

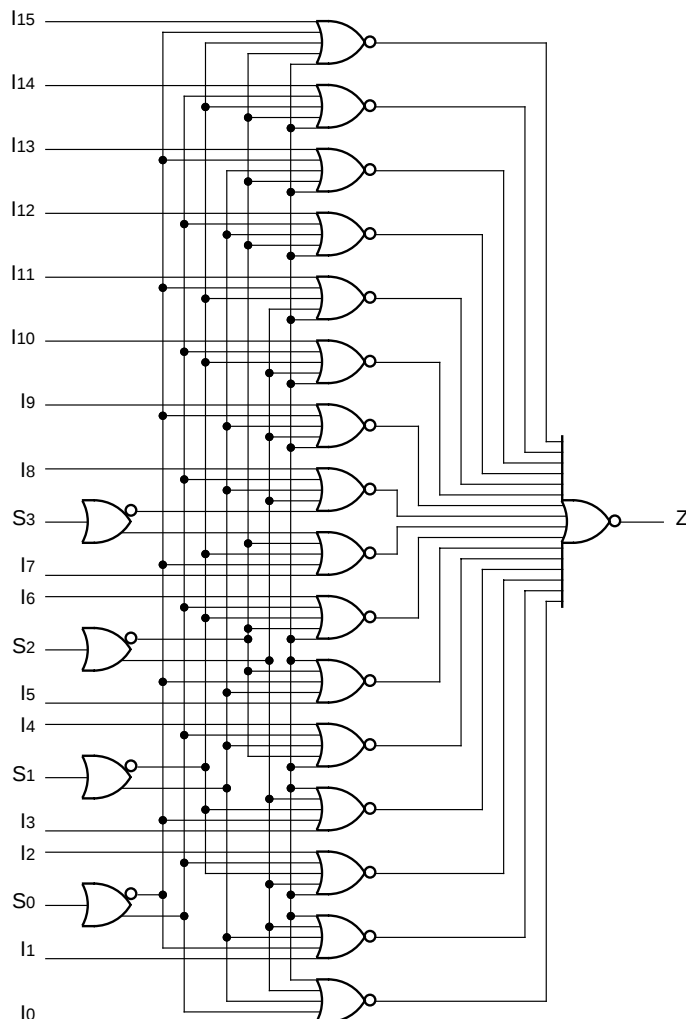
FEATURES

- Max. propagation delay of 1300ps
- IEE min. of -63mA
- Industry standard 100K ECL levels
- Extended supply voltage option:
V_{EE} = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75k Ω input pull-down resistors
- 70% faster than Fairchild
- 40% lower power than Fairchild
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC packages

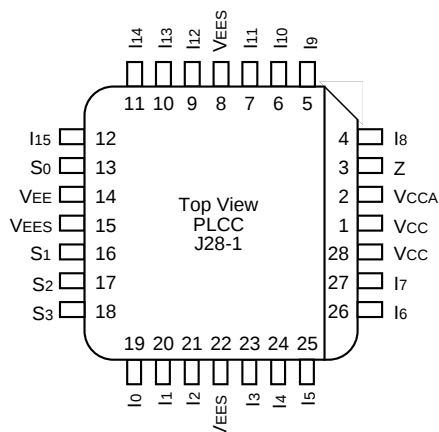
DESCRIPTION

The SY100S364 is a 16-input multiplexer designed for use in high-performance ECL systems. The four Data Select inputs (S₀, S₁, S₂, S₃) determine the bit from the 16 inputs (I_n) that will be passed on to the output as shown in the Truth Table. The output data polarity is the same as the input. The inputs on the device have 75k Ω pull-down resistors.

BLOCK DIAGRAM



PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S364JC	J28-1	Commercial	SY100S364JC	Sn-Pb
SY100S364JCTR ⁽¹⁾	J28-1	Commercial	SY100S364JC	Sn-Pb
SY100S364JZ ⁽²⁾	J28-1	Commercial	SY100S364JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S364JZTR ^(1, 2)	J28-1	Commercial	SY100S364JZ 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
I0 – I15	Data Inputs
S0 – S3	Select Inputs
Z	Data Output
VEES	VEE Substrate
VCCA	Vcco for ECL Outputs

TRUTH TABLE⁽¹⁾

Select Inputs				Output
S0	S1	S2	S3	Z
L	L	L	L	I0
H	L	L	L	I1
L	H	L	L	I2
H	H	L	L	I3
L	L	H	L	I4
H	L	H	L	I5
L	H	H	L	I6
H	H	H	L	I7
L	L	L	H	I8
H	L	L	H	I9
L	H	L	H	I10
H	H	L	H	I11
L	L	H	H	I12
H	L	H	H	I13
L	H	H	H	I14
H	H	H	H	I15

NOTE:

1. H = HIGH Voltage Level
L = LOW Voltage Level

DC ELECTRICAL CHARACTERISTICS

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

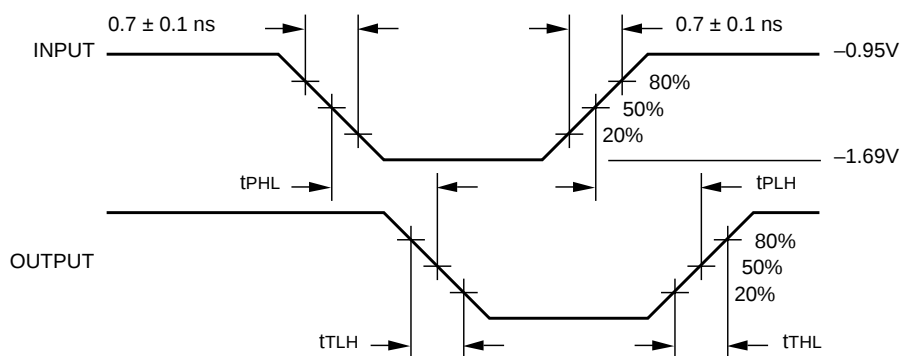
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current	—	—	200	μA	$V_{IN} = V_{IH} (Max.)$
	I_n	—	—	200		
	S_0, S_1	—	—	200		
	S_2, S_3	—	—	200		
I_{EE}	Power Supply Current	-63	-45	-30	mA	Inputs Open

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 $I_0 - I_{15}$ to Output	400	1300	400	1300	400	1300	ps	
t_{PLH} t_{PHL}	Propagation Delay S_0, S_1 to Output	400	1800	400	1800	400	1800	ps	
t_{PLH} t_{PHL}	Propagation Delay S_2, S_3 to Output	400	1600	400	1600	400	1600	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; $V_{CC} = V_{CCA} = GND$

0.048[1.22]
0.042[1.07] X45°

3 2 1 28

PIN 1 ID MARK

0.452 $\begin{smallmatrix} +0.004 \\ -0.002 \end{smallmatrix}$
[11.48 $\begin{smallmatrix} +0.10 \\ -0.05 \end{smallmatrix}$]

3 6

0.452 $\begin{smallmatrix} +0.004 \\ -0.002 \end{smallmatrix}$
[11.48 $\begin{smallmatrix} +0.10 \\ -0.05 \end{smallmatrix}$]

3 6

Technical drawing of a 10-pin connector. The drawing shows a side view of the connector with 10 pins. Dimensions are provided for the overall width, pin pitch, and pin height. A detail callout 'SEE DETAIL "A"' points to the pin profile.

Dimensions:

- Overall width: 0.049 ± 0.007
- Pin pitch: 0.172 ± 0.008
- Pin height: $[4.37 \pm 0.20]$
- Pin width: 0.004
- Pin thickness: 0.10

SEE DETAIL "A"

Technical drawing of a mechanical part with dimensions and tolerances:

- Overall width: $0.020 [0.51]$ MIN.
- Overall height: 0.100 (+0.003, -0.003)
- Top surface width: 0.254 (+0.008, -0.008)
- Top surface height: 0.101 (+0.019, -0.011)
- Top surface width (inner): 2.56 (+0.49, -0.27)
- Bottom surface width: $0.021 [0.53]$
- Bottom surface width: $0.013 [0.33]$
- Bottom surface width: $0.050 [1.27]$ BSC
- Bottom surface width: $0.032 [0.81]$
- Bottom surface width: $0.026 [0.66]$
- Bottom surface width: $0.026 [0.66]$ (with a triangle symbol and the number 4)

NOTES:

- 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.

Rev. A

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