

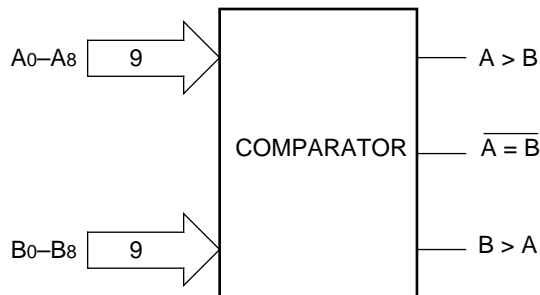
**FEATURES**

- 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 75K $\Omega$  input pulldown resistors
- Fully compatible with Motorola MC10E/100E166
- Available in 28-pin PLCC package

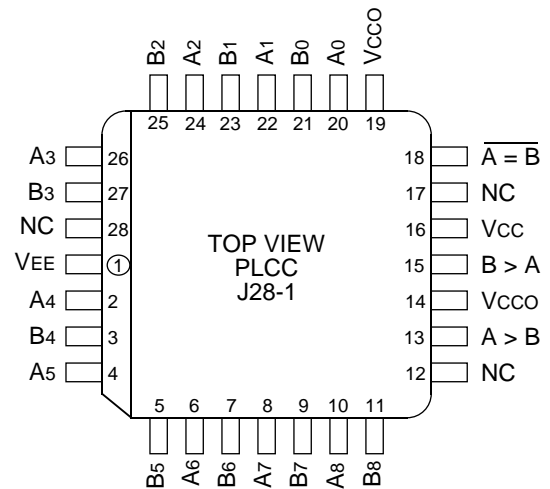
**DESCRIPTION**

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 CONFIGURATION**



**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

**DC ELECTRICAL CHARACTERISTICS**V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

Symbol	Parameter	T <sub>A</sub> = 0°C			T <sub>A</sub> = +25°C			T <sub>A</sub> = +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		

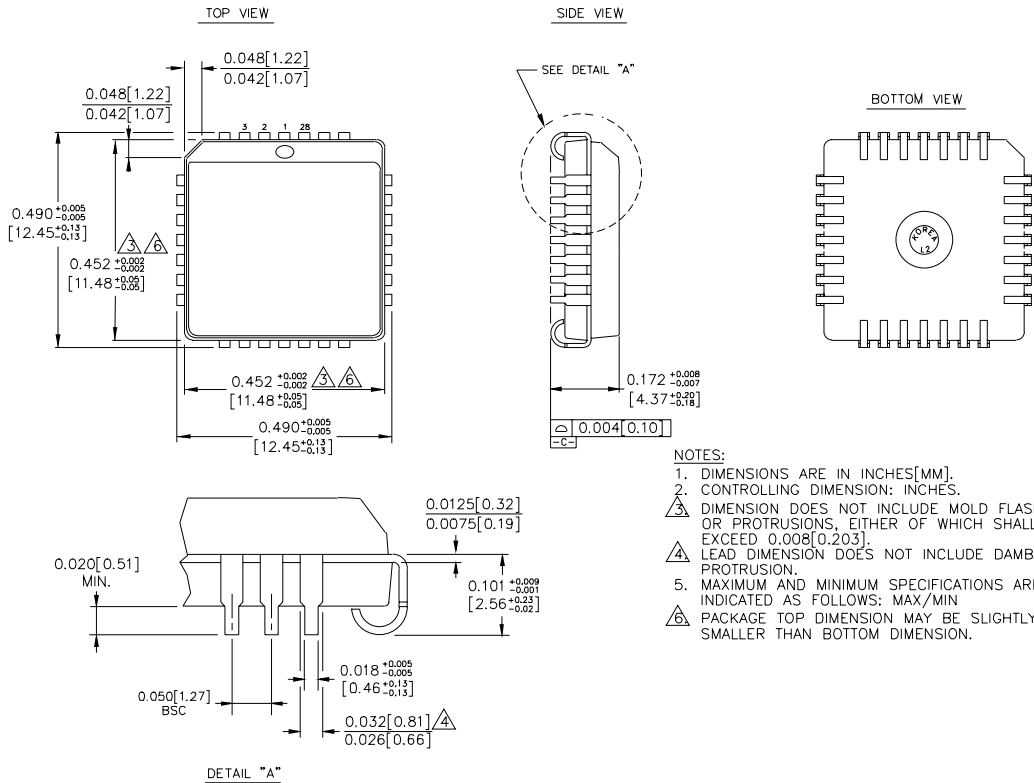
**AC ELECTRICAL CHARACTERISTICS**V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

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

**PRODUCT ORDERING CODE**

Ordering Code	Package Type	Operating Range
SY10E166JC	J28-1	Commercial
SY10E166JCTR	J28-1	Commercial
SY100E166JC	J28-1	Commercial
SY100E166JCTR	J28-1	Commercial

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



- 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.

Rev. 03

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**MICREL-SYNERGY 3250 SCOTT BOULEVARD SANTA CLARA CA 95054 USA**

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