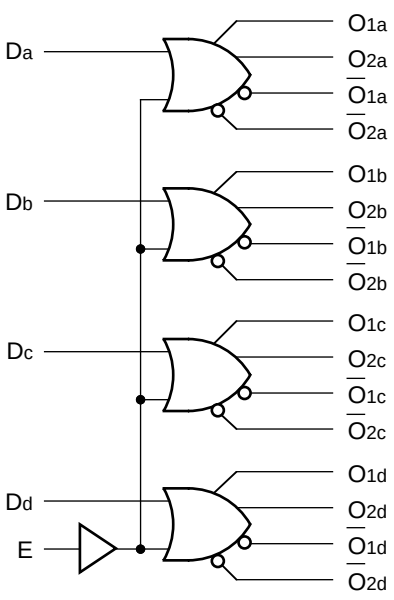
FEATURES

- **Max. propagation delay of 800ps**
- **Enable to Output max. of 950ps**
- **I_{EE} min. of –60mA**
- **Extended supply voltage option: V_{EE} = –4.2V to –5.5V**
- **Voltage and temperature compensation for improved noise immunity**
- **Internal 75kΩ input pull-down resistors**
- **50% faster than Fairchild 300K**
- **Function and pinout compatible with Fairchild F100K**
- **Available in 28-pin PLCC package**

DESCRIPTION

The SY100S313 offers four drivers with two OR and two NOR outputs, designed for use in high-performance ECL systems. The four drivers are controlled by a common Enable signal which is buffered to minimize input loading. If the D inputs are not used, the Enable signal can be used to drive sixteen 50Ω lines. All inputs have 75kΩ pulldown resistors and all outputs are buffered.

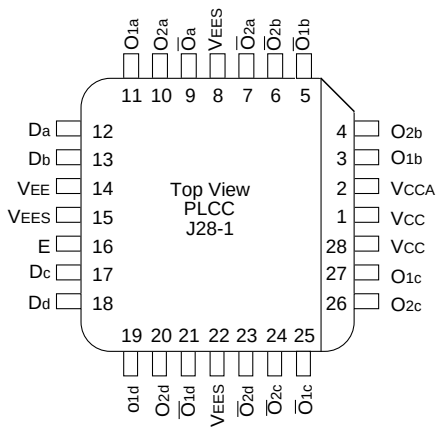
BLOCK DIAGRAM



PIN NAMES

Pin	Function
D_a – D_d	Data Inputs (n-1...5)
E	Enable Input
O_{na} – O_{nd}	Data Outputs
$\overline{O}_{na}$ – $\overline{O}_{nd}$	Complementary Data Outputs
V_{EES}	V_{EE} Substrate
V_{CCA}	V_{CCO} for ECL Outputs

PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S313JC	J28-1	Commercial	SY100S313JC	Sn-Pb
SY100S313JCTR[1]	J28-1	Commercial	SY100S313JC	Sn-Pb
SY100S313JZ[2]	J28-1	Commercial	SY100S313JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S313JZTR[1, 2]	J28-1	Commercial	SY100S313JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Tape and Reel.
2. Pb-Free package is recommended for new designs.

LOGIC EQUATION

$O = D + E$

$\overline{O} = \overline{D + E}$

DC ELECTRICAL CHARACTERISTICS

V_{EE} = –4.2V to –5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

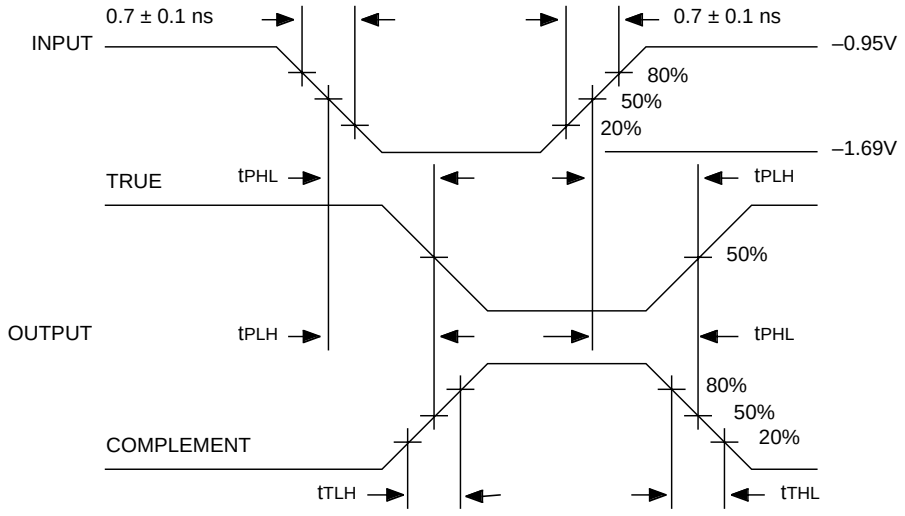
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current, All Inputs	—	—	200	µA	V_{IN} = V_{IH} (Max.)
I_{EE}	Power Supply Current	–60	–43	–20	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

V_{EE} = –4.2V to –5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

		T_A = 0°C		T_A = +25°C		T_A = +85°C			
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Max.	Unit	Condition
t_{PLH} t_{PHL}	Propagation Delay Data to Output	200	800	200	800	200	800	ps	
t_{PLH} t_{PHL}	Propagation Delay Enable to Output	300	950	300	950	300	950	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

TIMING DIAGRAM

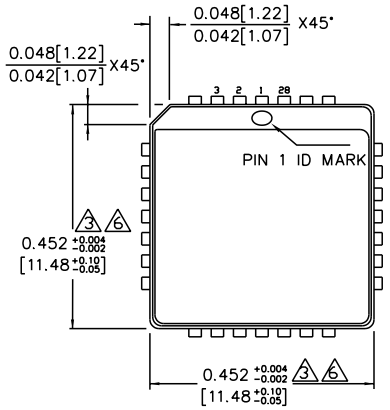


Propagation Delay and Transition Times

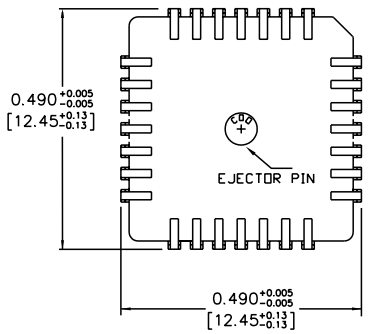
NOTE:

V_{EE} = –4.2V to –5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

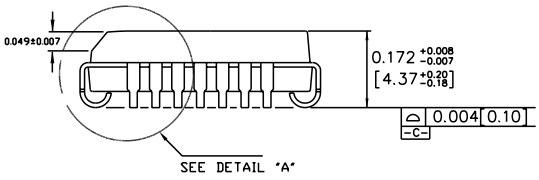
28-PIN PLCC (J28-1)



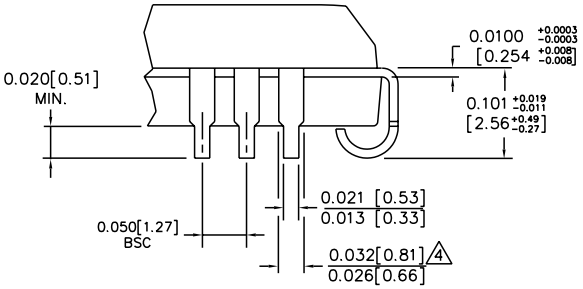
TOP VIEW



BOTTOM VIEW



SIDE VIEW



DETAIL "A"

Rev. A

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.

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