

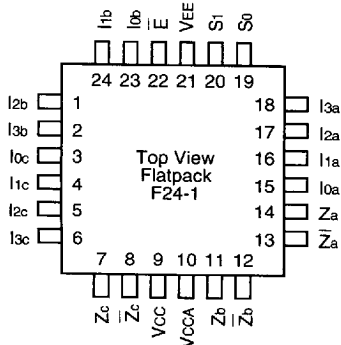
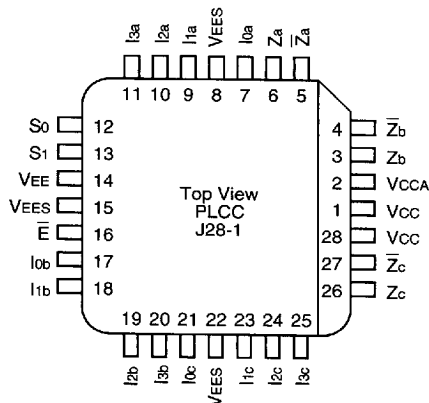
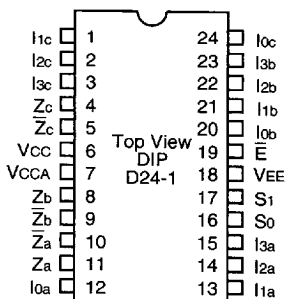
FEATURES

- Max. propagation delay of 1000ps
- IEE min. of -68mA
- ESD protection of 2000V
- Industry standard 100K ECL levels
- Extended supply voltage option:
VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75K Ω input pull-down resistors
- 40% 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 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 (E) control input takes the outputs to a logic LOW. The inputs on the device have 75K Ω pull-down resistors.

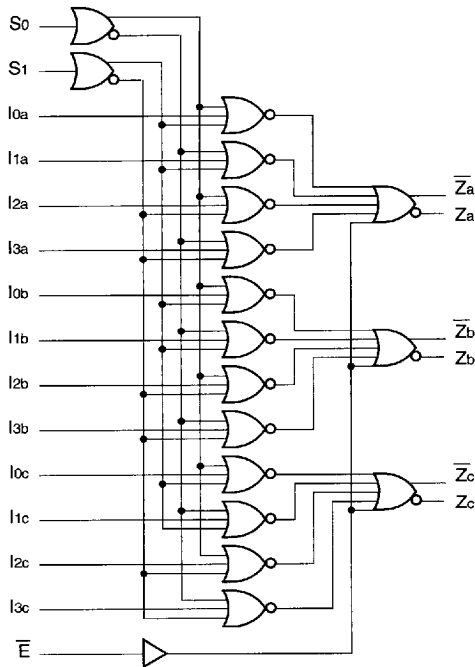
PIN CONFIGURATIONS



PIN NAMES

Label	Function
I _{0x} - I _{3x}	Data Inputs (x = a, b or c)
S ₀ , S ₁	Select Inputs
$\bar{E}$	Enable Input (Active LOW)
Z _a - Z _c	Data Outputs
$\bar{Z}_a$ - $\bar{Z}_c$	Complementary Data Outputs
VEES	VEE Substrate
VCCA	VCCo for ECL Outputs

BLOCK DIAGRAM



TRUTH TABLE⁽¹⁾

Inputs			Outputs
$\bar{E}$	S_0	S_1	Z_n
L	L	L	I_{0X}
L	H	L	I_{1X}
L	L	H	I_{2X}
L	H	H	I_{3X}
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; $V_{CC} = V_{CCA} = GND$, $T_A = 0^\circ C$ to $+85^\circ C$

Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current $I_{0X} - I_{3X}$ $S_0, S_1, \bar{E}$	—	—	250 300	μA	$V_{IN} = V_{IH} (Max.)$
I_{EE}	Power Supply Current	-68	-48	-34	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

CERDIP

VEE = -4.2V to -5.5V unless otherwise specified; VCC = VCCA = GND, TA = 0°C to +85°C

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
tPLH tPHL	Propagation Delay Iox – Ixx to Output	300	1200	300	1200	300	1200	ps
tPLH tPHL	Propagation Delay S0, S1 to Output	400	1600	400	1600	400	1600	ps
tPLH tPHL	Propagation Delay E to Output	400	1500	400	1500	400	1500	ps
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps

CERPACK

VEE = -4.2V to -5.5V unless otherwise specified; VCC = VCCA = GND, TA = 0°C to +85°C

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
tPLH tPHL	Propagation Delay Iox – Ixx to Output	300	1100	300	1100	300	1100	ps
tPLH tPHL	Propagation Delay S0, S1 to Output	400	1500	400	1500	400	1500	ps
tPLH tPHL	Propagation Delay E to Output	400	1400	400	1400	400	1400	ps
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps

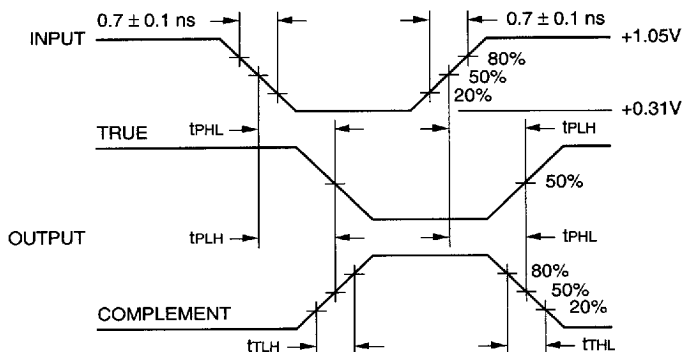
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PLCC

VEE = -4.2V to -5.5V unless otherwise specified; VCC = VCCA = GND, TA = 0°C to +85°C

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
tPLH tPHL	Propagation Delay Iox – Ixx to Output	300	1000	300	1000	300	1000	ps
tPLH tPHL	Propagation Delay S0, S1 to Output	400	1400	400	1400	400	1400	ps
tPLH tPHL	Propagation Delay E to Output	400	1300	400	1300	400	1300	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

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY100S371DC	D24-1	Commercial
SY100S371FC	F24-1	Commercial
SY100S371JC	J28-1	Commercial
SY100S371JCTR	J28-1	Commercial