MC10H423

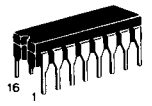
TRIPLE-3 INPUT BUS DRIVER WITH ENABLE

The MC10H423 is a triple 3 Input Bus Driver with a common enable.

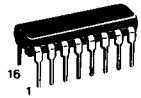
The MC10H423 consists of three NOR gates designed for bus driving applications on card or between cards. Output low logic levels are specified with V_{OL} = −2.1 Vdc so that the bus may be terminated to −2.0 Vdc. The gate output, when low, appears as a high impedance to the bus, because the output emitter-followers of the MC10H423 are "turned off." This eliminates discontinuities in the characteristic impedance of the bus.

The V_{OH} level is specified when driving a 25-ohm load terminated to −2.0 Vdc, the equivalent of a 50-ohm bus terminated at both ends. Although 25 ohms is the lowest characteristic impedance that can be driven by the MC10H423, higher impedance values may be used with this part. A typical 50 ohm bus is shown in Figure 1.

- Propagation Delay, 1.5 ns Typical
- Voltage Compensated
- Improved Noise Margin 150 mV (Over Operating Voltage and Temperature Range)
- MECL 10K-Compatible



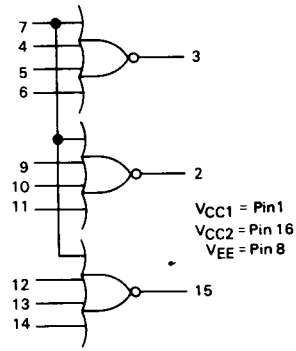
L SUFFIX
CERAMIC PACKAGE
CASE 620



P SUFFIX
PLASTIC PACKAGE
CASE 648

FN SUFFIX
PLCC
CASE 775

LOGIC DIAGRAM



MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Power Supply (V_{CC} = 0)	V_{EE}	-8.0 to 0	Vdc
Input Voltage (V_{CC} = 0)	V_I	0 to V_{EE}	Vdc
Output Current — Continuous — Surge	I_{out}	50 100	mA
Operating Temperature Range	T_A	0 to +75	°C
Storage Temperature Range — Plastic — Ceramic	T_{stg}	-55 to +150 -55 to +165	°C °C

ELECTRICAL CHARACTERISTICS (V_{EE} = −5.2 V ±5%) (See Note)

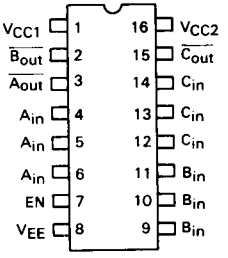
Characteristic	Symbol	0° Min	0° Max	25° Min	25° Max	75° Min	75° Max	Unit
Power Supply Current	I_E	—	60	—	56	—	60	mA
Input Current High Pins 4,5,6,9,10, 11,12,13,14 Pin 7	I_{inH}	 — —	 495 765	 — —	 310 475	 — —	 310 475	μA
Input Current Low	I_{inL}	0.5	—	0.5	—	0.3	—	μA
High Output Voltage	V_{OH}	−1.02	−0.84	−0.98	−0.81	−0.92	−0.735	Vdc
Low Output Voltage	V_{OL}	−2.1	−2.03	−2.1	−2.03	−2.1	−2.03	Vdc
High Input Voltage	V_{IH}	−1.17	−0.84	−1.13	−0.81	−1.07	−0.735	Vdc
Low Input Voltage	V_{IL}	−1.95	−1.48	−1.95	−1.48	−1.95	−1.45	Vdc

AC PARAMETERS

Propagation Delay Pin 7 Only Exclude Pin 7	t_{pd}	 0.95 0.7	 1.85 1.45	 1.0 0.75	 2.0 1.6	 1.1 0.8	 2.1 1.7	ns
Rise Time	t_r	0.55	2.0	0.55	2.1	0.6	2.2	ns
Fall Time	t_f	0.55	2.0	0.55	2.1	0.6	2.2	ns

NOTE:
Each MECL 10H series circuit has been designed to meet the dc specifications shown in the test table, after thermal equilibrium has been establkished. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 lfpm is maintained. Outputs are terminated through a 50-ohm resistor to −2.1 volts.

DIP PIN ASSIGNMENT



Pin assignment is for Dual-in-line Package.
For PLCC pin assignment, see tables on page 1-35.

FIGURE 1 — 50-OHM BUS DRIVER (25-OHM LOAD)