

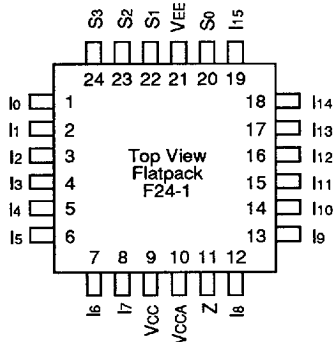
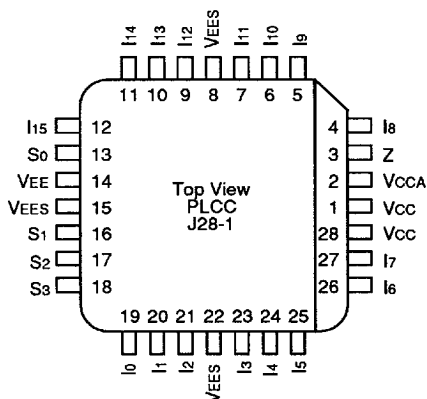
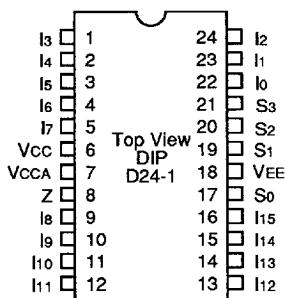
FEATURES

- Max. propagation delay of 1300ps
- IEE min. of -63mA
- ESD protection of 2000V
- Industry standard 100K ECL levels
- Extended supply voltage option:
— VEE = -4.2V to -5.46V
- Voltage and temperature compensation for improved noise immunity
- Internal 75K Ω input pull-down resistors
- 70% faster than National or Signetics
- 40% lower power than National or Signetics
- Function and pinout compatible with National and Signetics F100K
- Available in CERDIP, CERPACK and PLCC

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.

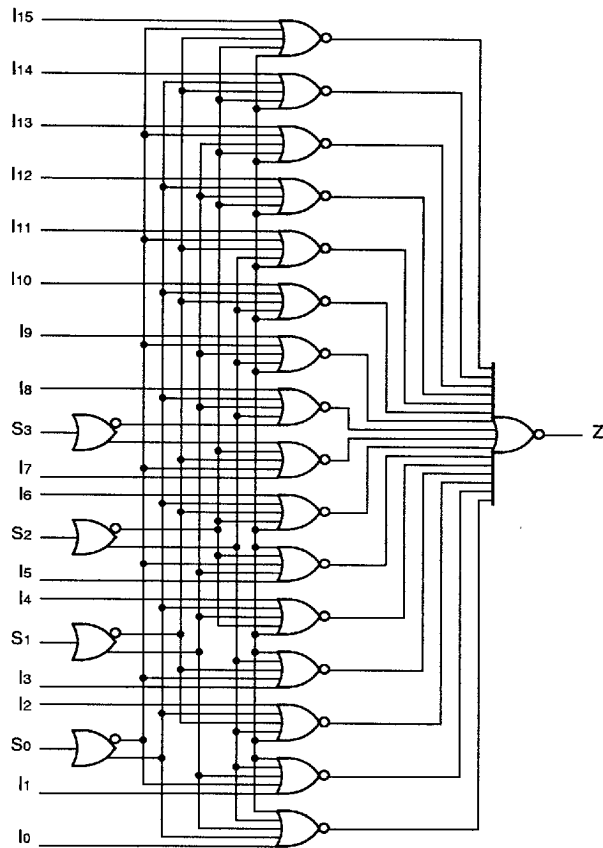
PIN CONFIGURATIONS



PIN NAMES

Label	Function
I ₀ – I ₁₅	Data Inputs
S ₀ – S ₃	Select Inputs
Z	Data Output

BLOCK DIAGRAM



TRUTH TABLE⁽¹⁾

Select Inputs				Output
S ₀	S ₁	S ₂	S ₃	Z
L	L	L	L	I ₀
H	L	L	L	I ₁
L	H	L	L	I ₂
H	H	L	L	I ₃
L	L	H	L	I ₄
H	L	H	L	I ₅
L	H	H	L	I ₆
H	H	H	L	I ₇
L	L	L	H	I ₈
H	L	L	H	I ₉
L	H	L	H	I ₁₀
H	H	L	H	I ₁₁
L	L	H	H	I ₁₂
H	L	H	H	I ₁₃
L	H	H	H	I ₁₄
H	H	H	H	I ₁₅

NOTE:

1. H = HIGH Voltage Level

L = LOW Voltage Level

DC ELECTRICAL CHARACTERISTICS

V_{EE} = -4.2V to -5.46V unless otherwise specified; V_{CC} = V_{CCA} = GND, T_A = 0°C to +85°C

Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I _{IH}	Input HIGH Current I _n S ₀ , S ₁ S ₂ , S ₃	—	—	200	μA	V _{IN} = V _{IH} (Max.)
I _{EE}	Power Supply Current	-63	-45	-30	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

CERDIP

V_{EE} = -4.2V to -5.46V unless otherwise specified; V_{CC} = V_{CCA} = GND, T_A = 0°C to +85°C

Symbol	Parameter	T _A = 0°C		T _A = +25°C		T _A = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
t _{PLH} t _{PHL}	Propagation Delay I ₀ – I ₁₅ to Output	400	1500	400	1500	400	1500	ps
t _{PLH} t _{PHL}	Propagation Delay S ₀ , S ₁ to Output	400	1900	400	1900	400	1900	ps
t _{PLH} t _{PHL}	Propagation Delay S ₂ , S ₃ 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 (CONT'D.)

CERPACK

$V_{EE} = -4.2V$ to $-5.46V$ unless otherwise specified; $V_{CC} = V_{CCA} = GND$, $T_A = 0^\circ C$ to $+85^\circ C$

Symbol	Parameter	$T_A = 0^\circ C$		$T_A = +25^\circ C$		$T_A = +85^\circ C$		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
tPLH tPHL	Propagation Delay I ₀ – I ₁₅ to Output	400	1400	400	1400	400	1400	ps
tPLH tPHL	Propagation Delay S ₀ , S ₁ to Output	400	1900	400	1900	400	1900	ps
tPLH tPHL	Propagation Delay S ₂ , S ₃ to Output	400	1700	400	1700	400	1700	ps
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps

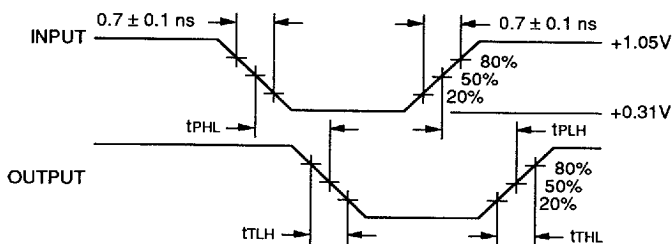
PLCC

$V_{EE} = -4.2V$ to $-5.46V$ unless otherwise specified; $V_{CC} = V_{CCA} = GND$, $T_A = 0^\circ C$ to $+85^\circ C$

Symbol	Parameter	$T_A = 0^\circ C$		$T_A = +25^\circ C$		$T_A = +85^\circ C$		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
tPLH tPHL	Propagation Delay I ₀ – I ₁₅ to Output	400	1300	400	1300	400	1300	ps
tPLH tPHL	Propagation Delay S ₀ , S ₁ to Output	400	1800	400	1800	400	1800	ps
tPLH tPHL	Propagation Delay S ₂ , S ₃ 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

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TIMING DIAGRAM



Propagation Delay and Transition Times

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY100S364DC	D24-1	Commercial
SY100S364FC	F24-1	Commercial
SY100S364JC	J28-1	Commercial