

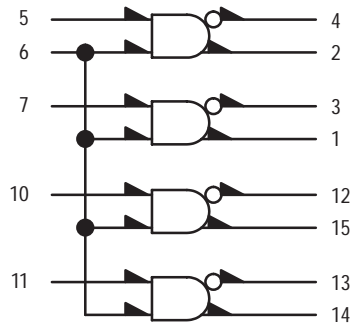
MC10H424

Quad TTL to ECL Translator with ECL Strobe

The MC10H424 is a Quad TTL-to-ECL translator with an ECL strobe. Power supply requirements are ground, +5.0 volts, and -5.2 volts.

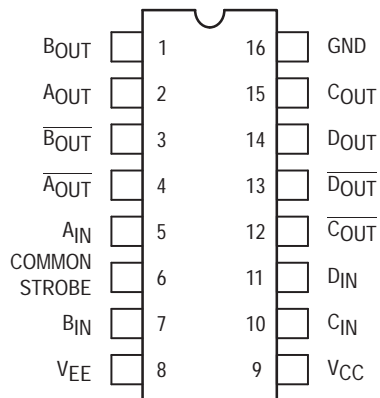
- Propagation Delay, 1.5 ns Typical
- Improved Noise Margin 150 mV (Over Operating Voltage and Temperature Range)
- Voltage Compensated
- MECL 10K – Compatible

LOGIC DIAGRAM



GND = PIN 16
 VCC (+5.0 VDC) = PIN 9
 VEE (-5.2 VDC) = PIN 8

DIP PIN ASSIGNMENT



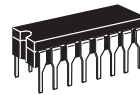
Pin assignment is for Dual-in-Line Package.
 For PLCC pin assignment, see the Pin Conversion Tables on page 18 of the ON Semiconductor MECL Data Book (DL122/D).



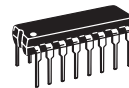
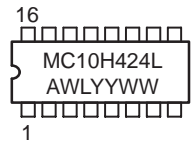
ON Semiconductor

<http://onsemi.com>

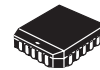
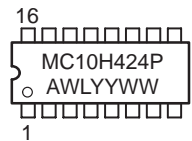
MARKING DIAGRAMS



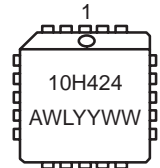
CDIP-16
 L SUFFIX
 CASE 620



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
MC10H424L	CDIP-16	25 Units/Rail
MC10H424P	PDIP-16	25 Units/Rail
MC10H424FN	PLCC-20	46 Units/Rail

MC10H424

MAXIMUM RATINGS

Symbol	Characteristic	Rating	Unit
V_{EE}	Power Supply ($V_{CC} = 5.0\text{ V}$)	-8.0 to 0	Vdc
V_{CC}	Power Supply ($V_{EE} = -5.2\text{ V}$)	0 to +7.0	Vdc
V_I	Input Voltage (ECL)	0 to V_{EE}	Vdc
V_I	Input Voltage (TTL)	0 to V_{CC}	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

ELECTRICAL CHARACTERISTICS ($V_{EE} = -5.2\text{ V} \pm 5\%$, $V_{CC} = 5.0\text{ V} \pm 5.0\%$)

Symbol	Characteristic	0°		25°		75°		Unit
		Min	Max	Min	Max	Min	Max	
I_E	Negative Power Supply Drain Current	-	72	-	66	-	72	mAdc
I_{CCH}	Positive Power Supply Drain Current	-	16	-	16	-	18	mAdc
I_{CCL}		-	25	-	25	-	25	mAdc
I_R	Reverse Current Pin 5,7,10,11	-	50	-	50	-	50	μ Adc
I_F	Forward Current Pin 5,7,10,11	-	-3.2	-	-3.2	-	-3.2	mAdc
I_{inH}	Input HIGH Current Pin 6	-	450	-	310	-	310	μ Adc
I_{inL}	Input LOW Current Pin 6	0.5	-	0.5	-	0.3	-	μ Adc
$V_{(BR)in}$	Input Breakdown Voltage	5.5	-	5.5	-	5.5	-	Vdc
V_I	Input Clamp Voltage	-	-1.5	-	-1.5	-	-1.5	Vdc
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 Pin 5,7,10,11	2.0	-	2.0	-	+2.0	-	Vdc
V_{IL}	Low Input Voltage Pin 5,7,10,11	-	0.8	-	0.8	-	0.8	Vdc
V_{IH}	High Input Voltage Pin 6	-1.17	-0.84	-1.13	-0.81	-1.07	-0.735	Vdc
V_{IL}	Low Input Voltage Pin 6	-1.95	-1.48	-1.95	-1.48	-1.95	-1.45	Vdc

AC PARAMETERS

Propagation Delay Data Strobe	t_{pd}							ns
		0.5	2.2	0.5	2.3	0.5	2.4	
Rise Time	t_r	0.5	2.0	0.5	2.0	0.5	2.2	ns
Fall Time	t_f	0.5	2.0	0.5	2.0	0.5	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 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. Outputs are terminated through a 50-ohm resistor to -2.1 volts.

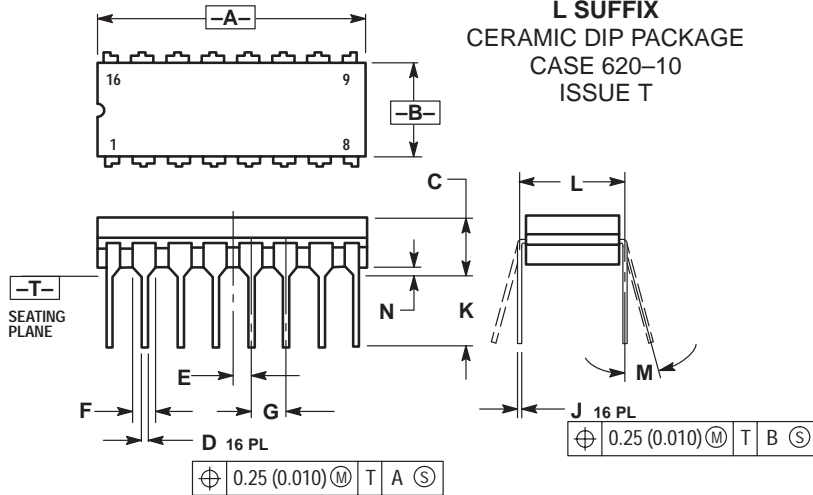
APPLICATIONS INFORMATION

The MC10H424 has TTL-compatible inputs, an ECL strobe and MECL complementary open-emitter outputs that allow use as an inverting/non-inverting translator or as a differential line driver. When the common strobe input is at the low-logic level, it forces all true outputs to a MECL low-logic state and all inverting outputs to a MECL high-logic state.

An advantage of this device is that TTL-level information can be transmitted differentially, via balanced twisted pair lines, to MECL equipment, where the signal can be received by the MC10H115 or MC10H116 differential line receivers.

MC10H424

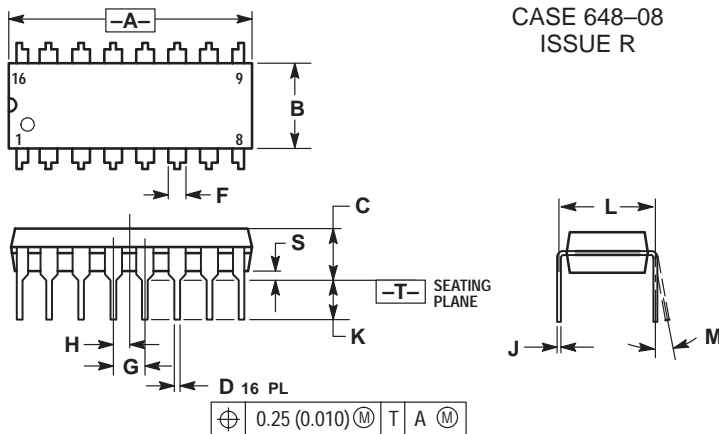
CDIP-16 L SUFFIX CERAMIC DIP PACKAGE CASE 620-10 ISSUE T



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
 4. DIMENSION F MAY NARROW TO 0.76 (0.030) WHERE THE LEAD ENTERS THE CERAMIC BODY.


DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.750	0.785	19.05	19.93
B	0.240	0.295	6.10	7.49
C	---	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	
H	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

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.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.740	0.770	18.80	19.55
B	0.250	0.270	6.35	6.85
C	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	
H	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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