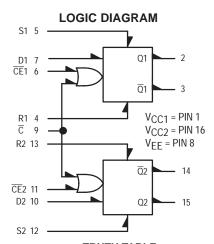
Dual Latch

The MC10H130 is a MECL 10H part which is a functional/pinout duplication of the standard MECL 10K family part, with 100% improvement in clock speed and propagation delay and no increase in power–supply current.

- Propagation Delay, 1.0 ns Typical
- Power Dissipation, 155 mW Typical
- Improved Noise Margin 150 mV (Over Operating Voltage and Temperature Range)
- Voltage Compensated
- MECL 10K-Compatible



TRUTH TABLE						
D	C	CE	Q _{n+1}			
L	L	L	L			
Н	L	L	Н			
Х	L	Н	Q _n			
Х	Н	L	Qn			
Х	Н	Н	Qn			

DIP PIN ASSIGNMENT

		\neg		1	
V _{CC1}	1		16		V_{CC2}
Q1	2		15		Q2
<u>Q1</u>	3		14		Q2
R1	4		13		R2
S1	5		12		S2
C _{E1}	6		11		C _{E2}
D1	7		10		D2
V_{EE}	8		9	Þ	\overline{C}

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).



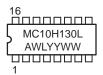
ON Semiconductor

http://onsemi.com

MARKING DIAGRAMS



CDIP-16 L SUFFIX CASE 620A





PDIP-16 P SUFFIX CASE 648





PLCC-20 FN SUFFIX CASE 775



A = Assembly Location

WL = Wafer Lot YY = Year

WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
MC10H130L	CDIP-16	25 Units/Rail
MC10H130P	PDIP-16	25 Units/Rail
MC10H130FN	PLCC-20	46 Units/Rail

MAXIMUM RATINGS

Symbol	Characteristic	Rating	Unit
VEE	Power Supply (V _{CC} = 0)	-8.0 to 0	Vdc
VI	Input Voltage (V _{CC} = 0)	0 to VEE	Vdc
l _{out}	Output Current – Continuous – Surge	50 100	mA
TA	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.)

		0 °		25 °		75°		
Symbol	Characteristic	Min	Max	Min	Max	Min	Max	Unit
ΙE	Power Supply Current	_	38	-	35	ı	38	mA
l _{in} H	Input Current High Pins 6, 11 Pins 7, 9, 10 Pins 4, 5, 12, 13	- - -	468 545 434		275 320 255	1 1 1	275 320 255	μА
l _{inL}	Input Current Low	0.5	_	0.5	_	0.3	1	μΑ
Voн	High Output Voltage	-1.02	-0.84	-0.98	-0.81	-0.92	-0.735	Vdc
VOL	Low Output Voltage	-1.95	-1.63	-1.95	-1.63	-1.95	-1.60	Vdc
VIH	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

tpd	Propagation Delay							ns
	Data	0.4	1.6	0.4	1.7	0.4	1.8	
	Set, Reset	0.6	1.7	0.7	1.8	0.8	1.9	
	Clock, CE	0.5	1.6	0.5	1.7	0.6	1.8	
t _r	Rise Time	0.5	1.6	0.5	1.7	0.5	1.8	ns
t _f	Fall Time	0.5	1.6	0.5	1.7	0.5	1.8	ns
t _{set}	Set-up Time	2.2	_	2.2	_	2.2	-	ns
thold	Hold Time	0.7	-	0.7	-	0.7	-	ns

^{1.} 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 linear fpm is maintained. Outputs are terminated through a 50–ohm resistor to –2.0 volts.

APPLICATION INFORMATION

The MC10H130 is a clocked dual D type latch. Each latch may be clocked separately by holding the common clock in the low state, and using the clock enable inputs for the clocking function. If the common clock is to be used to clock the latch, the clock enable $\overline{(CE)}$ inputs must be in the low state. In this mode, the enable inputs perform the function of controlling the common clock $\overline{(C)}$.

Any change at the D input will be reflected at the output while the clock is low. The outputs are latched on the

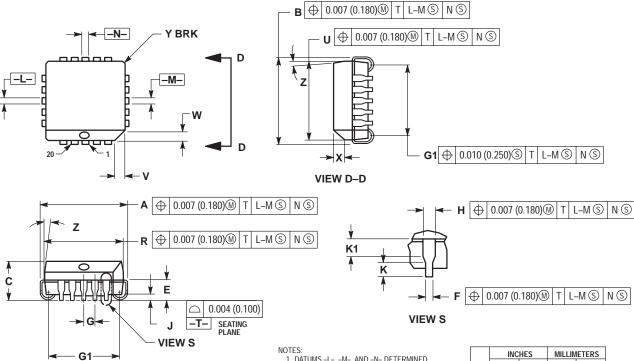
positive transition of the clock. While the clock is in the high state, a change in the information present at the data inputs will not affect the output information.

The set and reset inputs do not override the clock and D inputs. They are effective only when either \overline{C} or \overline{CE} or both are high.

PACKAGE DIMENSIONS

PLCC-20 **FN SUFFIX**

PLASTIC PLCC PACKAGE CASE 775-02 **ISSUE C**

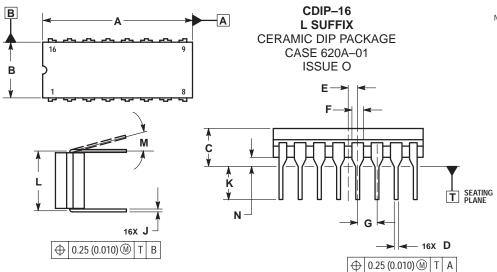


⊕ 0.010 (0.250)⑤ T L-M ⑤ N ⑤

- DATUMS -L-, -M-, AND -N- DETERMINED
 WHERE TOP OF LEAD SHOULDER EXITS PLASTIC WILLY LOVE LEAD STOUDER EXTENSIVE SOLUTION 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.
- 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).

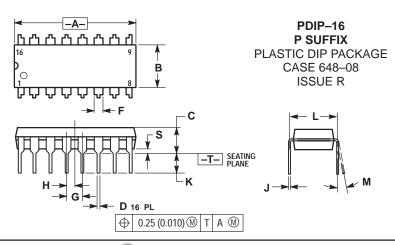
	INC	HES	MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.385	0.395	9.78	10.03
В	0.385	0.395	9.78	10.03
С	0.165	0.180	4.20	4.57
Ε	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050	BSC	1.27	BSC
Н	0.026	0.032	0.66	0.81
J	0.020		0.51	
K	0.025		0.64	
R	0.350	0.356	8.89	9.04
U	0.350	0.356	8.89	9.04
٧	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
Χ	0.042	0.056	1.07	1.42
Υ		0.020		0.50
Z	2°	10 °	2 °	10 °
G1	0.310	0.330	7.88	8.38
K1	0.040		1.02	



NOTES:

- DIMENSIONING AND TOLERANCING PER
- ASME Y14.5M, 1994.
 CONTROLLING DIMENSION: INCH.
 DIMENSION L TO CENTER OF LEAD WHEN
 FORMED PARALLEL.
- DIMENSION F MAY NARROW TO 0.76 (0.030)
 WHERE THE LEAD ENTERS THE CERAMIC
- THIS DRAWING REPLACES OBSOLETE CASE OUTLINE 620-10.

	INC	HES	MILLIN	IETERS	
DIM	MIN MAX		MIN	MAX	
Α	0.750	0.785	19.05	19.93	
В	0.240	0.295	6.10	7.49	
С		0.200		5.08	
D	0.015	0.020	0.39	0.50	
Ε	0.050 BSC		1.27 BSC		
F	0.055	0.065	1.40	1.65	
G	0.100	BSC	2.54	BSC	
Н	0.008	0.015	0.21	0.38	
K	0.125	0.170	3.18	4.31	
L	0.300 BSC		7.62 BSC		
M	0 °	15 °	0 °	15°	
N	0.020	0.040	0.51	1.01	



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

	INC	HES	MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.740	0.770	18.80	19.55	
В	0.250	0.270	6.35	6.85	
С	0.145	0.175	3.69	4.44	
D	0.015	0.021	0.39	0.53	
F	0.040	0.70	1.02	1.77	
G	0.100	BSC	2.54	BSC	
Н	0.050	BSC	1.27	BSC	
J	0.008	0.015	0.21	0.38	
K	0.110	0.130	2.80	3.30	
L	0.295	0.305	7.50	7.74	
M	0°	10 °	0°	10 °	
S	0.020	0.040	0.51	1.01	

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