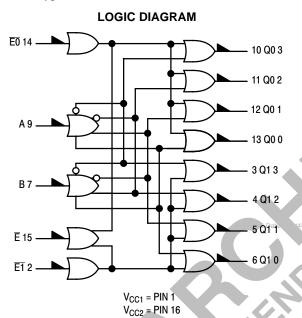
Dual Binary to 1-4 Decoder (Low)

The MC10171 is a binary coded 2 line to dual 4 line decoder with selected outputs low. With either $\overline{E}0$ or $\overline{E}1$ high, the corresponding selected 4 outputs are high. The common enable \overline{E} , when high, forces all outputs high.

- $P_D = 325 \text{ mW typ/pkg (No Load)}$
- $t_{pd} = 4.0 \text{ ns typ}$
- t_r , $t_f = 2.0$ ns typ (20%–80%)



TRUTH TABLE

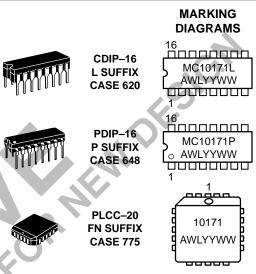
V_{EE} = PIN 8

ENABLE INPUTS INPUTS OUTPUTS												
Ē	E0	E1	Α	В	Q10	Q11	Q12	Q13	Q00	Q01	Q02	Q03
L	L	L	L	L	L	H	Τ	Н	L	Н	Н	Н
L	L	L	L	Н	Н		Н	Н	Н	L	Н	Н
L	L	L	Н	L	H	Н	L	Н	Н	Н	L	Н
L	L	L	Н	Н	H	Ĥ	Н	L	Н	Н	Н	L
L	L	Н	L	L	Н	Н	Н	Н	L	Н	Н	Н
L	Н	L	L	L	L	Н	Н	Н	Н	Н	Н	Н
Н	Χ	Χ	X	X	Н	Н	Н	Н	Н	Н	Н	Н



ON Semiconductor

http://onsemi.com



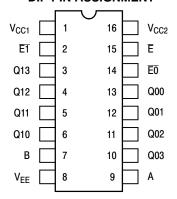
A = Assembly Location

WL = Wafer Lot

YY = Year

WW = Work Week

DIP 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).

ORDERING INFORMATION

ONDERWIND HAT ORKING ATTOM								
Device	Package	Shipping						
MC10171L	CDIP-16	25 Units / Rail						
MC10171P	PDIP-16	25 Units / Rail						
MC10171FN	PLCC-20	46 Units / Rail						

ELECTRICAL CHARACTERISTICS

Characteristic Power Supply Drain Current		. .	Test Limits							
		Pin Under	−30°C		+25°C				+85°C	
Power Supply Drain Current	Symbol	Test	Min	Max	Min	Тур	Max	Min	Max	Un
i owei ouppiy Diaili Cullent	Ι _Ε	8		85		65	77		85	mΑ
Input Current	I _{inH}	14		350			220		220	μΑσ
	I _{inL}	14	0.5		0.5			0.3		μΑο
Output Voltage Logic 1	V _{OH}	6 13	-1.060 -1.060	-0.890 -0.890	-0.960 -0.960		-0.810 -0.810	-0.890 -0.890	-0.700 -0.700	Vd
Output Voltage Logic 0	V_{OL}	13	-1.890	-1.675	-1.850		-1.650	-1.825	-1.615	Vd
Threshold Voltage Logic 1	V _{OHA}	6 13	-1.080 -1.080		-0.980 -0.980			-0.910 -0.910		Vd
Threshold Voltage Logic 0	V _{OLA}	6 13		-1.655 -1.655			-1.630 -1.630		-1.595 -1.595	Vd
Switching Times (50Ω Load)										ns
Propagation Delay	t ₇₊₆₊ t _{7–6-} t ₇₊₁₃₊ t _{7–13-}	6 6 13 13	1.5 1.5 1.5 1.5	6.2 6.2 6.2 6.2	1.5 1.5 1.5 1.5	4.0 4.0 4.0 4.0	6.0 6.0 6.0 6.0	1.5 1.5 1.5 1.5	6.4 6.4 6.4 6.4	
Rise Time (20 to 80%)	t ₆₊ t ₁₃₊	6 13	1.0 1.0	3.3 3.3	1.1 1.1	2.0 2.0	3.3 3.3	1.1 1.1	3.4 3.4	
Fall Time (20 to 80%)	t ₆₋ t ₁₃₋	6 13	1.0 1.0	3.3 3.3	1.1 1.1	2.0 2.0	3.3 3.3	1.1 1.1	3.4 3.4	
OFNICE	SP									

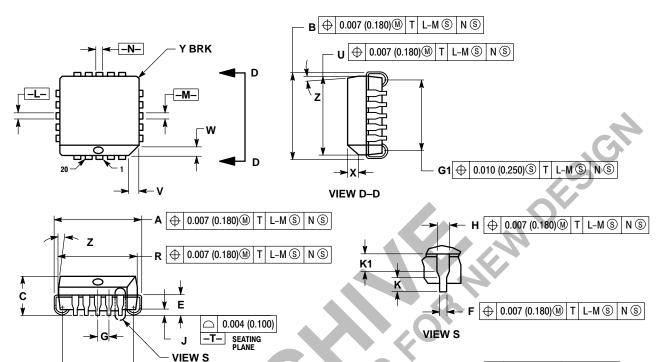
ELECTRICAL CHARACTERISTICS (continued)

						TAGE VALU		I	4
		@ Test Te	mperature	V _{IHmax}	V _{ILmin}	V _{IHAmin}	V _{ILAmax}	V _{EE}	
			–30°C	-0.890	-1.890	-1.205	-1.500	-5.2	
			+25°C	-0.810	-1.850	-1.105	-1.475	− 5.2	
			+85°C	-0.700	-1.825	-1.035	-1.440	-5.2	
			Pin	TEST V	OLTAGE APP	LIED TO PII	NS LISTED B	ELOW	
Character	istic	Symbol	Under Test	V _{IHmax}	V _{ILmin}	V _{IHAmin}	V _{ILAmax}	V _{EE}	(V G
Power Supply Drain	Current	Ι _Ε	8	2,7,9,14,15				8	1,
Input Current		I _{inH}	14	14				8	1,
		I _{inL}	14		14			8	1,
Output Voltage	Logic 1	V _{OH}	6 13	15 15				8	1,
Output Voltage	Logic 0	V _{OL}	13		2,7,9,14,15			8	1,
Threshold Voltage	Logic 1	V _{OHA}	6 13			15 15		8 8	1, 1,
Threshold Voltage	Logic 0	V _{OLA}	6 13		2,9,14,15 2,7,14,15		7 9	8 8	1, 1,
Switching Times	(50Ω Load)				+0.31V	Pulse In	Pulse Out	-3.2 V	+2
Propagation Delay	(0011 1000)	t ₇₊₆₊	6		2,9,14,15	7	6	8	1,
· · · · · · · · · · · · · · · · · · ·		t ₇₋₆₋	6		2,9,14,15	7	6	8	1,
		t ₇₊₁₃₊	13 13		2,9,14,15 2,9,14,15	7	13 13	8 8	1,
Rise Time	(20 to 80%)	t _{7–13–}	6		2,3,14,13	7	6	8	1, 1,
Kise Time	(20 10 60 %)	t ₆₊ t ₁₃₊	13			7	13	8	1,
Fall Time	(20 to 80%)	t ₆₋	6			7	6	8	1,
	,	t ₁₃ _	13			7	13	8	1,
Outputs are terminate ame manner.					ures are show	n for only one	e gate. The ot	her gates are	teste
*									

PACKAGE DIMENSIONS

PLCC-20 **FN SUFFIX**

PLASTIC PLCC PACKAGE CASE 775-02 ISSUE C



NOTES:

G1 ⊕ 0.010 (0.250)③ T L-M ⑤ N ⑤

OF VICE NOT PRESCO

- IOTES:

 1. DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.

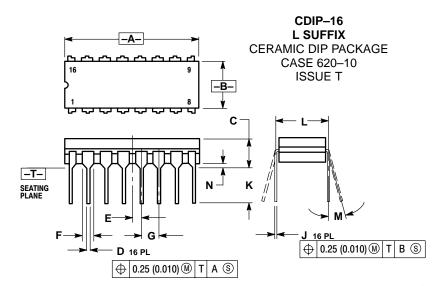
 2. DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.

 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.
- Y14.5M, 1982. 5. 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).

	INC	HES	MILLIMETERS			
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		
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			
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		
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			

PACKAGE DIMENSIONS



NOTES:

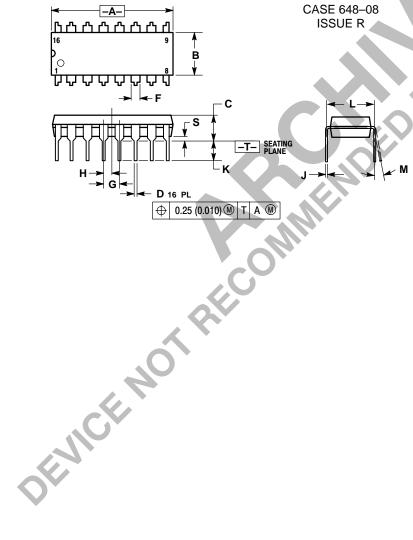
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 CONTROLLING DIMENSION: INCH.
 DIMENSION LTO CENTER OF LEAD WHEN CONTROLLING DIMENSION LTO CENTER OF LEAD WHEN

- FORMED PARALLEL

 DIMENSION F MAY NARROW TO 0.76 (0.030)
 WHERE THE LEAD ENTERS THE CERAMIC
 BODY.

	INC	HES	MILLIMETERS			
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		
E	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			
М	0 °	15°	0 °	15°		
N	0.020	0.040	0.51	1.01		

PDIP-16 **P SUFFIX** PLASTIC DIP PACKAGE CASE 648-08 ISSUE R



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

	INC	HES	MILLIN	IETERS	
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	

Notes



Notes





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