



# Level Translators/Buffers

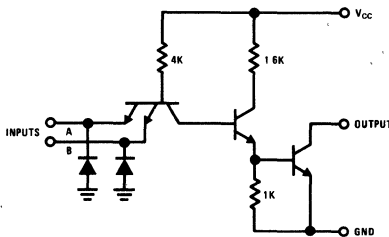
**DM7810/DM8810 quad 2-input TTL-MOS interface gate**  
**DM7811/DM8811 quad 2-input TTL-MOS interface gate**  
**DM7812/DM8812 TTL-MOS hex inverter**

## general description

These Series 54/74 compatible gates are high output voltage versions of the DM5401/DM7401 (SN5401/SN7401), DM5403/DM7403 (SN5403/SN7403), and DM5405/DM7405 (SN5405/SN7405). Their open-collector outputs may be "pulled-up" to +14 volts in the logical "1" state thus providing guaranteed interface between TTL and MOS logic levels.

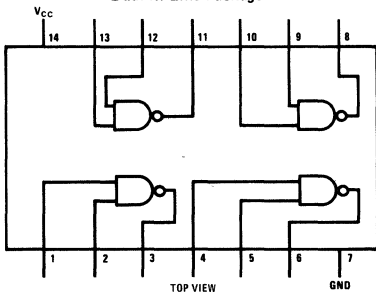
In addition the devices may be used in applications where it is desirable to drive low current relays or lamps that require up to 14 volts.

## schematic and connection diagrams

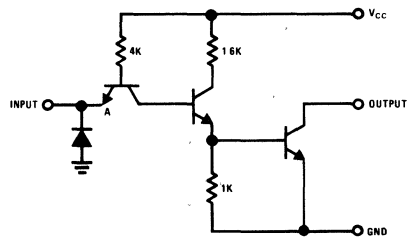


DM7810/DM8810, DM7811/DM8811

Dual-In-Line Package

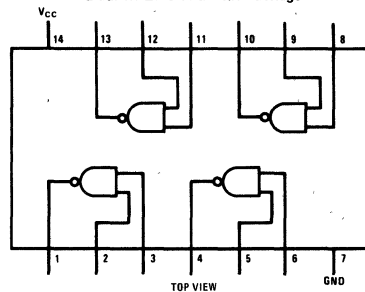


DM7810/DM8810

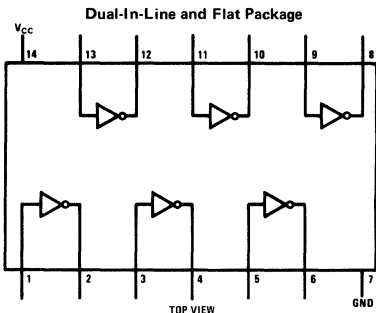


DM7812/DM8812

Dual-In-Line and Flat Package



DM7811/DM8811



DM7812/DM8812

ORDER NUMBER	SEE PKG	ORDER NUMBER	SEE PKG	ORDER NUMBER	SEE PKG
DM7810J	16	DM7810N	22	DM7811W	27
DM7811J	16	DM7811N	22	DM7812W	27
DM7812J	16	DM7812N	22	DM8811W	27
DM8810J	16	DM8810N	22	DM8812W	27
DM8811J	16	DM8811N	22		
DM8812J	16	DM8812N	22		

DM7810/DM8810,  
DM7811/DM8811, DM7812/DM8812

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**absolute maximum ratings**

V <sub>CC</sub>	7V
Input Voltage	5.5V
Output Voltage	14V
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10 seconds)	300°C

**operating conditions**

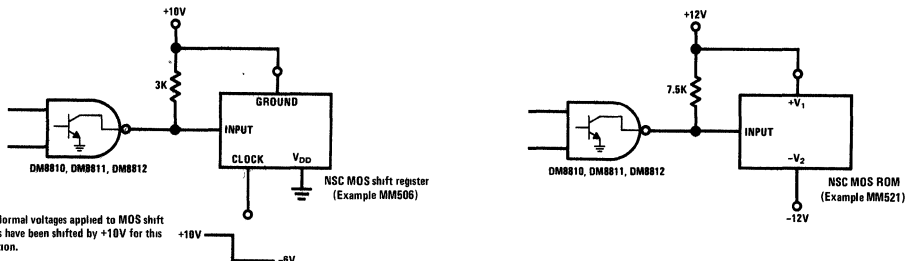
	MIN	MAX	UNITS
Supply Voltage (V <sub>CC</sub> )			
DM78XX	4.75	5.25	V
DM88XX	4.75	5.25	V
Temperature (T <sub>A</sub> )			
DM78XX	-55	+125	°C
DM88XX	0	+70	°C

**electrical characteristics** (Note 1)

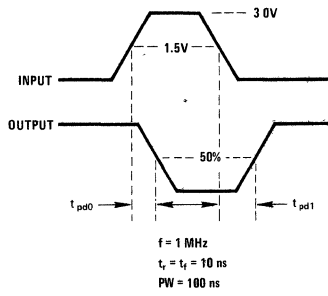
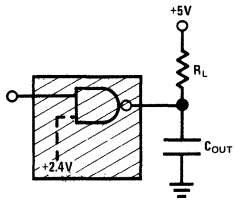
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input Diode Clamp Voltage	V <sub>CC</sub> = 5.0V, T <sub>A</sub> = 25°C I <sub>IN</sub> = -12 mA			-1.5	V
Logical "1" Input Voltage	V <sub>CC</sub> = Min	2.0			V
Logical "0" Input Voltage	V <sub>CC</sub> = Min			0.8	V
Logical "1" Output Current	V <sub>CC</sub> = Min, V <sub>IN</sub> = 0.8V V <sub>OUT</sub> = 10V, V <sub>IN</sub> = 0.0V			250 40	μA μA
Logical "1" Output Breakdown Voltage	V <sub>CC</sub> = Min, V <sub>IN</sub> = 0V I <sub>OUT</sub> = 1 mA	14			V
Logical "0" Output Voltage	V <sub>CC</sub> = Min, V <sub>IN</sub> = 2.0V I <sub>OUT</sub> = 16 mA			0.4	V
Logical "1" Input Current	V <sub>CC</sub> = Max, V <sub>IN</sub> = 2.4V			40	μA
Logical "1" Input Current	V <sub>CC</sub> = Max, V <sub>IN</sub> = 5.5V			1	mA
Logical "0" Input Current	V <sub>CC</sub> = Max, V <sub>IN</sub> = 0.4V			-1.6	mA
Supply Current – Logical "0" (Each Gate)	V <sub>CC</sub> = Max, V <sub>IN</sub> = 5.0V		3.0	5.1	mA
Supply Current – Logical "1" (Each Gate)	V <sub>CC</sub> = Max, V <sub>IN</sub> = 0V		1.0	1.8	mA
Propagation Delay Time to a Logical "0", t <sub>pd0</sub>	V <sub>CC</sub> = 5.0V, T <sub>A</sub> = 25°C C <sub>OUT</sub> = 15 pF, R <sub>L</sub> = 1k	4	12	18	ns
Propagation Delay Time to a Logical "1", t <sub>pd1</sub>	V <sub>CC</sub> = 5.0V, T <sub>A</sub> = 25°C C <sub>OUT</sub> = 15 pF, R <sub>L</sub> = 1k	18	29	45	ns

**Note 1:** Unless otherwise specified min/max limits apply across the -55°C to +125°C temperature range for the DM78XX and across the 0°C to 70°C range for the DM88XX. All typicals are given for V<sub>CC</sub> = 5.0V and T<sub>A</sub> = 25°C.

**typical applications**



# ac test circuit and switching time waveforms



DM7810/DM8810,  
DM7811/DM8811, DM7812/DM8812