



# 9-BIT ECL-TO-TTL WITH 3-STATE ENABLE

**SY10H601**  
**SY100H601**

## FEATURES

- 9-bit ideal for byte-parity applications
- 3-state TTL outputs
- Flow-through configuration
- Extra TTL and ECL power/ground pins to minimize switching noise
- ECL and TTL 3-state control inputs
- 4.8ns max. delay into 50pF, 9.6ns into 200pF (all outputs switching)
- PNP TTL inputs for low loading
- Choice of ECL compatibility: MECL 10KH (10Hxxx) or 100K (100Hxxx)
- Fully compatible with Motorola MC10H/100H601
- Available in 28-pin PLCC package

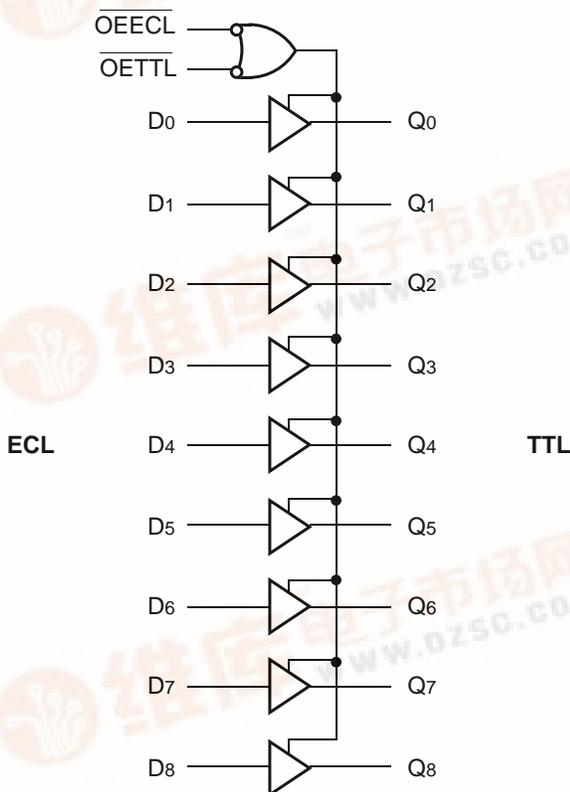
## DESCRIPTION

The SY10/100H601 are 9-bit, dual supply ECL-to-TTL translators. Devices in the Micrel-Synergy 9-bit translator series utilize the 28-lead PLCC for optimal power pinning, signal flow-through and electrical performance.

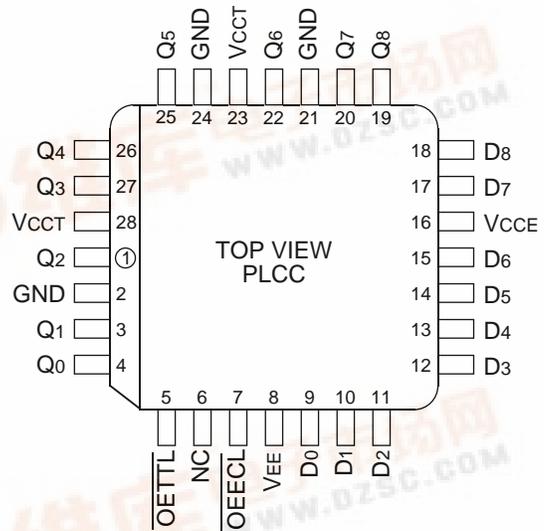
The devices feature a 48mA TTL output stage and AC performance is specified into both a 50pF and 200pF load capacitance. For the 3-state output disable, both ECL and TTL control inputs are provided, allowing maximum design flexibility.

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

## BLOCK DIAGRAM



## PIN CONFIGURATION



## PIN NAMES

Pin	Function
GND	TTL Ground (0V)
VCCE	ECL Vcc (0V)
VCCT	TTL Supply (+5.0V)
VEE	ECL Supply (-5.2/-4.5V)
D0-D8	Data Inputs (ECL)
Q0-Q8	Data Outputs (TTL)
$\overline{OEECL}$	3-State Control (ECL)
$\overline{OETTL}$	3-State Control (TTL)



**TRUTH TABLE**

$\overline{OEECL}$	$\overline{OETTL}$	D	Q
L	L	L	L
L	L	H	H
H	X	X	Z
X	H	X	Z

**DC ELECTRICAL CHARACTERISTICS**

VCCT = 5.0V  $\pm$  10%; VEE = -4.75V to -5.5V (10H Version); VEE = -4.2V to -5.5V (100H Version)

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
IEE	Power Supply Current, ECL	—	46	—	46	—	50	mA	—
ICCH	Power Supply Current, TTL	—	110	—	110	—	110	mA	—
ICCL		—	110	—	110	—	110		
ICCZ		—	105	—	105	—	105		
Ios	Output Short Circuit Current	-100	-225	-100	-225	-100	-225	mA	VOUT = 0V
IozH	Output Disable Current HIGH	—	50	—	50	—	50	$\mu$ A	VOUT = 2.7V
IozL	Output Disable Current LOW	—	-50	—	-50	—	-50	$\mu$ A	VOUT = 0.5V

**AC ELECTRICAL CHARACTERISTICS**

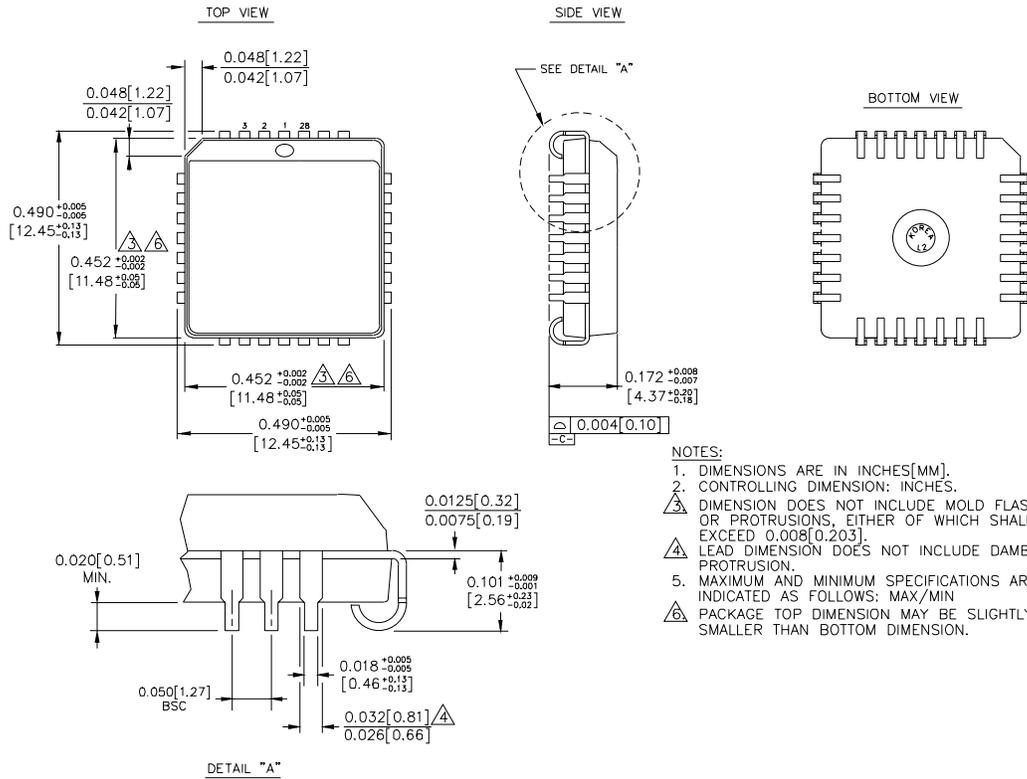
VCCT = 5.0V  $\pm$  10%; VEE = -4.75V to -5.5V (10H Version); VEE = -4.2V to -5.5V (100H Version)

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
tPLH	Propagation Delay to Output	1.7	4.8	1.7	4.8	1.7	4.8	ns	CL = 50pF CL = 200pF
tPHL		3.4	9.6	3.4	9.6	3.4	9.6		
tPLZ	Output Disable Time, $\overline{OEECL}$	3.7	6.5	3.7	6.5	3.7	6.5	ns	CL = 50pF CL = 200pF
tPHZ		5.4	13	5.4	13	5.4	13		
tPLZ	Output Disable Time, $\overline{OETTL}$	4.3	7.5	4.3	7.5	4.3	7.5	ns	CL = 50pF CL = 200pF
tPHZ		7.0	15	7.0	15	7.0	15		
tPZL	Output Enable Time, $\overline{OEECL}$	3.5	6.0	3.5	6.0	3.5	6.0	ns	CL = 50pF CL = 200pF
tPZH		5.0	12	5.0	12	5.0	12		
tPZL	Output Enable Time, $\overline{OETTL}$	4.2	7.0	4.2	7.0	4.2	7.0	ns	CL = 50pF CL = 200pF
tPZH		6.0	14	6.0	14	6.0	14		
tr	Output Rise/Fall Time 1.0V – 2.0V	—	1.2	—	1.2	—	1.2	ns	CL = 50pF CL = 200pF
tf		—	3.0	—	3.0	—	3.0		

**PRODUCT ORDERING CODE**

Ordering Code	Package Type	Operating Range
SY10H601JC	J28-1	Commercial
SY10H601JCTR	J28-1	Commercial
SY100H601JC	J28-1	Commercial
SY100H601JCTR	J28-1	Commercial

**28 LEAD PLCC (J28-1)**



- NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
  2. CONTROLLING DIMENSION: INCHES.
  3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
  4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
  5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
  6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

