



Interface Gates

DM8810 quad two-input TTL-MOS interface gate

DM8811 quad two-input TTL-MOS interface gate

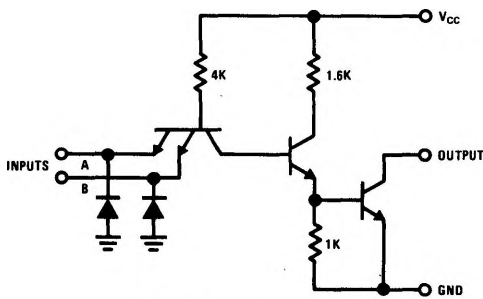
DM8812 TTL-MOS hex inverter

general description

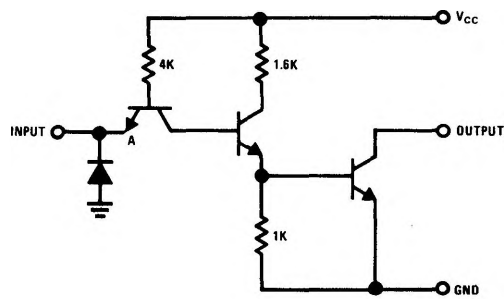
These Series 74 compatible gates are high output voltage versions of the DM7401 (SN7401), DM7403 (SN7403), and DM7405 (SN7405). Their open-collector outputs may be "pulled-up" to +14 volts in the logical "1" state thus providing guaranteed interface between TTL and MOS logic levels.

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.

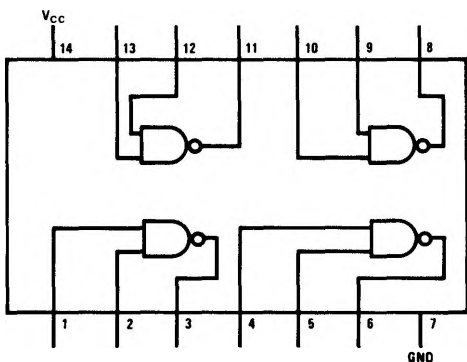
schematic and connection diagrams



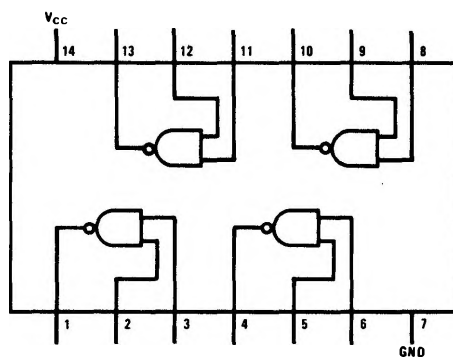
DM8810 and DM8811



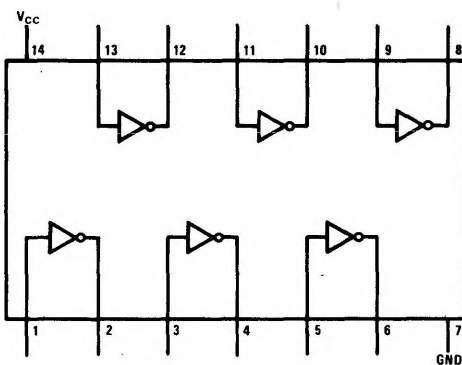
DM8812



DM8810



DM8811



DM8812

absolute maximum ratings

V_{CC}	7V
Input Voltage	5.5V
Output Voltage	14.V
Operating Temperature Range	0°C to 70°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10 sec)	300°C

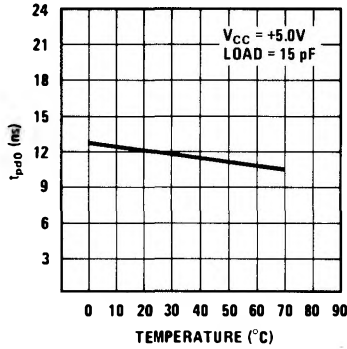
electrical characteristics (Note 1)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input Diode Clamp Voltage	$V_{CC} = 5.0V, T_A = 25^\circ C$ $I_{IN} = -12 \text{ mA}$			-1.5	V
Logical "1" Input Voltage	$V_{CC} = 4.75V$	2.0			V
Logical "0" Input Voltage	$V_{CC} = 4.75V$			0.8	V
Logical "1" Output Current	$V_{CC} = 4.75V \left\{ \begin{array}{l} V_{IN} = 0.8V \\ V_{OUT} = 10V \end{array} \right. \left\{ \begin{array}{l} V_{IN} = 0.0V \end{array} \right.$			250 40	μA μA
Logical "1" Output Breakdown Voltage	$V_{CC} = 4.75V, V_{IN} = 0V$ $I_{OUT} = 1 \text{ mA}$	14			V
Logical "0" Output Voltage	$V_{CC} = 4.75V, V_{IN} = 2.0V$ $I_{OUT} = 16 \text{ mA}$			0.4	V
Logical "1" Input Current	$V_{CC} = 5.25V, V_{IN} = 2.4V$			40	μA
Logical "1" Input Current	$V_{CC} = 5.25V, V_{IN} = 5.5V$			1	mA
Logical "0" Input Current	$V_{CC} = 5.25V, V_{IN} = 0.4V$			-1.6	mA
Supply Current – Logical "0" (Each Gate)	$V_{CC} = 5.25V, V_{IN} = 5.0V$		3.0	5.1	mA
Supply Current – Logical "1" (Each Gate)	$V_{CC} = 5.25V, V_{IN} = 0V$		1.0	1.8	mA
Propagation Delay Time to a Logical "0", t_{pd0}	$V_{CC} = 5.0V, T_A = 25^\circ C$ $C_{OUT} = 15 \text{ pF}, R_L = 1k$	4	12	18	ns
Propagation Delay Time to a Logical "1", t_{pd1}	$V_{CC} = 5.0V, T_A = 25^\circ C$ $C_{OUT} = 15 \text{ pF}, R_L = 1k$	18	29	45	ns

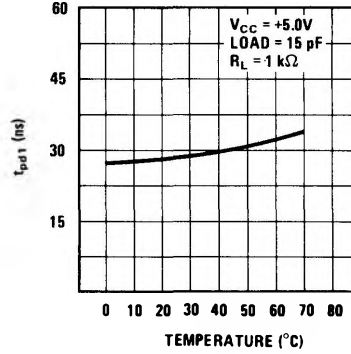
Note 1: Min/Max units apply across the guaranteed temperature range of 0°C to 70°C unless otherwise specified. All typicals are given for $V_{CC} = 5.0V$ and $T_A = 25^\circ C$.

typical performance characteristics

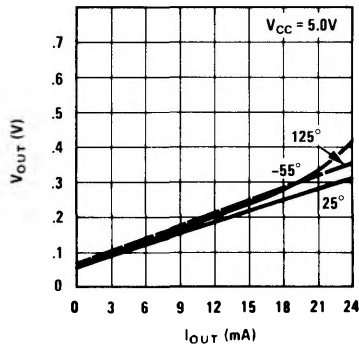
Transition Time to a Logical "0" (t_{pd0}) vs Temperature



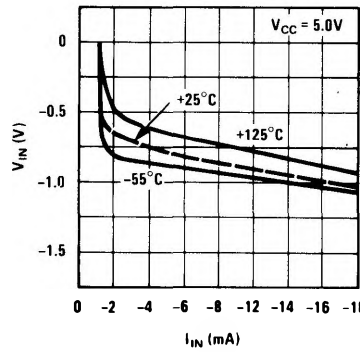
Transition Time to a Logical "1" (t_{pd1}) vs Temperature



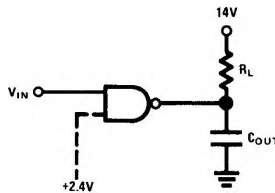
V_{OUT} vs I_{OUT} Logical "0"



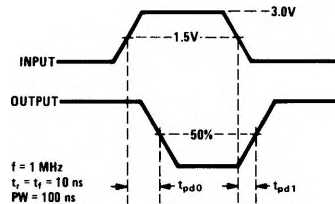
Input Clamp Diode Characteristics



ac test circuit



switching time waveform



typical applications

