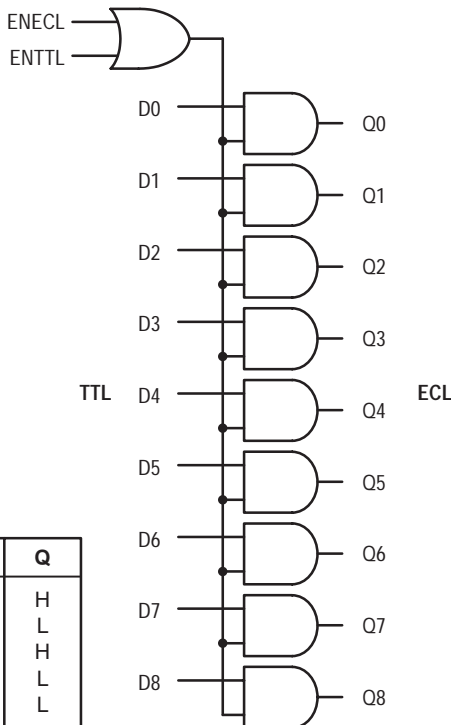# MC10H600, MC100H600

9-Bit TTL to ECL Translator

The MC10H/100H600 is a 9–bit, dual supply TTL to ECL translator. Devices in the Motorola 9–bit translator series utilize the 28–lead PLCC for optimal power pinning, signal flow–through and electrical performance.

The H600 features both ECL and TTL logic enable controls for maximum flexibility.

The 10H version is compatible with MECL 10H ECL logic levels. The 100H version is compatible with 100K levels.

- 9–Bit Ideal for Byte–Parity Applications
- Flow–Through Configuration
- Extra TTL and ECL Power/Ground Pins to Minimize Switching Noise
- ECL and TTL Enable Inputs
- Dual Supply
- 3.5 ns Max D to Q
- PNP TTL Inputs for Low Loading
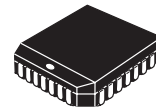- Choice of ECL Compatibility: MECL 10H (10Hxxx) or 100K (100Hxxx)

ON Semiconductor

http://onsemi.com

**PLCC–28
FN SUFFIX
CASE 776**

MARKING DIAGRAM

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1
10H600
AWLYYWW
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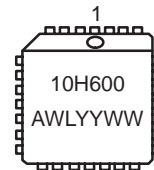
A = Assembly Location
WL = Wafer Lot
YY = Year
WW = Work Week

PIN NAMES

PIN	FUNCTION
GND	TTL Ground (0 V)
V_{CCE}	ECL V_{CC} (0 V)
V_{CCO}	ECL V_{CC} (0 V) — Outputs
V_{CCT}	TTL Supply (+5.0 V)
V_{EE}	ECL Supply (−5.2/−4.5 V)
D0–D8	Data Inputs (TTL)
Q0–Q8	Data Outputs (ECL)
ENECL	Enable Control (ECL)
ENTTL	Enable Control (TTL)

LOGIC SYMBOL

TRUTH TABLE

ENECL	ENTTL	D	Q
H	X	H	H
H	X	L	L
X	H	H	H
X	H	L	L
L	L	X	L

Pinout: 28–Lead PLCC (Top View)
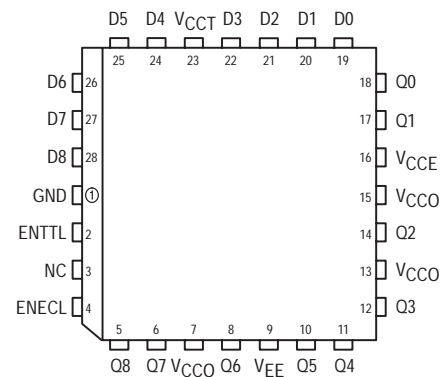
ORDERING INFORMATION

Device	Package	Shipping
MC10H600FN	PLCC–28	37 Units/Rail
MC100H600FN	PLCC–28	37 Units/Rail

March, 2000 – Rev. 6

1

MC10H600, MC100H600

DC CHARACTERISTICS: V_{CCT} = 5.0 V ± 10%; V_{EE} = −5.2 V ± 5% (10H version); V_{EE} = −4.2 V to −5.5 V (100H version)

Symbol	Parameter		0°C Min	0°C Max	25°C Min	25°C Max	75°C Min	75°C Max	Unit	Condition
	Power Supply Current									
I_{EE}	ECL	10H 100H		−125 −122		−125 −123		−125 −132	mA	
I_{CCH} I_{CCL}	TTL			48 50		48 50		48 50	mA	

AC CHARACTERISTICS: V_{CCT} = 5.0 V ± 10%; V_{EE} = −5.2 V ± 5% (10H version); V_{EE} = −4.2 V to −5.5 V (100H version)

Symbol	Parameter		0°C Min	0°C Max	25°C Min	25°C Max	75°C Min	75°C Max	Unit	Condition
t_{PLH} t_{PHL}	Propagation Delay to Output	D	1.4	3.0	1.5	3.2	1.7	3.5	ns	50 Ω to −2.0 V
		ENECL/ ENTTL	1.8	3.7	1.9	3.9	2.0	4.1	ns	50 Ω to −2.0 V
t_R t_F	Output Rise/Fall Time 20%−80%		0.5	1.5	0.5	1.5	0.5	1.5	ns	50 Ω to −2.0 V

10H ECL DC CHARACTERISTICS: V_{CCT} = 5.0 V ± 10%; V_{EE} = −5.2 V ± 5%

Symbol	Parameter	0°C Min	0°C Max	25°C Min	25°C Max	75°C Min	75°C Max	Unit	Condition
I_{IH} I_{IL}	Input HIGH Current Input LOW Current	0.5	225	0.5	145	0.5	145	µA µA	
V_{IH} V_{IL}	Input HIGH Voltage Input LOW Voltage	−1170 −1950	−840 −1480	−1130 −1950	−810 −1480	−1070 −1950	−735 −1450	mV	
V_{OH} V_{OL}	Output HIGH Voltage Output LOW Voltage	−1020 −1950	−840 −1630	−980 −1950	−810 −1630	−920 −1950	−735 −1600	mV	50 Ω to −2.0 V

100H ECL DC CHARACTERISTICS: V_{CCT} = 5.0 V ± 10%; V_{EE} = −4.2 V to −5.5 V

Symbol	Parameter	0°C Min	0°C Max	25°C Min	25°C Max	75°C Min	75°C Max	Unit	Condition
I_{IH} I_{IL}	Input HIGH Current Input LOW Current	0.5	225	0.5	145	0.5	145	µA µA	
V_{IH} V_{IL}	Input HIGH Voltage Input LOW Voltage	−1165 −1810	−880 −1475	−1165 −1810	−880 −1475	−1165 −1810	−880 −1475	mV	
V_{OH} V_{OL}	Output HIGH Voltage Output LOW Voltage	−1025 −1810	−880 −1620	−1025 −1810	−880 −1620	−1025 −1810	−880 −1620	mV	50 Ω to −2.0 V

TTL DC CHARACTERISTICS: V_{CCT} = 5.0 V ± 10%; V_{EE} = −5.2 V ± 5% (10H version); V_{EE} = −4.2 V to −5.5 V (100H version)

Symbol	Parameter	0°C Min	0°C Max	25°C Min	25°C Max	75°C Min	75°C Max	Unit	Condition
V_{IH} V_{IL}	Input HIGH Voltage Input LOW Voltage	2.0	0.8	2.0	0.8	2.0	0.8	V V	
I_{IH}	Input HIGH Current		20 100		20 100		20 100	µA	V_{IN} = 2.7 V V_{IN} = 7.0 V
I_{IL}	Input LOW Current		−0.6		−0.6		−0.6	mA	V_{IN} = 0.5 V
V_{IK}	Input Clamp Voltage		−1.2		−1.2		−1.2	V	I_{IN} = −18 mA

PACKAGE DIMENSIONS

PLCC–28
FN SUFFIX
PLASTIC PLCC PACKAGE
CASE 776–02
ISSUE D

VIEW D–D

VIEW S
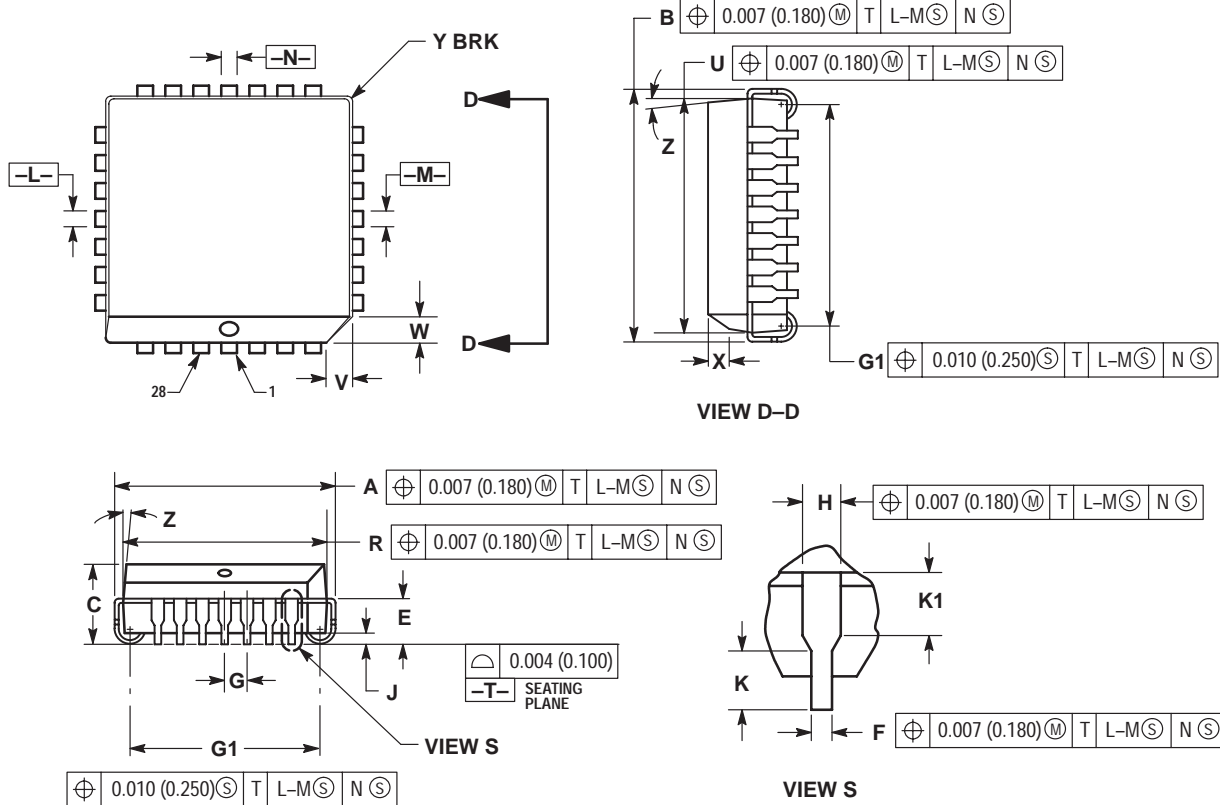
NOTES:
1. DATUMS –L–, –M–, AND –N– DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
2. DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM –T–, SEATING PLANE.
3. DIMENSIONS R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
4. DIMENSIONING 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	0.485	0.495	12.32	12.57
B	0.485	0.495	12.32	12.57
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	0.450	0.456	11.43	11.58
U	0.450	0.456	11.43	11.58
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	0.410	0.430	10.42	10.92
K1	0.040	–––	1.02	–––

PUBLICATION ORDERING INFORMATION