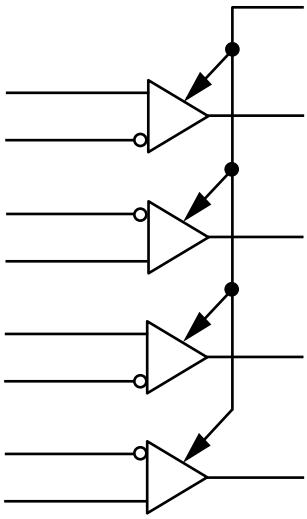
TRANSLATOR

Single 5V power supply

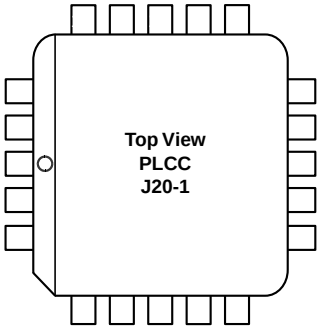
- **Propagation delay, 3.5ns typical**
- **Fully compatible with MC10H350**
- **Available in 20-pin PLCC package**

The SY10H350 consists of 4 translators with differential inputs and TTL outputs. The 3-state outputs can be disabled by applying a HIGH TTL logic level on the common OE input.

The SY10H350 is designed to be used primarily in systems incorporating both ECL and TTL logic operating off a common power supply. The separate V_{CC} power pins are not connected internally and thus isolate the noisy TTL V_{CC} runs from the relatively quiet ECL V_{CC} runs on the printed circuit board. The differential inputs allow the H350 to be used as an inverting or noninverting translator, or a differential line receiver. The H350 can also drive CMOS with the addition of a pullup resistor.



Pin	Function
$D_0 – D_3$	True PECL Inputs
$/D_0 – /D_3$	Inverted PECL Inputs
$Q_0 – Q_3$	TTL Outputs
V_{CCE}	PECL V_{CC} (5.0V)
V_{CCT}	TTL V_{CC} (5.0V)
GND	Ground
/OE	Output Enable



20-Pin PLCC (J20-1)

(1)

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10H350JC	J20-1	Commercial	SY10H350JC	Sn-Pb
SY10H350JCTR(2)	J20-1	Commercial	SY10H350JC	Sn-Pb
SY10H350JZ(3)	J20-1	Commercial	SY10H350JZ with Pb-Free bar-line indicator	Matte-Sn
SY10H350JZTR(2, 3)	J20-1	Commercial	SY10H350JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Contact factory for die availability. Dice are guaranteed at T_A = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

Symbol	Parameter	Value	Unit
V_{CC}	Power Supply Voltage	–0.5 to +7.0	V
V_I	PECL Input Voltage	0V to V_{CC}+0.5	V
V_O	Voltage Applied to Output at HIGH State	–0.5 to +5.5	V
I_O	Current Applied to Output at LOW State	Twice the Rated I_{OL}	mA
T_{LEAD}	Lead Temperature (soldering, 20sec.)	+260	°C
T_{store}	Storage Temperature	–65 to +150	°C
T_A	Operating Temperature	0 to +85	°C

NOTE:

1. Permanent device damage may occur if absolute maximum ratings are exceeded. This is a stress rating only and functional operation is not implied at conditions other than those detailed in the operational sections of this data sheet. Exposure to absolute maximum ratlng conditions for extended periods may affect device reliability.

L	L	H	L
L	H	L	H
L	Open	Open	L
H	X	X	Z
Open	X	X	Z

$_{CC}$ = 4.75V to 5.25V

Symbol	Parameter	$_A$ = 0°C		T_A = +25°C			T_A = +85°C		Unit	Condition
		Min.	Max.	Min.	Typ.	Max.	Min.	Max.		
I_{CC}	Power Supply Current TTL ECL	— —	20 12	— —	12 12	20 —	— —	20 12	mA	No output loads
V_{OH}	Output HIGH Voltage	2.7	—	2.7	—	—	2.7	—	V	I_{OH} = –3.0mA
V_{OL}	Output LOW Voltage	—	0.5	—	—	0.5	—	0.5	V	I_{OL} = 20mA
I_{IH} I_{INH}	Input HIGH Current (Pin 12) Reverse Current Others	— —	20 50	— —	— —	20 50	— —	20 50	µA µA	
I_{IL} I_{INL}	Input LOW Current (Pin 12) Forward Current Others	— —	–0.6 50	— —	— —	–0.6 50	— —	–0.6 50	mA µA	
I_{OS}	Output Short Circuit Current	–60	–150	–60	—	–150	–60	–150	mA	V_{OUT} = 0V
I_{OZH}	Output Disable Current HIGH	—	50	—	—	50	—	50	µA	V_{OUT} = 2.7V
I_{OZL}	Output Disable Current LOW	–50	+50	–50	—	+50	–50	+50	µA	V_{OUT} = 0.5
V_{CMR}	Common Mode Range	2.8	V_{CC}	2.8	—	V_{CC}	2.8	V_{CC}	V	
V_{PP}	Minimum Peak-to-Peak Input(1)	200	—	200	—	—	200	—	mV	
V_{IH}	Input HIGH Voltage (Pin 12)	2.0	—	2.0	—	—	2.0	—	V	
V_{IL}	Input LOW Voltage (Pin 12)	—	0.8	—	—	0.8	—	0.8	V	

Notes:

1. 200mV input guarantees full logic at output.
2. These values are for V_{cc} = 5.0V. Level Specifications will vary 1:1 V_{cc}.

V_{CC} = 4.75V to 5.25V

Symbol	Parameter	T_A = 0°C		T_A = +25°C			T_A = +85°C		Unit	Condition
		Min.	Max.	Min.	Typ.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay D to Output Q	1.5	5.0	1.5	3.5	5.0	1.5	5.0	ns	C_L = 50pF
t_{pdLZ} t_{pdHZ}	Output Disable Time(1)	2.0	8.0	2.0	—	8.0	2.0	8.0	ns	C_L = 50pF
t_{pdZL} t_{pdZH}	Output Enable Time(1)	2.0	8.0	2.0	—	8.0	2.0	8.0	ns	C_L = 50pF
t_r t_f	Output Rise/Fall Time (1.0V to 2.0V)	0.3	1.6	0.3	0.8	1.6	0.3	1.6	ns	C_L = 50pF

Notes:

1. Guaranteed, but not tested.

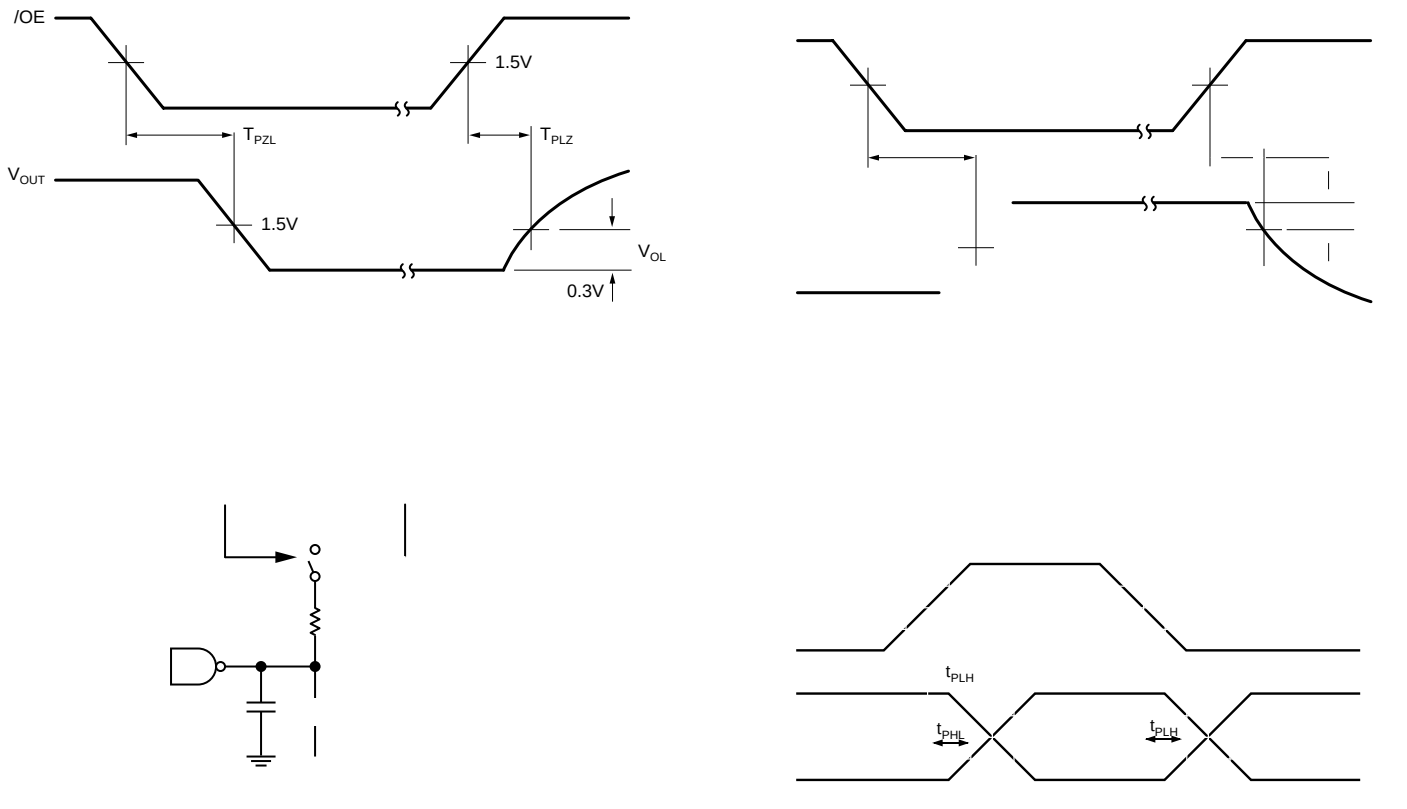
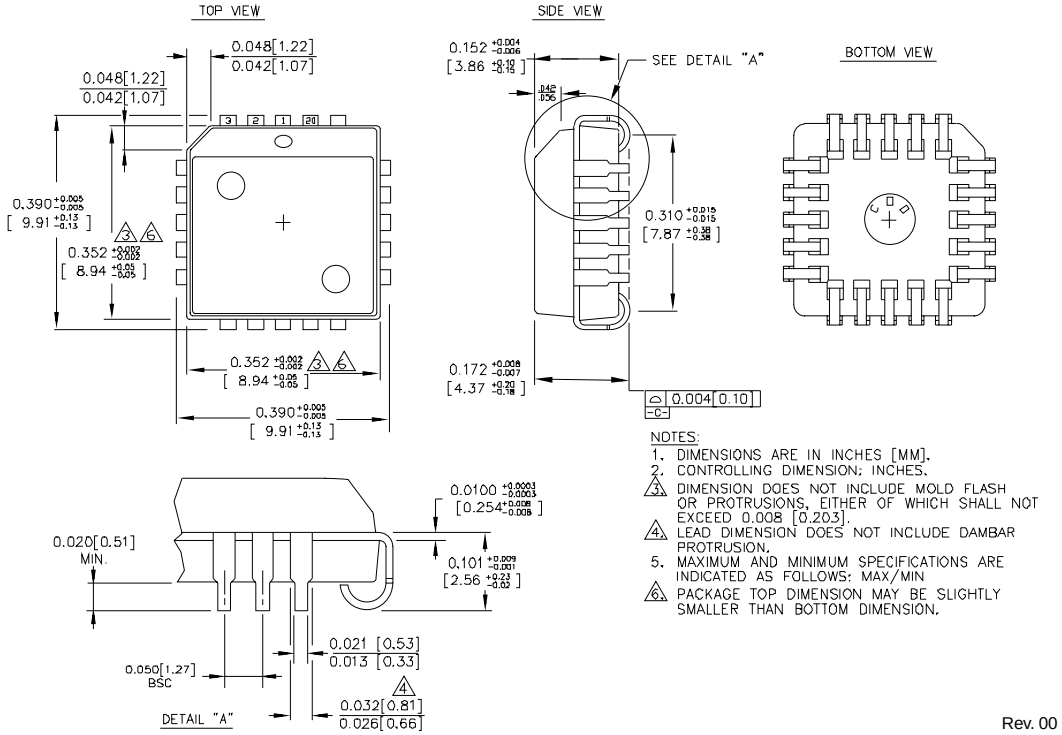


Figure 4. Propagation Delay and Transition Times



Rev. 00

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