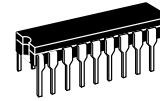


Dual Bus Driver/Receiver with 4-to-1 Output Multiplexers

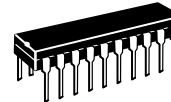
MC10H332

The MC10H332 is a Dual Bus Driver/Receiver with four-to-one output multiplexers. These multiplexers have common selects and output enable. When disabled, (OE = high) the bus outputs go to -2.0 V. The parameters specified are with 25 Ω loading on the bus drivers and 50 Ω loads on the receivers.

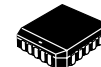
- Propagation Delay, 1.5 ns Typical Data-to-Output
- Improved Noise Margin 150 mV (Over Operating Voltage and Temperature Range)
- Voltage Compensated
- MECL 10K-Compatible



L SUFFIX
CERAMIC PACKAGE
CASE 732-03



P SUFFIX
PLASTIC PACKAGE
CASE 738-03



FN SUFFIX
PLCC
CASE 775-02

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 |

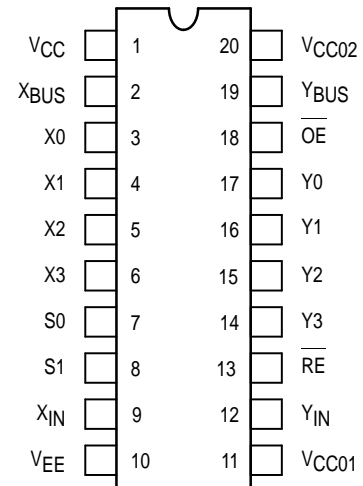
ELECTRICAL CHARACTERISTICS ($V_{EE} = -5.2 \text{ V} \pm 5\%$) (See Note)

| Characteristic | Symbol | 0° | | 25° | | 75° | | Unit |
|---|-----------|-------|-------------------|-------|-------------------|-------|-------------------|---------------|
| | | Min | Max | Min | Max | Min | Max | |
| Power Supply Current | I_E | — | 115 | — | 110 | — | 115 | mA |
| Input Current High Pins 3,4,5,6,14, 15,16,17 Pins 7,8 Pins 13, 18 | I_{inH} | — | 667 437 456 | — | 417 273 285 | — | 417 273 285 | 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} | -1.95 | -1.63 | -1.95 | -1.63 | -1.95 | -1.60 | 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 Data-to-Bus Output Select-to-Bus — Output | t_{pd} | 0.8 | 3.0 | 0.8 | 3.0 | 0.8 | 3.2 | ns |
| OE-to-Bus Output | | 0.8 | 3.4 | 0.8 | 3.4 | 0.8 | 3.8 | |
| Bus-to-Receiver | | 0.8 | 2.4 | 0.8 | 2.4 | 0.8 | 2.6 | |
| Bus-to-Receiver | | 0.8 | 2.1 | 0.8 | 2.1 | 0.8 | 2.4 | |
| Select-to-Receiver | | 1.8 | 4.5 | 1.8 | 4.5 | 1.8 | 5.0 | |
| RE-to-Receiver | | 0.8 | 2.2 | 0.8 | 2.2 | 0.8 | 2.5 | |
| Data-to-Receiver | | 1.3 | 4.0 | 1.3 | 4.0 | 1.3 | 4.5 | |
| Rise Time | t_r | 0.5 | 2.0 | 0.5 | 2.0 | 0.5 | 2.1 | ns |
| Fall Time | t_f | 0.5 | 2.0 | 0.5 | 2.0 | 0.5 | 2.1 | ns |

DIP & PLCC PIN ASSIGNMENT



Pin assignment is for Dual-in-Line Package. For PLCC pin assignment, see the Pin Conversion Tables on page 6-11 of the Motorola MECL Data Book (DL122/D).

NOTE:

Each MECL 10H series circuit has been designed to meet the dc specifications shown in the test table, after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 lfm is maintained. Receiver outputs are terminated through a 50-ohm resistor to -2.0 volts dc. Bus outputs are terminated through a 25-ohm resistor to -2.0 volts dc.



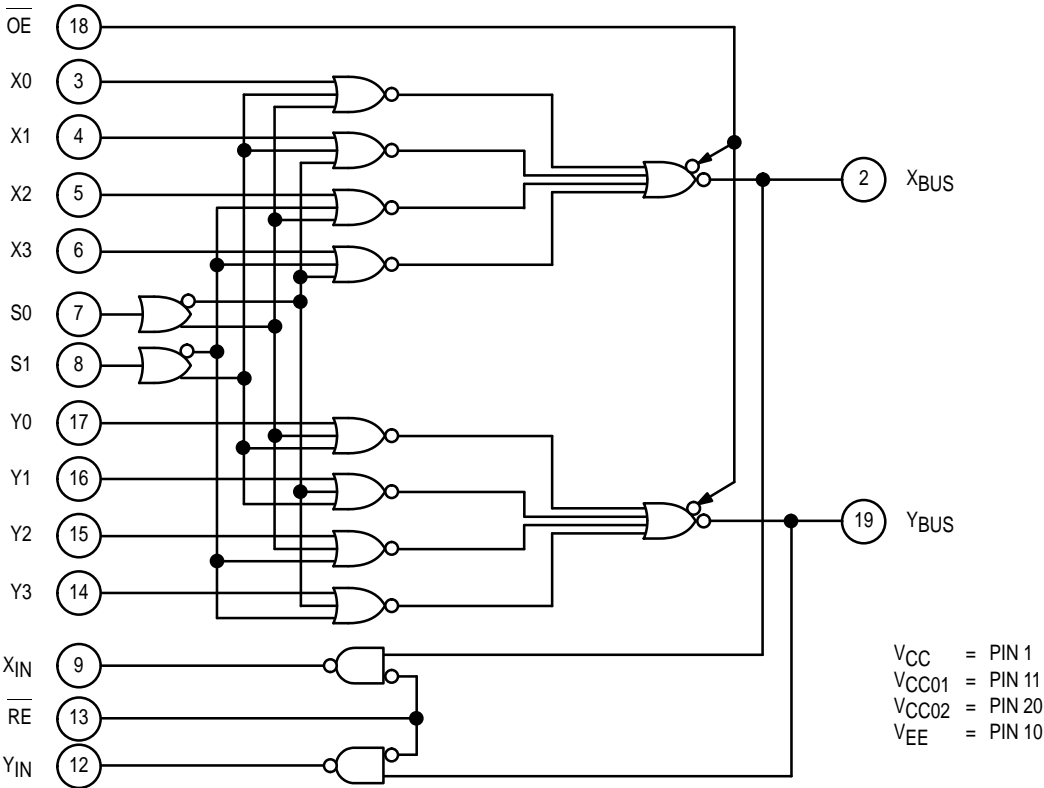
MULTIPLEXER TRUTH TABLE

| OE | S1 | S0 | X _{Bus} | Y _{Bus} |
|----|----|----|------------------|------------------|
| H | X | X | -2.0V | -2.0V |
| L | L | L | X0 | Y0 |
| L | L | H | X1 | Y1 |
| L | H | L | X2 | Y2 |
| L | H | H | X3 | Y3 |

RECEIVER TRUTH TABLE

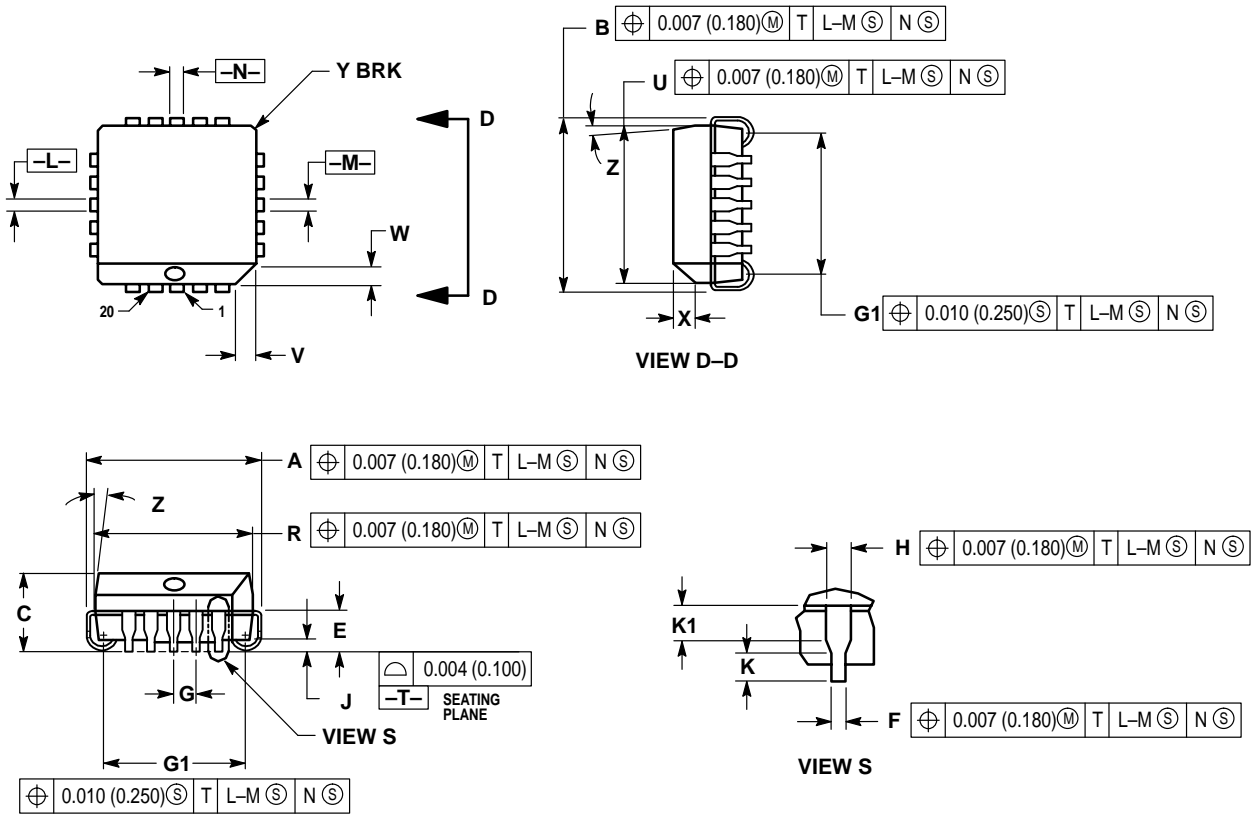
| RE | X _{in} | Y _{in} |
|----|------------------|------------------|
| H | L | L |
| L | X _{Bus} | Y _{Bus} |

LOGIC DIAGRAM



OUTLINE DIMENSIONS

FN SUFFIX
PLASTIC PLCC PACKAGE
CASE 775-02
ISSUE C

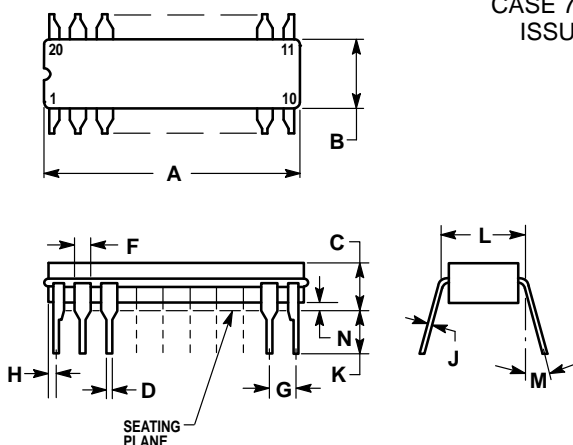


- NOTES:
1. DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
 2. DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
 3. DIMENSIONS R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
 4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 5. CONTROLLING DIMENSION: INCH.
 6. THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
 7. DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.385 | 0.395 | 9.78 | 10.03 |
| B | 0.385 | 0.395 | 9.78 | 10.03 |
| C | 0.165 | 0.180 | 4.20 | 4.57 |
| E | 0.090 | 0.110 | 2.29 | 2.79 |
| F | 0.013 | 0.019 | 0.33 | 0.48 |
| G | 0.050 BSC | | 1.27 BSC | |
| H | 0.026 | 0.032 | 0.66 | 0.81 |
| J | 0.020 | — | 0.51 | — |
| K | 0.025 | — | 0.64 | — |
| R | 0.350 | 0.356 | 8.89 | 9.04 |
| U | 0.350 | 0.356 | 8.89 | 9.04 |
| V | 0.042 | 0.048 | 1.07 | 1.21 |
| W | 0.042 | 0.048 | 1.07 | 1.21 |
| X | 0.042 | 0.056 | 1.07 | 1.42 |
| Y | — | 0.020 | — | 0.50 |
| Z | 2 ° | 10 ° | 2 ° | 10 ° |
| G1 | 0.310 | 0.330 | 7.88 | 8.38 |
| K1 | 0.040 | — | 1.02 | — |

OUTLINE DIMENSIONS

L SUFFIX
CERAMIC DIP PACKAGE
CASE 732-03
ISSUE E

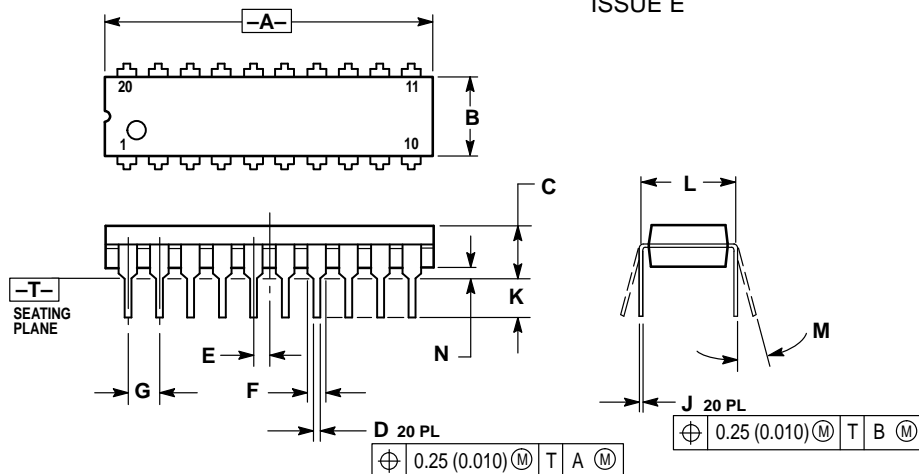


NOTES:

- LEADS WITHIN 0.010 DIAMETER, TRUE POSITION AT SEATING PLANE, AT MAXIMUM MATERIAL CONDITION.
- DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
- DIMENSIONS A AND B INCLUDE MENISCUS.

| DIM | INCHES | |
|-----|-----------|-------|
| | MIN | MAX |
| A | 0.940 | 0.990 |
| B | 0.260 | 0.295 |
| C | 0.150 | 0.200 |
| D | 0.015 | 0.022 |
| F | 0.055 | 0.065 |
| G | 0.100 BSC | |
| H | 0.020 | 0.050 |
| J | 0.008 | 0.012 |
| K | 0.125 | 0.160 |
| L | 0.300 BSC | |
| M | 0° 15° | |
| N | 0.010 | 0.040 |

P SUFFIX
PLASTIC DIP PACKAGE
CASE 738-03
ISSUE E



NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
- DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
- DIMENSION B DOES NOT INCLUDE MOLD FLASH.

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.010 | 1.070 | 25.66 | 27.17 |
| B | 0.240 | 0.260 | 6.10 | 6.60 |
| C | 0.150 | 0.180 | 3.81 | 4.57 |
| D | 0.015 | 0.022 | 0.39 | 0.55 |
| E | 0.050 BSC | | 1.27 BSC | |
| F | 0.050 | 0.070 | 1.27 | 1.77 |
| G | 0.100 BSC | | 2.54 BSC | |
| J | 0.008 | 0.015 | 0.21 | 0.38 |
| K | 0.110 | 0.140 | 2.80 | 3.55 |
| L | 0.300 BSC | | 7.62 BSC | |
| M | 0° 15° | | 0° 15° | |
| N | 0.020 | 0.040 | 0.51 | 1.01 |

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How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405; Denver, Colorado 80217. 1-800-441-2447

MFAX: RMFA00@email.sps.mot.com – TOUCHTONE 602-244-6609
INTERNET: http://Design-NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center,
3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 81-3-3521-8315

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298