

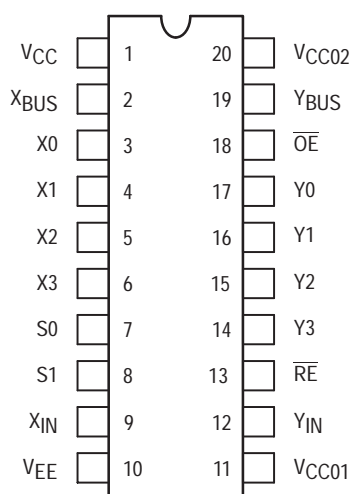
# MC10H332

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

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

### DIP & PLCC PIN ASSIGNMENT



Pin assignment is for Dual-in-Line Package.  
For PLCC pin assignment, see the Pin Conversion Tables on page 18 of the ON Semiconductor MECL Data Book (DL122/D).

### NOTE:

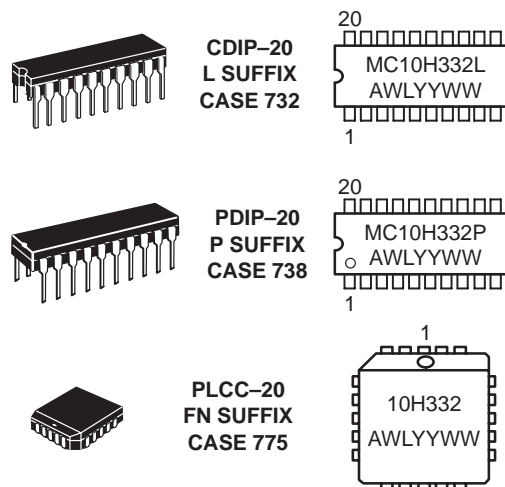
Each MECL 10H series circuit has been designed to meet the dc specifications shown in the test table, after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 lpm is maintained. Receiver outputs are 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.



ON Semiconductor

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### MARKING DIAGRAMS



A = Assembly Location  
WL = Wafer Lot  
YY = Year  
WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
MC10H332L	CDIP-20	18 Units/Rail
MC10H332P	PDIP-20	18 Units/Rail
MC10H332FN	PLCC-20	46 Units/Rail

# MC10H332

## MAXIMUM RATINGS

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

## ELECTRICAL CHARACTERISTICS ( $V_{EE} = -5.2\text{ V} \pm 5\%$ ) (See Note 1.)

Symbol	Characteristic	0°		25°		75°		Unit
		Min	Max	Min	Max	Min	Max	
$I_E$	Power Supply Current	–	115	–	110	–	115	mA
$I_{inH}$	Input Current High Pins 3,4,5,6,14, 15,16,17 Pins 7,8 Pins 13, 18	–	667	–	417	–	417	$\mu\text{A}$
		–	437	–	273	–	273	
		–	456	–	285	–	285	
		–	456	–	285	–	285	
$I_{inL}$	Input Current Low	0.5	–	0.5	–	0.3	–	$\mu\text{A}$
$V_{OH}$	High Output Voltage	-1.02	-0.84	-0.98	-0.81	-0.92	-0.735	Vdc
$V_{OL}$	Low Output Voltage	-1.95	-1.63	-1.95	-1.63	-1.95	-1.60	Vdc
$V_{IH}$	High Input Voltage	-1.17	-0.84	-1.13	-0.81	-1.07	-0.735	Vdc
$V_{IL}$	Low Input Voltage	-1.95	-1.48	-1.95	-1.48	-1.95	-1.45	Vdc

## AC PARAMETERS

$t_{pd}$	Propagation Delay Data-to-Bus Output	0.8	3.0	0.8	3.0	0.8	3.2	ns
	Select-to-Bus Output	0.8	3.4	0.8	3.4	0.8	3.8	
	$\overline{OE}$ -to-Bus Output	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	
	$\overline{RE}$ -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	
$t_r$	Rise Time	0.5	2.0	0.5	2.0	0.5	2.1	ns
$t_f$	Fall Time	0.5	2.0	0.5	2.0	0.5	2.1	ns

- 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 lfpm is maintained. Outputs are terminated through a 50-ohm resistor to -2.0 volts.

# MC10H332

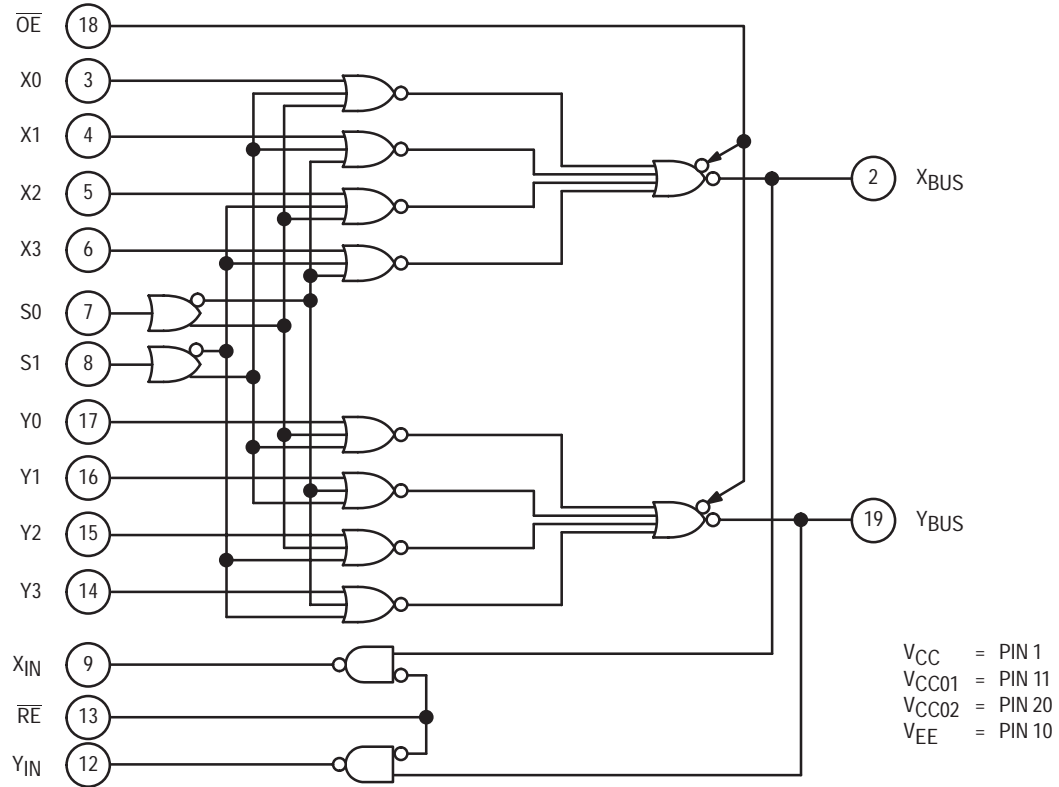
MULTIPLEXER TRUTH TABLE

OE	S1	S0	X <sub>Bus</sub>	Y <sub>Bus</sub>
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 <sub>in</sub>	Y <sub>in</sub>
H	L	L
L	X <sub>Bus</sub>	Y <sub>Bus</sub>

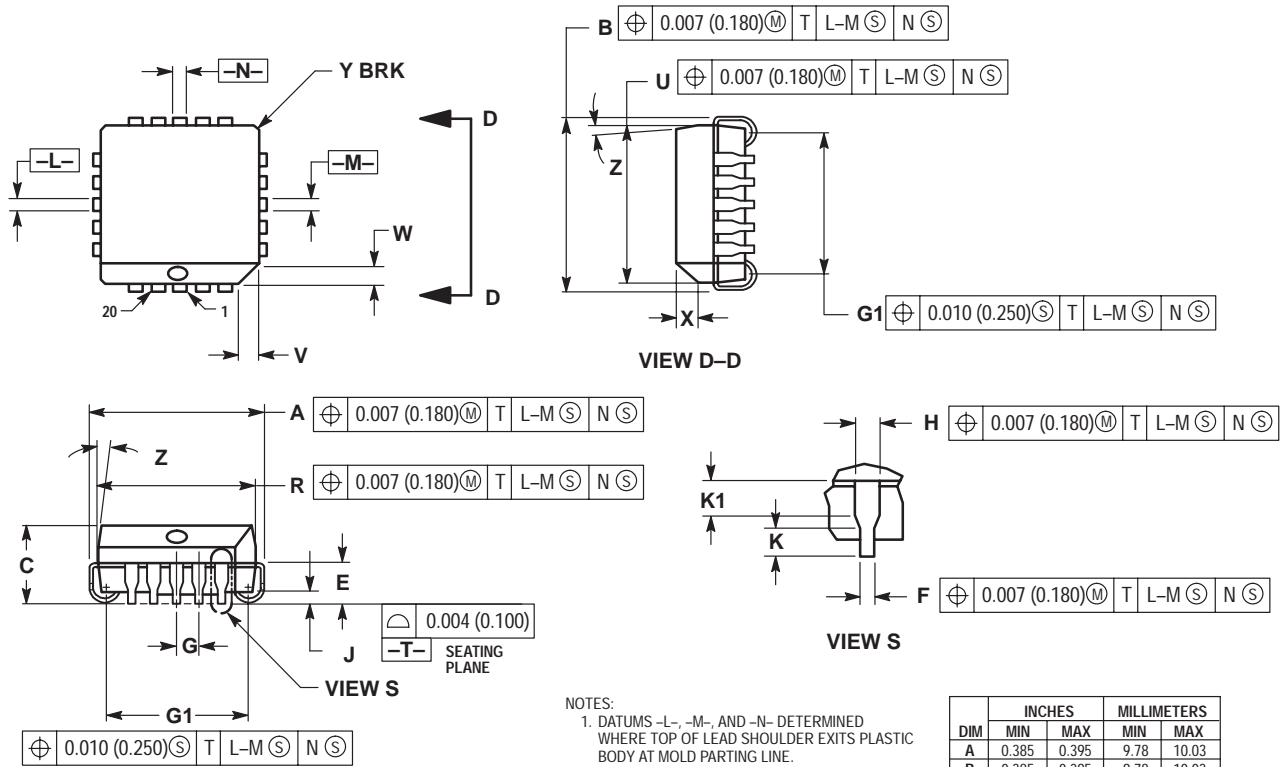
LOGIC DIAGRAM



# MC10H332

## PACKAGE DIMENSIONS

PLCC-20  
FN SUFFIX  
PLASTIC PLCC PACKAGE  
CASE 775-02  
ISSUE C



### NOTES:

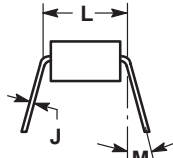
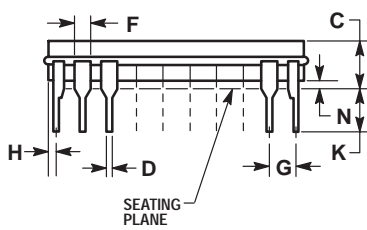
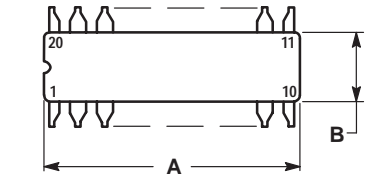
- DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
- DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
- DIMENSIONS R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
- 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.
- 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	---

# MC10H332

## PACKAGE DIMENSIONS

### CDIP-20 L SUFFIX CERAMIC DIP PACKAGE CASE 732-03 ISSUE E

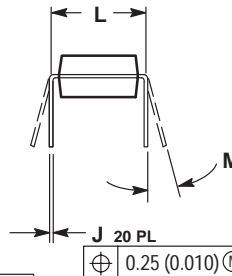
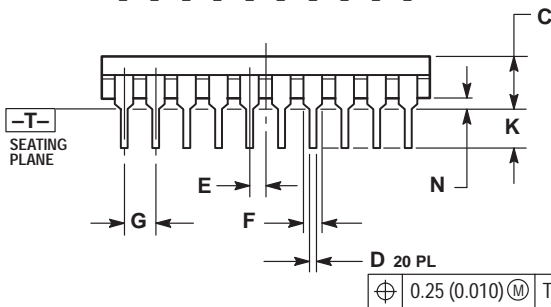
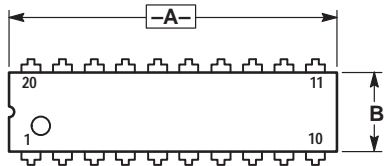


#### NOTES:

- 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

### PDIP-20 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

## **Notes**

## **Notes**

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