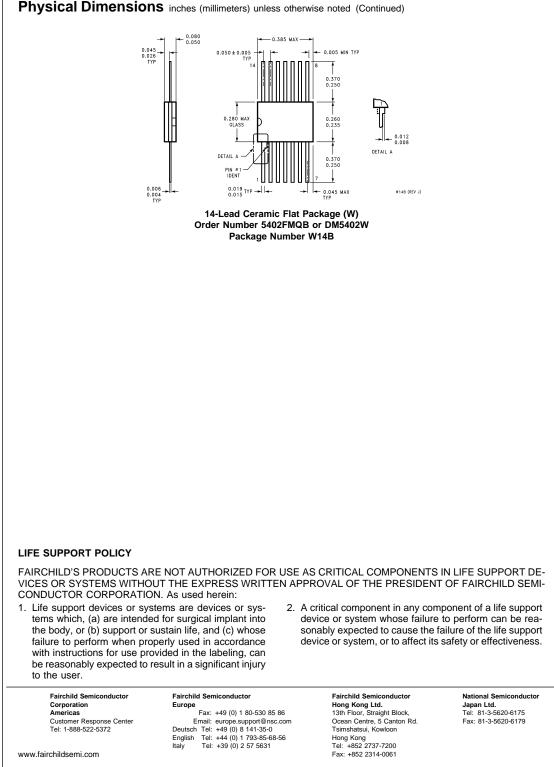
Note 2: All typicals are at V<sub>CC</sub> = 5V, T<sub>A</sub> = 25°C.

Note 3: Not more than one output should be shorted at a time.



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