

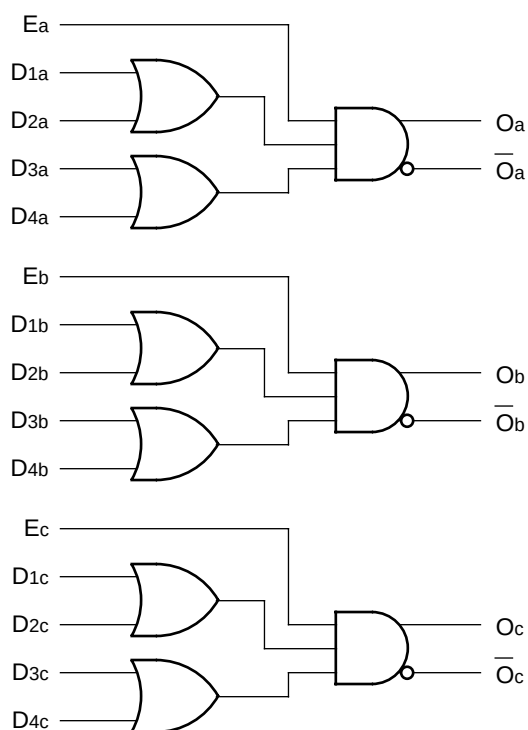
FEATURES

- Max. propagation delay of 900ps
- IEE min. of -48mA
- Extended supply voltage option:
VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75kΩ input pull-down resistors
- Approximately 40% lower power than Fairchild
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC package

DESCRIPTION

The SY100S317 is a set of ultra-fast, triple 2-wide OR/AND gates designed for use in high-performance ECL systems. This device offers both true and complement outputs. The inputs on this device have 75kΩ pull-down resistors.

BLOCK DIAGRAM



PIN NAMES

Pin	Function
Dna – Dnc	Data Inputs (n = 1...4)
Ea – Ec	Enable Inputs
Oa – Oc	Data Outputs
$\overline{Oa} - \overline{Oc}$	Complementary Data Outputs
VEES	VEE Substrate
VCCA	VCCO for ECL Outputs

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S317JC	J28-1	Commercial	SY100S317JC	Sn-Pb
SY100S317JCTR ⁽¹⁾	J28-1	Commercial	SY100S317JC	Sn-Pb
SY100S317JZ ⁽²⁾	J28-1	Commercial	SY100S317JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S317JZTR ^(1, 2)	J28-1	Commercial	SY100S317JZ with Pb-Free bar-line indicator	Matte-Sn

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

DC ELECTRICAL CHARACTERISTICS

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

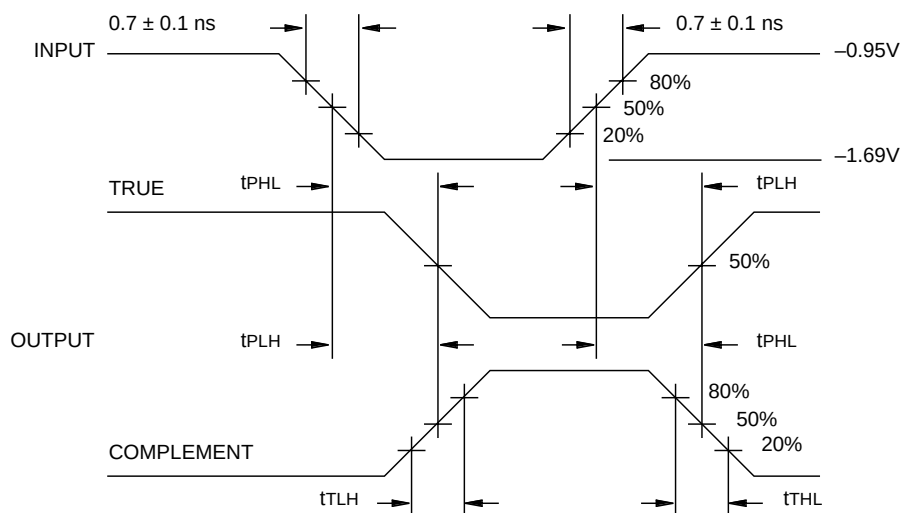
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current, All Inputs	—	—	200	μA	$V_{IN} = V_{IH} (Max.)$
I_{EE}	Power Supply Current	-48	-32	-22	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

$V_{EE} = -4.2V$ 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	300	900	300	900	300	900	ps	
t_{PLH} t_{PHL}	Propagation Delay Enable to Output	300	700	300	700	300	700	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, $V_{CC} = V_{CCA} = GND$

The drawing shows the top and side views of a 28-pin DIP package. The top view includes dimensions for the body width and length, with corner chamfers. The side view shows the package height and pin dimensions.

TOP VIEW

Dimensions:

- Top width: $\frac{0.048[1.22]}{0.042[1.07]} \times 45^\circ$
- Left side width: $0.452 \begin{smallmatrix} +0.004 \\ -0.002 \end{smallmatrix}$ [11.48 $\begin{smallmatrix} +0.10 \\ -0.05 \end{smallmatrix}$]
- Bottom width: $0.452 \begin{smallmatrix} +0.004 \\ -0.002 \end{smallmatrix}$ [11.48 $\begin{smallmatrix} +0.10 \\ -0.05 \end{smallmatrix}$]
- Pin 1 ID MARK
- Pin numbers: 3, 2, 1, 28

SIDE VIEW

Dimensions:

- Pin pitch: 0.049 ± 0.007
- Package height: $0.172 \begin{smallmatrix} +0.008 \\ -0.007 \end{smallmatrix}$ [4.37 $\begin{smallmatrix} +0.20 \\ -0.18 \end{smallmatrix}$]
- Pin width: 0.004 [0.10]
- Pin thickness: $-C-$
- SEE DETAIL "A"

Technical drawing showing the bottom view of a component. The drawing includes dimensions and a detail callout 'A'.

Dimensions and tolerances shown:

- Overall width: $0.490^{+0.005}_{-0.005}$
- Overall height: $[12.45^{+0.13}_{-0.13}]$
- Feature 'A' dimensions:
 - Width: $0.021 [0.53]$
 - Height: $0.013 [0.33]$
 - Width: $0.032 [0.81]$
 - Height: $0.026 [0.66]$
- Feature 'A' detail dimensions:
 - Width: $0.0100^{+0.0003}_{-0.0003}$
 - Height: $[0.254^{+0.008}_{-0.008}]$
 - Width: $0.101^{+0.019}_{-0.011}$
 - Height: $[2.56^{+0.49}_{-0.27}]$
- Feature 'A' detail dimensions (continued):
 - Width: 1.27
 - Height: $0.021 [0.53]$
 - Height: $0.013 [0.33]$
 - Width: $0.032 [0.81]$
 - Height: $0.026 [0.66]$

Rev. A

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.

4

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Micrel:](#)

[SY100S317JZ](#) [SY100S317JZ TR](#)