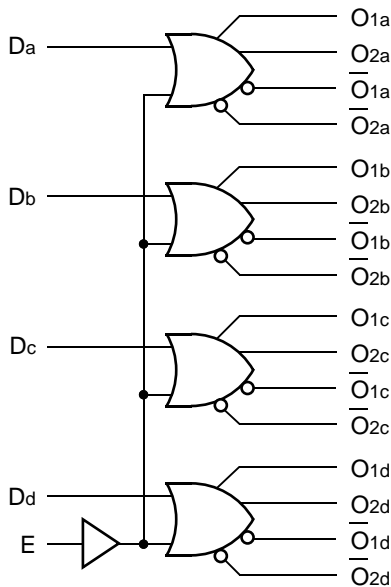


**FEATURES**

- 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 75KΩ input pull-down resistors
- 50% faster than Fairchild 300K
- Function and pinout compatible with Fairchild F100K
- Available in 24-pin CERPAC and 28-pin PLCC packages

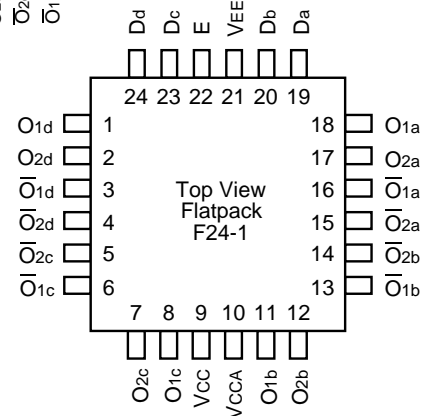
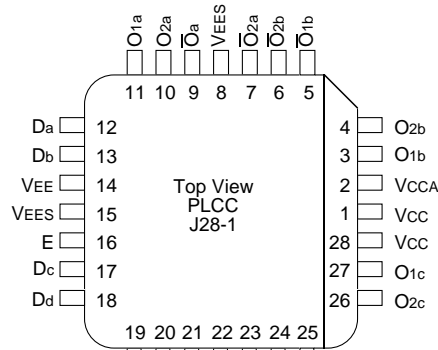
**BLOCK DIAGRAM**



**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.

**PIN CONFIGURATIONS**



**PIN NAMES**

Pin	Function
Da – Dd	Data Inputs (n-1...5)
E	Enable Input
O <sub>na</sub> – O <sub>nd</sub>	Data Outputs
$\overline{O}_{na}$ – $\overline{O}_{nd}$	Complementary Data Outputs
VEES	VEE Substrate
VCCA	Vcco for ECL Outputs

**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	$\mu A$	$V_{IN} = V_{IH} (Max.)$
$I_{EE}$	Power Supply Current	-60	-43	-20	mA	Inputs Open

**AC ELECTRICAL CHARACTERISTICS****CERPACK**

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

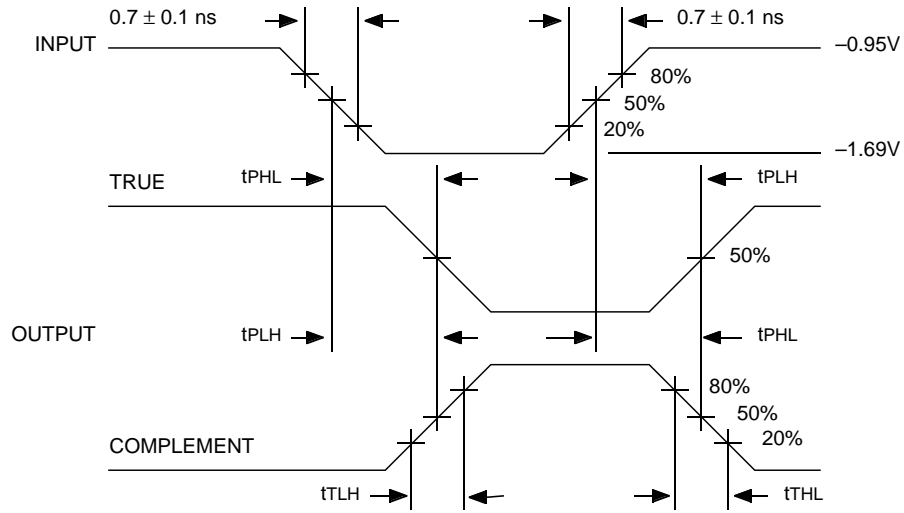
Symbol	Parameter	$T_A = 0^\circ C$		$T_A = +25^\circ C$		$T_A = +85^\circ C$		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
$t_{PLH}$ $t_{PHL}$	Propagation Delay Data to Output	200	850	200	850	200	850	ps	
$t_{PLH}$ $t_{PHL}$	Propagation Delay Enable to Output	300	1000	300	1000	300	1000	ps	
$t_{TLH}$ $t_{THL}$	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

**PLCC**

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

Symbol	Parameter	$T_A = 0^\circ C$		$T_A = +25^\circ C$		$T_A = +85^\circ C$		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
$t_{PLH}$ $t_{PHL}$	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**

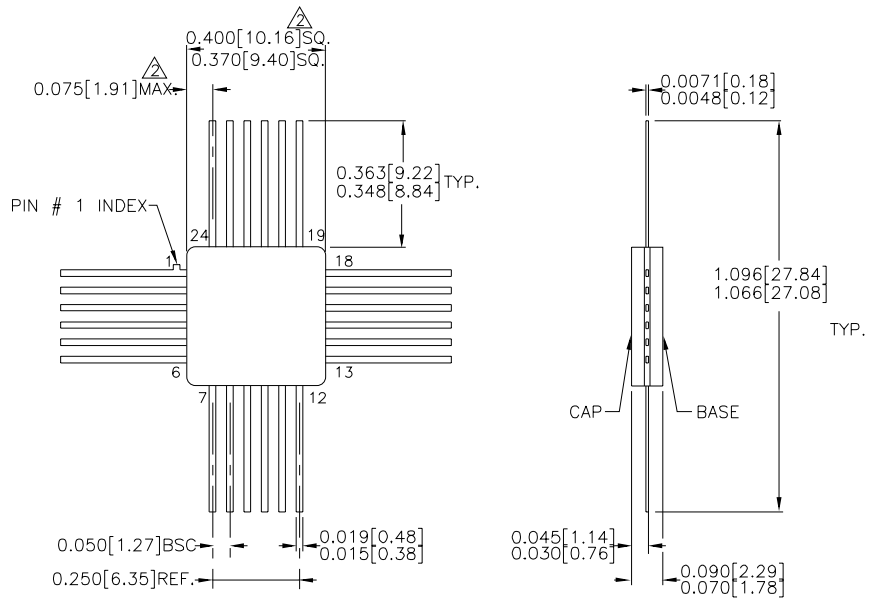
**NOTE:**

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

**PRODUCT ORDERING CODE**

Ordering Code	Package Type	Operating Range
SY100S313FC	F24-1	Commercial
SY100S313JC	J28-1	Commercial
SY100S313JCTR	J28-1	Commercial

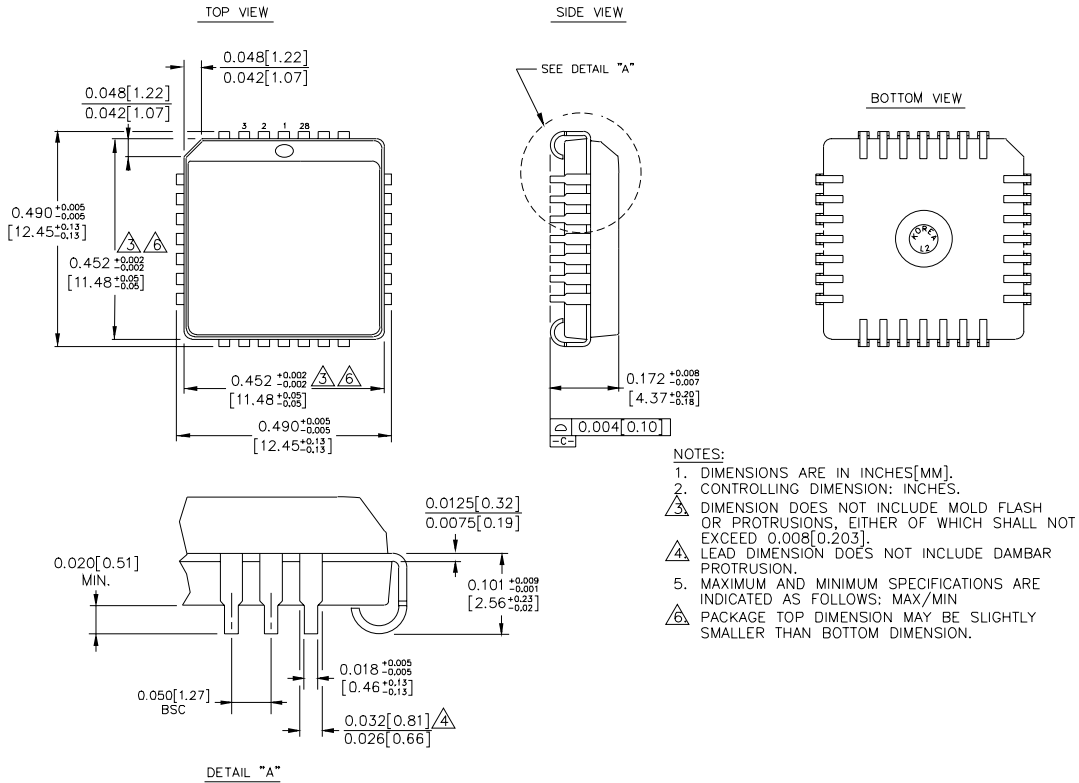
**24 LEAD CERPACK (F24-1)**



- NOTES:**
1. DIMENSIONS ARE IN INCHES[MM].
  2. THIS DIMENSION INCLUDES GLASS PROTRUSION AND CAP TO BASE ALIGNMENT TOLERANCES.
  3. DIMENSIONS SHOWN ARE MAX/MIN, WHERE NOTED.

Rev. 03

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



Rev. 03

**MICREL-SYNERGY 3250 SCOTT BOULEVARD SANTA CLARA CA 95054 USA**

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