

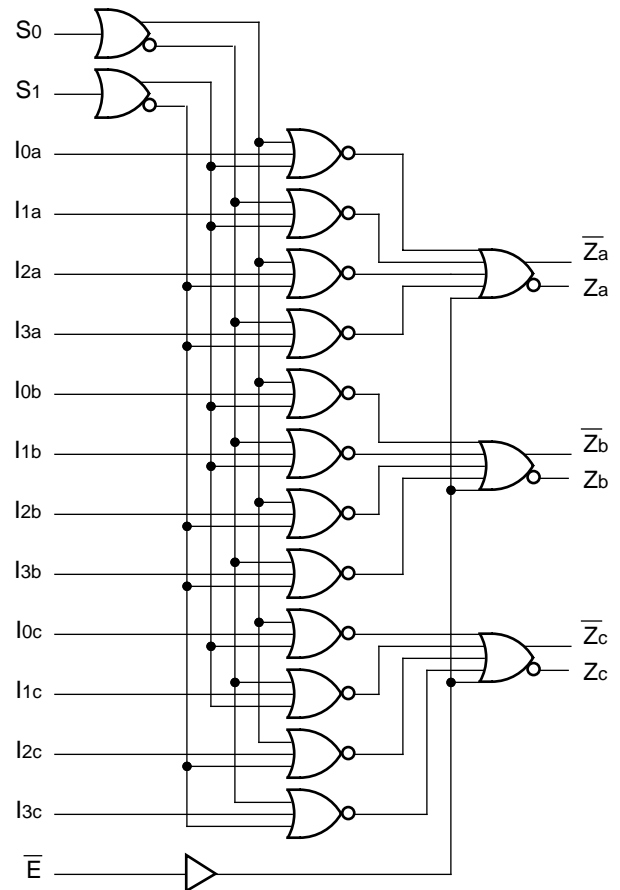
**FEATURES**

- Max. propagation delay of 1000ps
- IEE min. of -68mA
- Industry standard 100K ECL levels
- Extended supply voltage option:  
VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75kΩ input pull-down resistors
- 40% faster than Fairchild
- 40% lower power than Fairchild
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC packages

**DESCRIPTION**

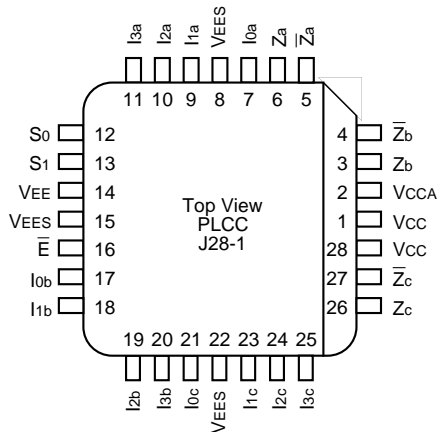
The SY100S371 is an ultra-fast triple 4-input multiplexer with true and complementary outputs designed for use in high-performance ECL systems. The multiplexer is controlled by common select inputs S0 and S1. A logic HIGH on the Enable ( $\bar{E}$ ) control input takes the outputs to a logic LOW. The inputs on the device have 75kΩ pull-down resistors.

**BLOCK DIAGRAM**



**PACKAGE/ORDERING INFORMATION**

**Ordering Information**



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

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S371JC	J28-1	Commercial	SY100S371JC	Sn-Pb
SY100S371JCTR <sup>(1)</sup>	J28-1	Commercial	SY100S371JC	Sn-Pb
SY100S371JZ <sup>(2)</sup>	J28-1	Commercial	SY100S371JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S371JZTR <sup>(1, 2)</sup>	J28-1	Commercial	SY100S371JZ with Pb-Free bar-line indicator	Matte-Sn

**Notes:**

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

**PIN NAMES**

Pin	Function
I0x – I3x	Data Inputs (x = a, b or c)
S0, S1	Select Inputs
$\bar{E}$	Enable Input (Active LOW)
Za – Zc	Data Outputs
$\bar{Z}a - \bar{Z}c$	Complementary Data Outputs
VEES	VEE Substrate
VCCA	VCCo for ECL Outputs

**TRUTH TABLE<sup>(1)</sup>**

Inputs			Outputs
$\bar{E}$	S0	S1	Zn
L	L	L	I0X
L	H	L	I1X
L	L	H	I2X
L	H	H	I3X
H	X	X	L

**Note:**

1. H = HIGH Voltage Level  
L = LOW Voltage Level  
X = Don't Care

### DC ELECTRICAL CHARACTERISTICS

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

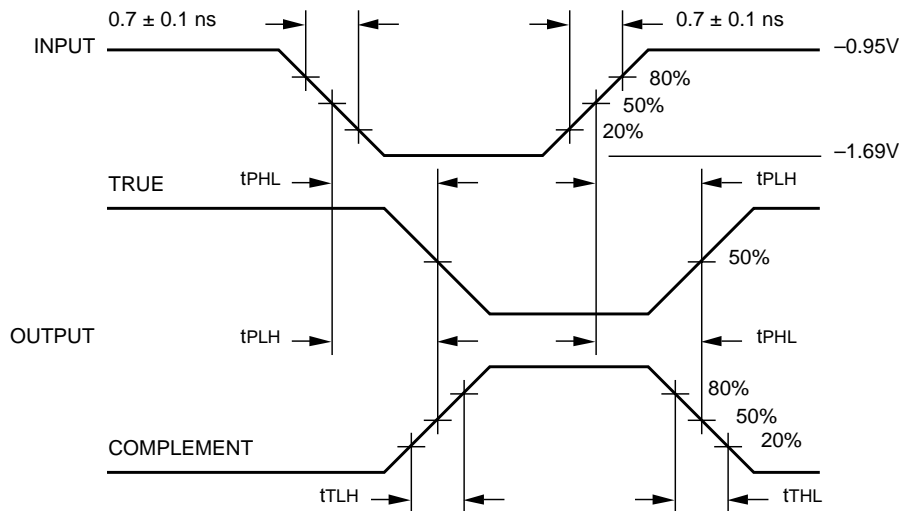
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
$I_{IH}$	Input HIGH Current $I_{OX} - I_{3X}$ $S_0, S_1, \bar{E}$	—	—	250 300	$\mu A$	$V_{IN} = V_{IH} (Max.)$
$I_{EE}$	Power Supply Current	-68	-48	-34	mA	Inputs Open

### 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 $I_{OX} - I_{3X}$ to Output	300	1000	300	1000	300	1000	ps	
$t_{PLH}$ $t_{PHL}$	Propagation Delay $S_0, S_1$ to Output	400	1400	400	1400	400	1400	ps	
$t_{PLH}$ $t_{PHL}$	Propagation Delay $S_0, S_1$ to Output	400	1300	400	1300	400	1300	ps	
$t_{TLH}$ $t_{THL}$	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

### TIMING DIAGRAM

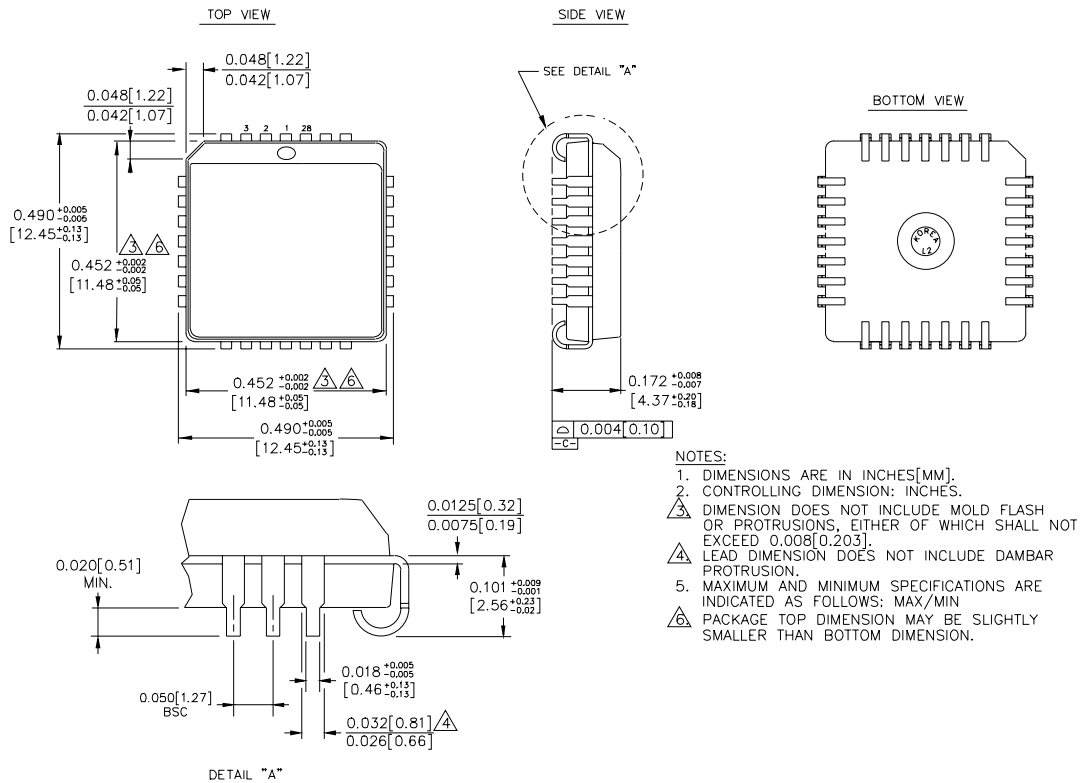


Propagation Delay and Transition Times

**Note:**

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

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



Rev. 03

**MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA**

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

The information furnished by Micrel in this datasheet is believed to be accurate and reliable. However, no responsibility is assumed by Micrel for its use. Micrel reserves the right to change circuitry and specifications at any time without notification to the customer.

Micrel Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of Micrel Products for use in life support appliances, devices or systems is at Purchaser's own risk and Purchaser agrees to fully indemnify

Micrel for any damages resulting from such use or sale.

© 2006 Micrel, Incorporated.