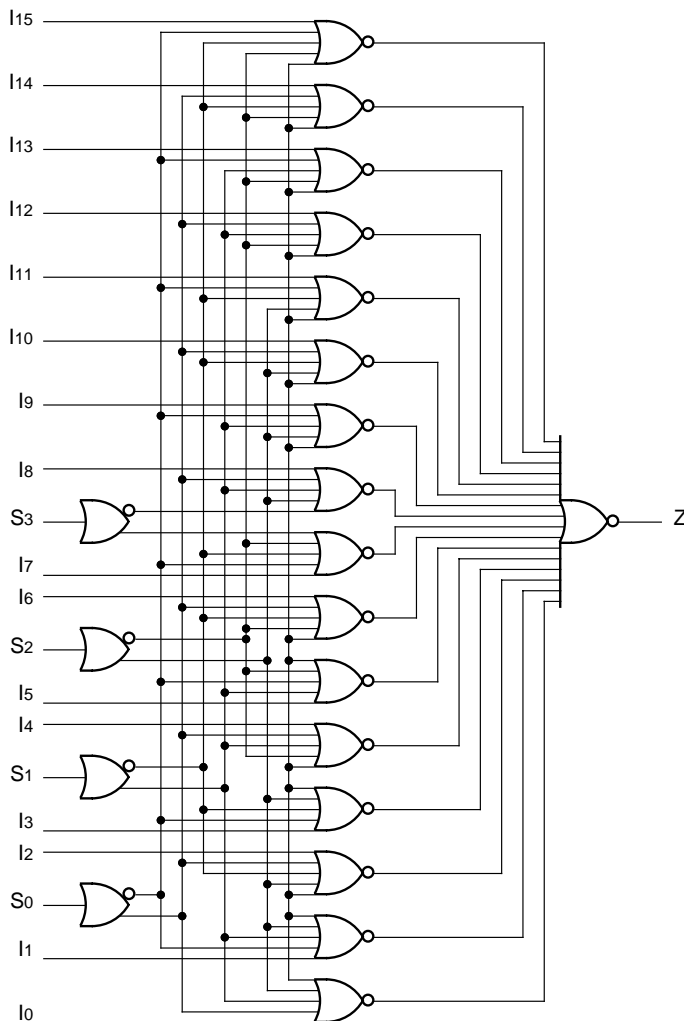


DESCRIPTION

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 75KΩ pull-down resistors.

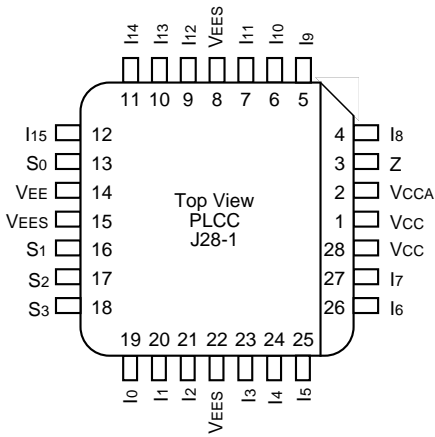
- Max. propagation delay of 1300ps
- IEE min. of -63mA
- Industry standard 100K ECL levels
- Extended supply voltage option:
V_{EE} = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75KΩ input pull-down resistors
- 70% faster than Fairchild
- 40% lower power than Fairchild
- Function and pinout compatible with Fairchild F100K
- Available in 24-pin CERPACK and 28-pin PLCC packages

BLOCK DIAGRAM

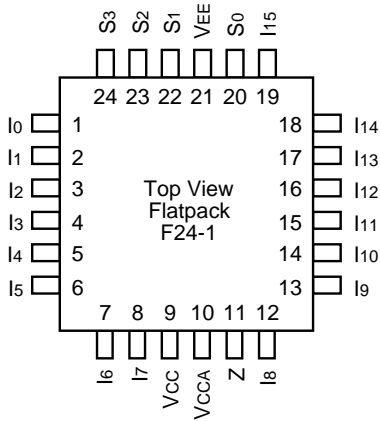


PACKAGE/ORDERING INFORMATION

Ordering Information



28-Pin PLCC (J28-1)



24-Pin Cerpack (F24-1)

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S364FC	F24-1	Commercial	SY100S364FC	Sn-Pb
SY100S364FCTR ⁽¹⁾	F24-1	Commercial	SY100S364FC	Sn-Pb
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

Select Inputs

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

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

Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I _{IH}	Input HIGH Current I _n S0, S1 S2, S3	—	—	200	μA	V _{IN} = V _{IH} (Max.)
I _{EE}	Power Supply Current	-63	-45	-30	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

CERPACK

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

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t _{PLH} t _{PHL}	Propagation Delay I0 – I15 to Output	400	1400	400	1400	400	1400	ps	
t _{PLH} t _{PHL}	Propagation Delay S0, S1 to Output	400	1900	400	1900	400	1900	ps	
t _{PLH} t _{PHL}	Propagation Delay S2, S3 to Output	400	1700	400	1700	400	1700	ps	
t _{TLH} t _{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

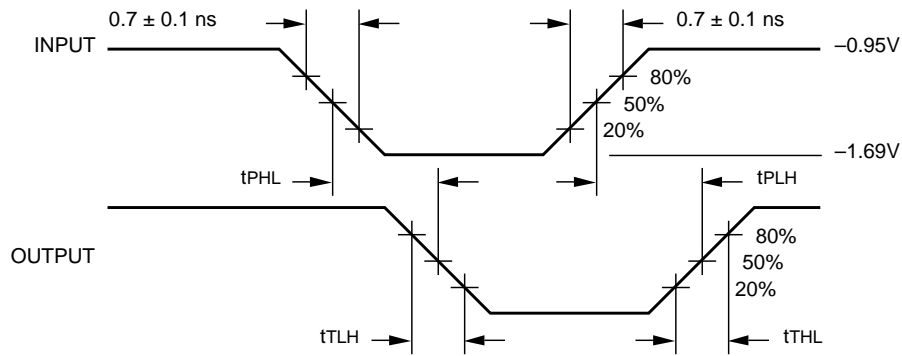
AC ELECTRICAL CHARACTERISTICS

PLCC

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

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
tPLH tPHL	Propagation Delay I0 – I15 to Output	400	1300	400	1300	400	1300	ps	
tPLH tPHL	Propagation Delay S0, S1 to Output	400	1800	400	1800	400	1800	ps	
tPLH tPHL	Propagation Delay S2, S3 to Output	400	1600	400	1600	400	1600	ps	
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

TIMING DIAGRAM

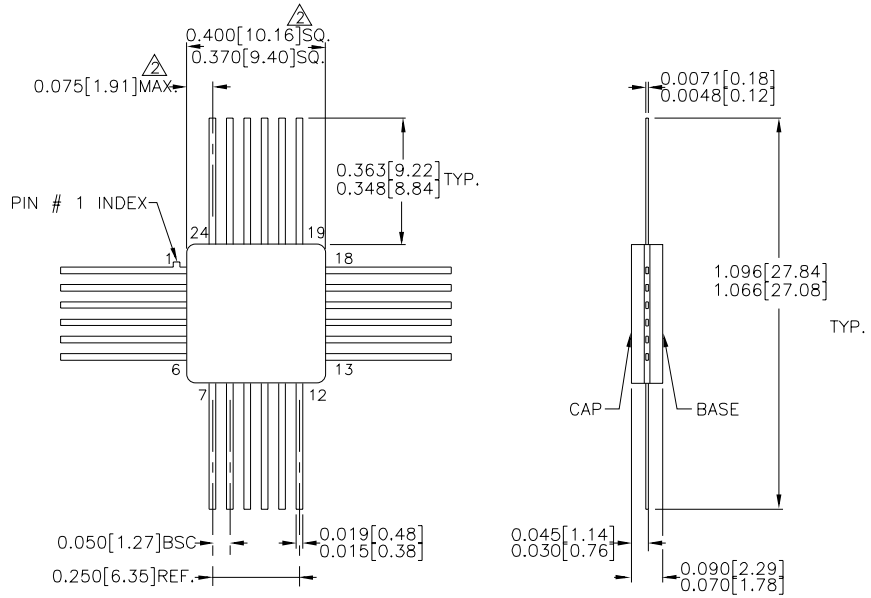


Propagation Delay and Transition Times

Note:

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

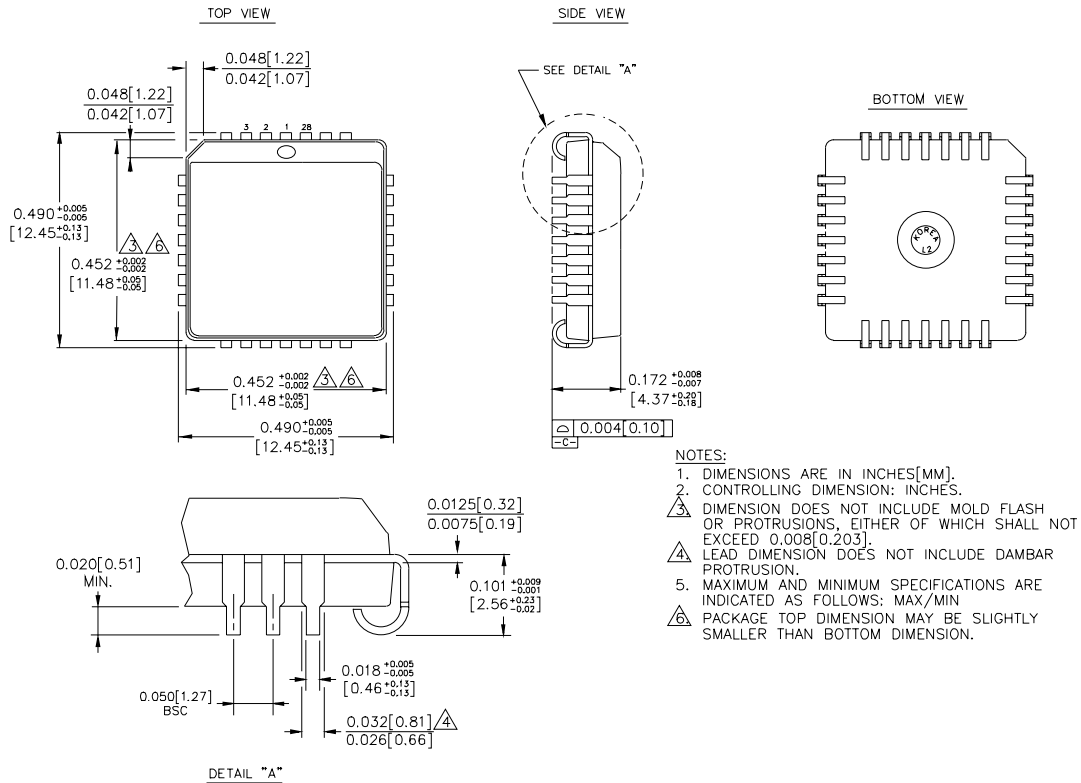
24-PIN CERPACK (F24-1)



- 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-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>

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