

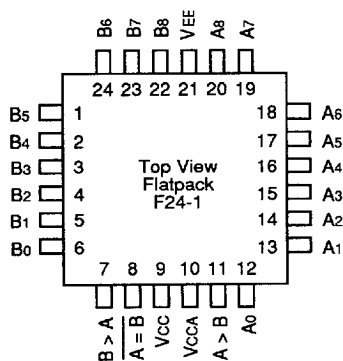
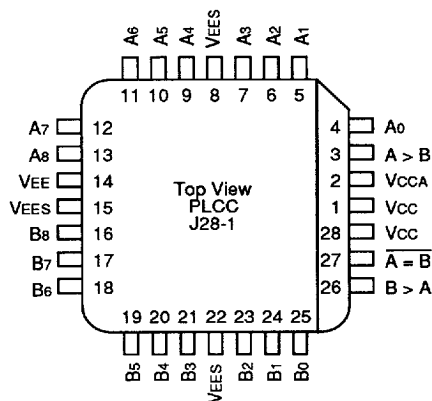
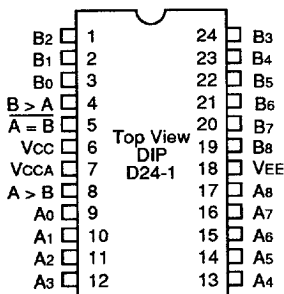
FEATURES

- Max. propagation delay of 1500ps
- IEE min. of -120mA
- 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 75KΩ input pull-down resistors
- 120% faster than National or Signetics
- Approximately 40% lower power than National or Signetics
- Function and pinout compatible with National and Signetics F100K
- Available in Cerdip, CerpacK and PLCC

DESCRIPTION

The SY100S366 is an ultra-fast 9-bit magnitude comparator designed for use in high-performance ECL systems. The device compares the arithmetic value of two 9-bit words and indicates whether one word is greater than or equal to the other. The inputs on the device have 75KΩ pull-down resistors.

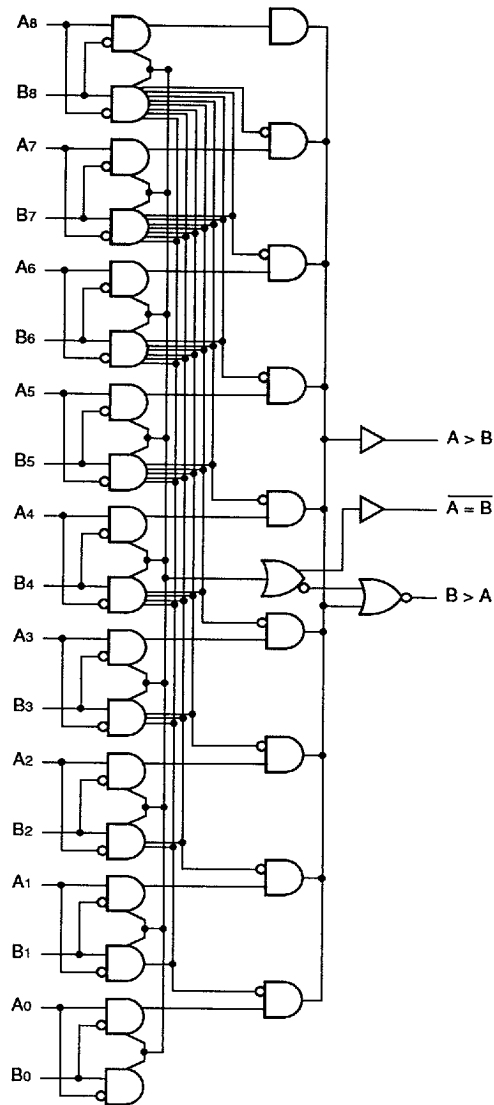
PIN CONFIGURATIONS



PIN NAMES

Label	Function
A0 – A8	A Data Inputs
B0 – B8	B Data Inputs
A > B	A Greater Than B Output
B > A	B Greater Than A Output
A = B	Complement A Equal to B Output (Active LOW)

BLOCK DIAGRAM



TRUTH TABLE⁽¹⁾

Inputs									Outputs		
A8B8	A7B7	A6B6	A5B5	A4B4	A3B3	A2B2	A1B1	A0B0	A > B	B > A	A = B
H L L H A8 = B8 A8 = B8	H L L H								H L H L	L H L H	H H H H
A8 = B8 A8 = B8 A8 = B8 A8 = B8	A7 = B7 A7 = B7 A7 = B7 A7 = B7	H L L H A6 = B6 A6 = B6	H L L H						H L H L	L H L H	H H H H
A8 = B8 A8 = B8 A8 = B8 A8 = B8	A7 = B7 A7 = B7 A7 = B7 A7 = B7	A6 = B6 A6 = B6 A6 = B6 A6 = B6	A5 = B5 A5 = B5 A5 = B5 A5 = B5	H L L H A4 = B4 A4 = B4	H L L H				H L H L	L H L H	H H H H
A8 = B8 A8 = B8 A8 = B8 A8 = B8	A7 = B7 A7 = B7 A7 = B7 A7 = B7	A6 = B6 A6 = B6 A6 = B6 A6 = B6	A5 = B5 A5 = B5 A5 = B5 A5 = B5	A4 = B4 A4 = B4 A4 = B4 A4 = B4	A3 = B3 A3 = B3 A3 = B3 A3 = B3	H L L H A2 = B2 A2 = B2	H L L H		H L H L	L H L H	H H H H
A8 = B8 A8 = B8 A8 = B8 A8 = B8	A7 = B7 A7 = B7 A7 = B7 A7 = B7	A6 = B6 A6 = B6 A6 = B6 A6 = B6	A5 = B5 A5 = B5 A5 = B5 A5 = B5	A4 = B4 A4 = B4 A4 = B4 A4 = B4	A3 = B3 A3 = B3 A3 = B3 A3 = B3	A2 = B2 A2 = B2 A2 = B2 A2 = B2	A1 = B1 A1 = B1 A1 = B1 A1 = B1	H L L H A0 = B0 A0 = B0	H L L L	L H H H	H H H H

NOTE:

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

DC ELECTRICAL CHARACTERISTICS

VEE = -4.2V to -5.46V unless otherwise specified; VCC = VCCA = GND, TA = 0°C to +85°C

Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I _{IH}	Input HIGH Current, All Inputs	—	—	200	μA	V _{IN} = V _{IH} (Max.)
I _{EE}	Power Supply Current	-120	-86	-60	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

CERDIP

VEE = -4.2V to -5.46V 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.	
t _{PLH} t _{PHL}	Propagation Delay Data 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

VEE = -4.2V to -5.46V unless otherwise specified; VCC = VCCA = GND, TA = 0°C to +85°C

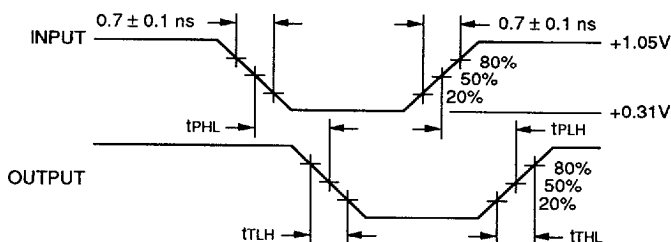
Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
tPLH tPHL	Propagation Delay Data to Output	400	1600	400	1600	400	1600	ps
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps

PLCC

VEE = -4.2V to -5.46V 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 Data 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

TIMING DIAGRAM



Propagation Delay and Transition Times

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY100S366DC	D24-1	Commercial
SY100S366FC	F24-1	Commercial
SY100S366JC	J28-1	Commercial