Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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FEATURES

- **Max. propagation delay of 1500ps**
- **I_{EE} min. of –120mA**
- **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**
- **120% faster than Fairchild**
- **Approximately 40% lower power than Fairchild**
- **Function and pinout compatible with Fairchild F100K**
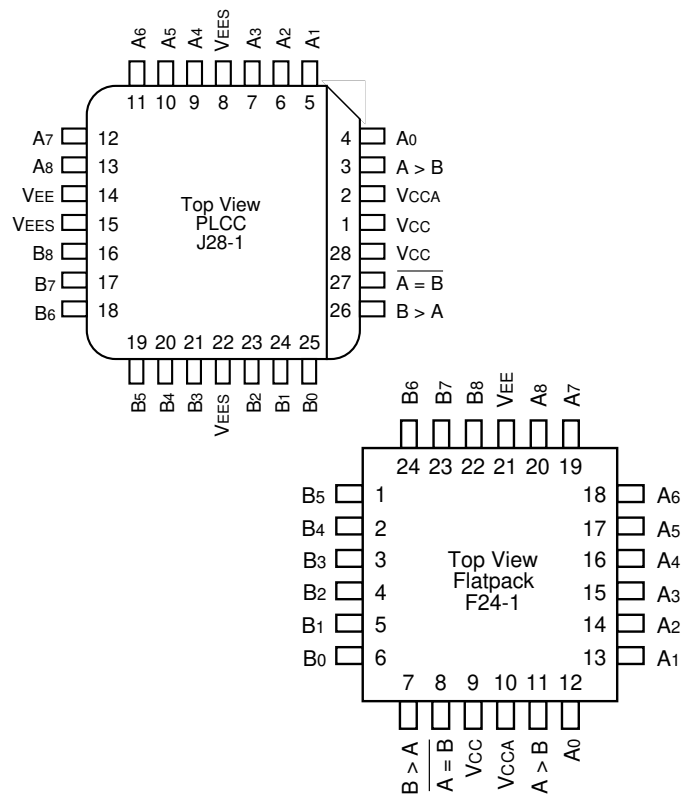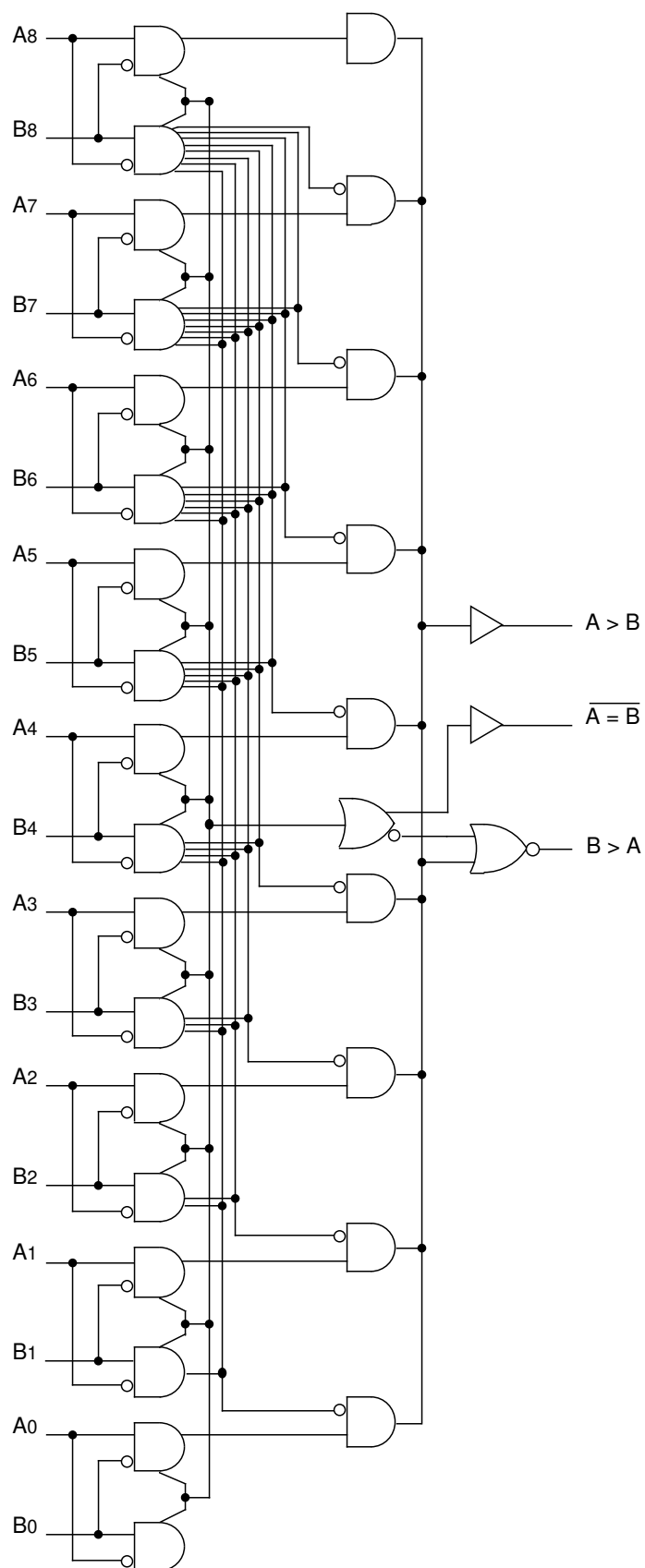- **Available in 24-pin CERPACK and 28-pin PLCC packages**

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

Pin	Function
$A_0 - A_8$	A Data Inputs
$B_0 - B_8$	B Data Inputs
A > B	A Greater Than B Output
B > A	B Greater Than A Output
$\overline{A = B}$	Complement A Equal to B Output (Active LOW)
V_{EES}	V_{EE} Substrate
V_{CCA}	V_{CCO} for ECL Outputs

BLOCK DIAGRAM

TRUTH TABLE[1]

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

NOTE:

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

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, All Inputs	—	—	200	μA	V_{IN} = V_{IH} (Max.)
I$_{EE}$	Power Supply Current	–120	–86	–60	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

CERPACK

V_{EE} = –4.2V to –5.5V unless otherwise specified; V_{CC} = V_{CCA} = 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 Data 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	

AC ELECTRICAL CHARACTERISTICS

PLCC

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

Symbol	Parameter	T_A = 0°C		T_A = +25°C		T_A = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay Data to Output	400	1500	400	1500	400	1500	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

TIMING DIAGRAM
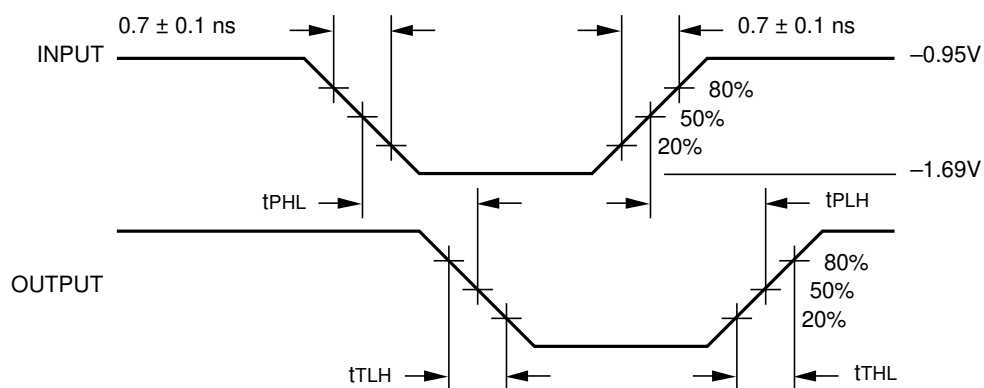
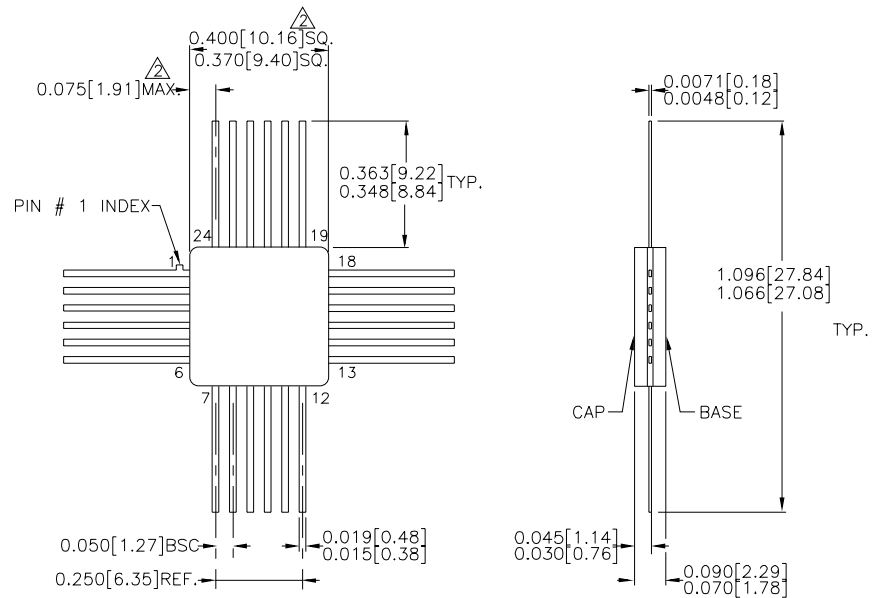**Propagation Delay and Transition Times**

NOTE:

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

PRODUCT ORDERING CODE

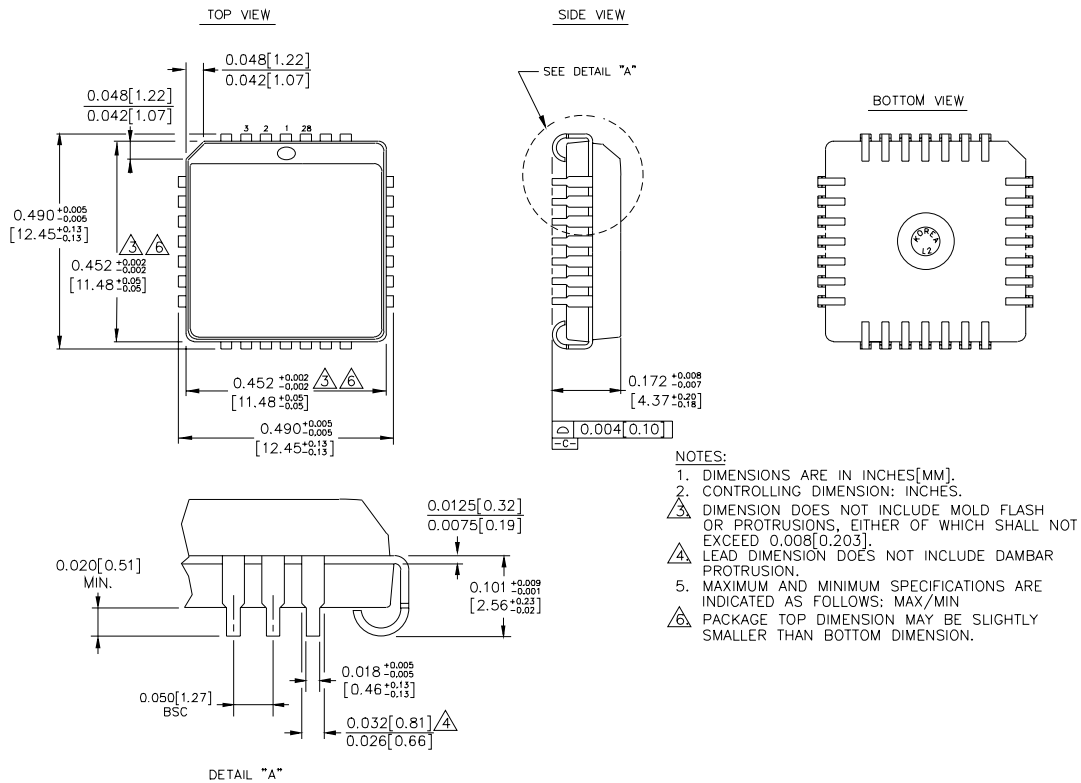| Ordering Code	Package Type	Operating Range
SY100S366FC	F24-1	Commercial
SY100S366JC	J28-1	Commercial
SY100S366JCTR	J28-1	Commercial

24 LEAD 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.

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28 LEAD PLCC (J28-1)

TOP VIEW

0.048[1.22] / 0.042[1.07]

0.048[1.22] / 0.042[1.07]

0.490 +0.005 -0.005 [12.45 +0.13 -0.13]

0.452 +0.002 -0.002 [11.48 +0.05 -0.05]

3 6

3 2 1 28

0.452 +0.002 -0.002 [11.48 +0.05 -0.05] 3 6

0.490 +0.005 -0.005 [12.45 +0.13 -0.13]

SIDE VIEW

SEE DETAIL "A"

0.172 +0.008 -0.007 [4.37 +0.20 -0.18]

0.004[0.10] -C-

BOTTOM VIEW

KOREA L2

DETAIL "A"

0.0125[0.32] / 0.0075[0.19]

0.020[0.51] MIN.

0.101 +0.009 -0.001 [2.56 +0.23 -0.02]

0.018 +0.005 -0.005 [0.46 +0.13 -0.13]

0.050[1.27] BSC

0.032[0.81] 4 / 0.026[0.66]

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.

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