

### **FEATURES**

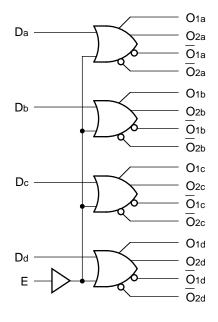
- Max. propagation delay of 800ps
- Enable to Output max. of 950ps
- IEE min. of -60mA
- Extended supply voltage option: VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75k $\Omega$  input pull-down resistors
- 50% faster than Fairchild 300K
- Function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

#### **DESCRIPTION**

**QUAD DRIVER** 

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  $50\Omega$  lines. All inputs have  $75k\Omega$  pulldown resistors and all outputs are buffered.

#### **BLOCK DIAGRAM**

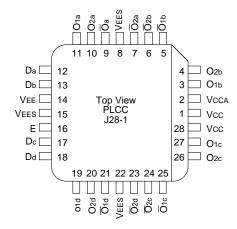


#### **PIN NAMES**

Pin	Function					
Da – Dd	Data Inputs (n-15)					
E	Enable Input					
Ona — Ond	Data Outputs					
Ona − Ond	Complementary Data Outputs					
VEES	VEE Substrate					
VCCA	Vcco for ECL Outputs					

Micrel, Inc. SY100S313

## **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 <sup>(1)</sup>	J28-1	Commercial	SY100S313JC	Sn-Pb	
SY100S313JZ <sup>(2)</sup>	J28-1	Commercial	SY100S313JZ with Pb-Free bar-line indicator	Matte-Sn	
SY100S313JZTR <sup>(1, 2)</sup>	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

VEE = -4.2V to -5.5V unless otherwise specified, VCC = VCCA = GND

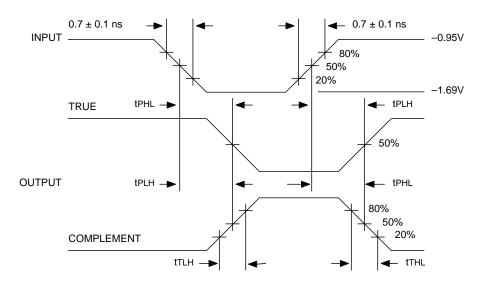
Symbol	Parameter	Min.	Тур.	Max.	Unit	Condition
IIН	Input HIGH Current, All Inputs	_	_	200	μΑ	VIN = VIH (Max.)
IEE	Power Supply Current	-60	-43	-20	mA	Inputs Open

### **AC ELECTRICAL CHARACTERISTICS**

VEE = -4.2V to -5.5V unless otherwise specified, VCC = VCCA = GND

		TA = 0°C		TA = +25°C		TA = +85°C			
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Max.	Unit	Condition
tPLH tPHL	Propagation Delay Data to Output	200	800	200	800	200	800	ps	
tPLH tPHL	Propagation Delay Enable to Output	300	950	300	950	300	950	ps	
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

#### TIMING DIAGRAM



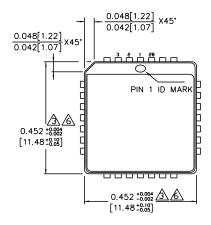
**Propagation Delay and Transition Times** 

#### NOTE:

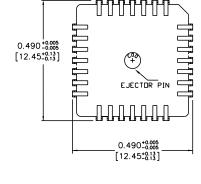
Vec = -4.2V to -5.5V unless otherwise specified, Vcc = Vcca = GND

SY100S313 Micrel, Inc.

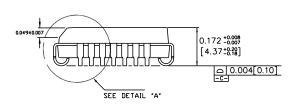
### 28-PIN PLCC (J28-1)



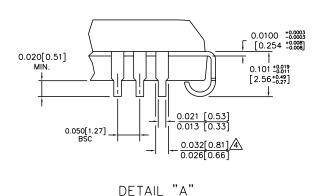
TOP VIEW



BOTTOM VIEW



SIDE VIEW



Rev. A

#### NOTES:

- DITES:
  DIMENSIONS ARE IN INCHES [MM].
  CONTROLLING DIMENSION: INCHES.
  DIMENSION DOES NOT INCLUDE MOLD FLASH
  OR PROTRUSIONS, EITHER OF WHICH SHALL NOT
  EXCEED 0.008 [0.203].
  LEAD DIMENSION DOES NOT INCLUDE DAMBAR
  PROTRUSION.
  MAXIMUM AND MINIMUM SPECIFICATIONS ARE
  INDICATED AS FOLLOWS: MAX/MIN
  ANCHAGE TOP DIMENSION MAY BE SLIGHTLY

- PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

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