

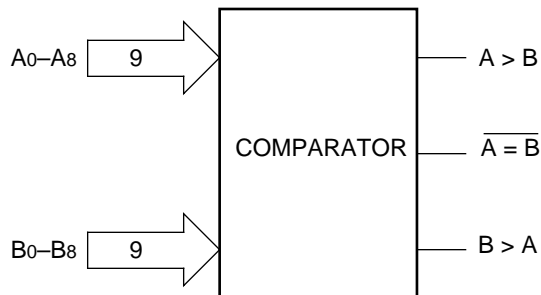
**FEATURES**

- 1100ps max. Propagation Delay  $\overline{A = B}$
- Extended 100E VEE range of -4.2V to -5.5V
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E166
- Available in 28-pin PLCC package

**DESCRIPTION**

The SY10/100E166 are 9-bit magnitude comparators designed for use in new, high-performance ECL systems. The E166 compares the binary value of two 9-bit words and indicates whether one word is greater than or equal to the other.

**BLOCK DIAGRAM**

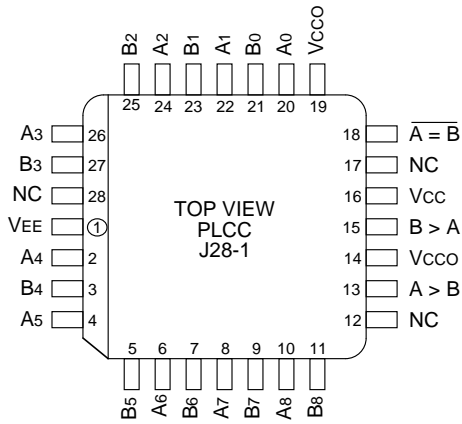


**PIN NAMES**

Pin	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
$\overline{A = B}$	A Equal to B Output (active-LOW)
VCCO	VCC to Output

**PACKAGE/ORDERING INFORMATION**

**Ordering Information<sup>(1)</sup>**



**28-Pin PLCC (J28-1)**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E166JC	J28-1	Commercial	SY10E166JC	Sn-Pb
SY10E166JCTR <sup>(2)</sup>	J28-1	Commercial	SY10E166JC	Sn-Pb
SY100E166JC	J28-1	Commercial	SY100E166JC	Sn-Pb
SY100E166JCTR <sup>(2)</sup>	J28-1	Commercial	SY100E166JC	Sn-Pb
SY10E166JZ <sup>(3)</sup>	J28-1	Commercial	SY10E166JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E166JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY10E166JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E166JZ <sup>(3)</sup>	J28-1	Commercial	SY100E166JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E166JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY100E166JZ with Pb-Free bar-line indicator	Matte-Sn

**Notes:**

1. Contact factory for die availability. Dice are guaranteed at T<sub>A</sub> = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

**DC ELECTRICAL CHARACTERISTICS**

VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

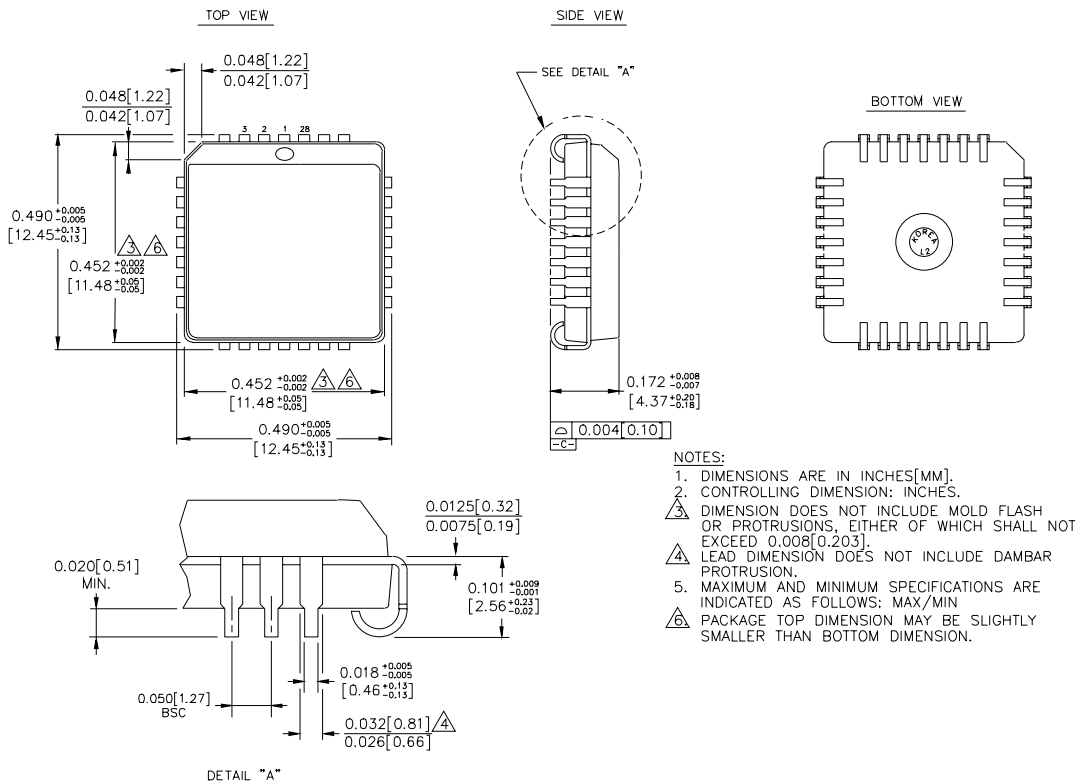
Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
I <sub>IH</sub>	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—
I <sub>EE</sub>	Power Supply Current	—	—	—	—	—	—	—	—	—	mA	—
	10E	—	113	136	—	113	136	—	113	136		
	100E	—	113	136	—	113	136	—	130	156		

**AC ELECTRICAL CHARACTERISTICS**

VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t <sub>P</sub>	Propagation Delay to Output	—	—	—	—	—	—	—	—	—	ps	—
	D to A = B	500	750	1100	500	750	1100	500	750	1100		
	D to A < B, A > B	500	850	1400	500	850	1400	500	850	1400		
t <sub>r</sub>	Rise/Fall Time	300	450	800	300	450	800	300	450	800	ps	—
t <sub>f</sub>	20% to 80%											

**28-PIN PLCC (J28-1)**



Rev. 03

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