

FEATURES

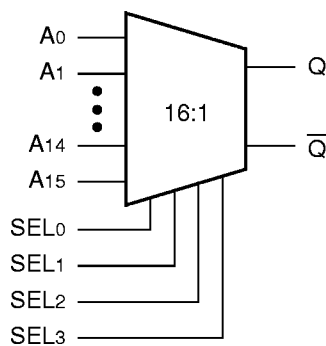
- 850ps Data Input to Output
- Extended 100E VEE range of -4.2V to -5.5V
- Differential output
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pull-down resistors
- ESD protection of 2000V
- Fully compatible with Motorola MC10E/100E164
- Available in 28-pin PLCC package

DESCRIPTION

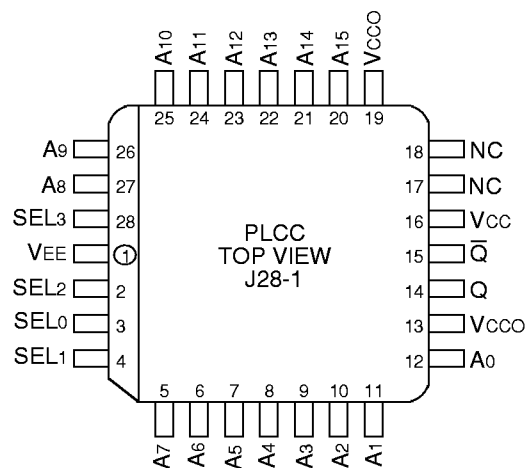
The SY10/100E164 are 16:1 multiplexers with a differential output. The select inputs (SEL_{0,1,2,3}) control which one of the sixteen data inputs (A₀-A₁₅) is propagated to the output.

Special attention to the design layout results in a typical skew between the 16 inputs of only 50ps.

BLOCK DIAGRAM



PIN CONFIGURATION



PIN NAMES

| Pin | Function |
|----------------------------------|---------------|
| A ₀ - A ₁₅ | Data Inputs |
| SEL[0:3] | Select Inputs |
| \bar{Q} , Q | Outputs |
| V _{CC0} | Vcc to Output |

TRUTH TABLE

| SEL3 | SEL2 | SEL1 | SEL0 | Data |
|------|------|------|------|------|
| L | L | L | L | A0 |
| L | L | L | H | A1 |
| L | L | H | L | A2 |
| L | L | H | H | A3 |
| L | H | L | L | A4 |
| L | H | L | H | A5 |
| L | H | H | L | A6 |
| L | H | H | H | A7 |

| SEL3 | SEL2 | SEL1 | SEL0 | Data |
|------|------|------|------|------|
| H | L | L | L | A8 |
| H | L | L | H | A9 |
| H | L | H | L | A10 |
| H | L | H | H | A11 |
| H | H | L | L | A12 |
| H | H | L | H | A13 |
| H | H | H | L | A14 |
| H | H | H | H | A15 |

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 _{IH} | Input HIGH Current | — | — | 150 | — | — | 150 | — | — | 150 | μA | — | |
| I _{EE} | Power Supply Current | 10E | — | 59 | 71 | — | 59 | 71 | — | 59 | 71 | mA | — |
| | | 100E | — | 59 | 71 | — | 59 | 71 | — | 68 | 81 | | |
| | | | | | | | | | | | | | |

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 _{PLH} t _{PHL} | Propagation Delay to Output A Input SEL0 SEL1 SEL2 SEL3 | 350 500 400 400 400 | 600 700 675 675 550 | 850 900 900 900 700 | 350 500 400 400 400 | 600 700 675 675 550 | 850 900 900 900 700 | 350 500 400 400 400 | 600 700 675 675 550 | 850 900 900 900 700 | ps | — |
| t _{skew} | Within-Device Skew | — | 50 | — | — | 50 | — | — | 50 | — | ps | 1 |
| t _r t _f | Rise/Fall Times 20–80% | 275 | 400 | 550 | 275 | 400 | 550 | 275 | 400 | 550 | ps | — |

NOTE:

1. Within-device skew is defined as the difference in the A to Q delay between the 16 different A inputs.

PRODUCT ORDERING CODE

| Ordering Code | Package Type | Operating Range |
|---------------|--------------|-----------------|
| SY10E164JC | J28-1 | Commercial |
| SY10E164JCTR | J28-1 | Commercial |
| SY100E164JC | J28-1 | Commercial |
| SY100E164JCTR | J28-1 | Commercial |

28 LEAD PLASTIC LEADED CHIP CARRIER (J28-1)

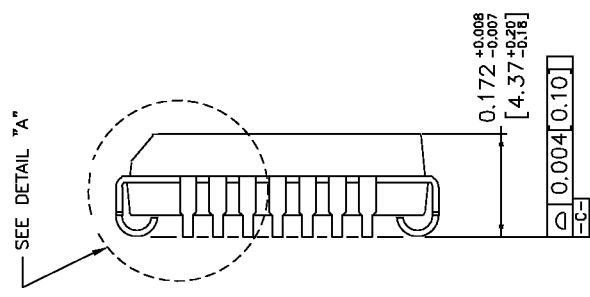
FILE/REV #: PD0008A03

PD/0008/ASCORP

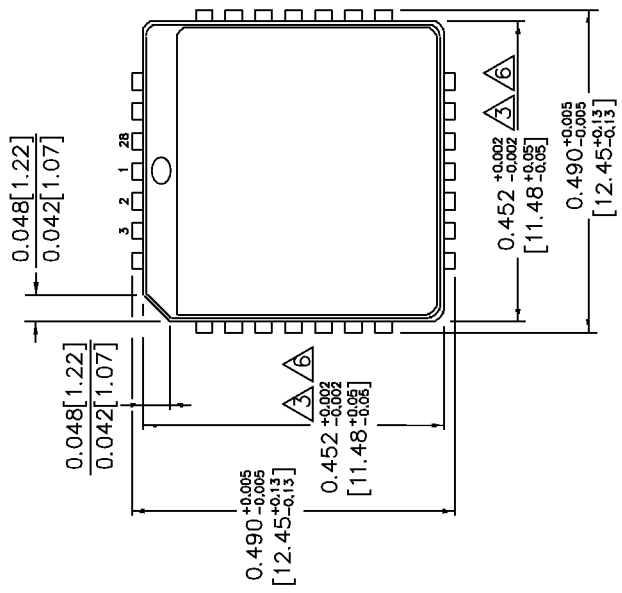
PAGE 1 OF 1

| REV. | REVISION DESCRIPTION | DATE |
|------|---|----------|
| 01 | CONVERT TO DESIGNER VERSION A.D. FORMAT AND COVER PAGE TO SPEC. CHANGE BODY WIDTH DIMENSION FROM 0.450(11.43) TO 0.443(11.25) TYP. GEOMETRICAL ERROR. | 08/18/94 |
| 02 | CONVERT DWG FROM DESIGNER TO AUTOCAD REL. 12. REFERENCE AMKOR DWG. NO. 34653 REV. 00. | 02/22/96 |
| 03 | CONVERT DWG TO REL. 13 AND ONE PAGE DOCUMENT. | 02/18/98 |

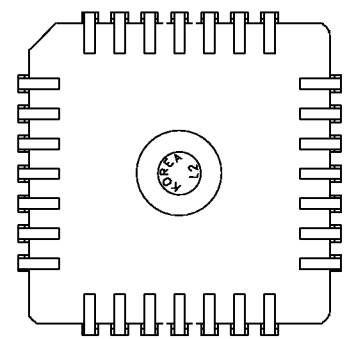
SIDE VIEW



TOP VIEW

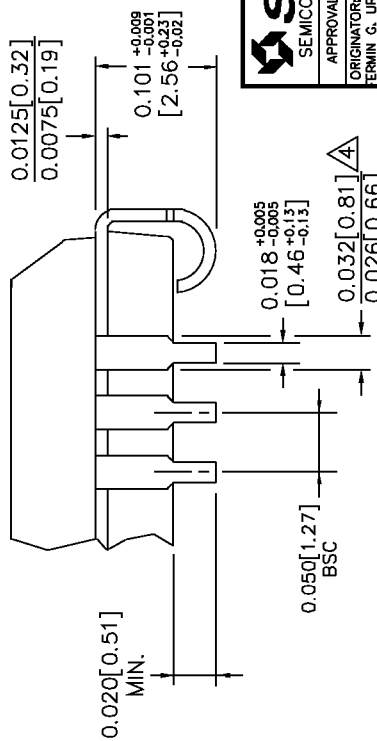


BOTTOM VIEW



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.



DETAIL "A"

SYNERGY
SEMICONDUCTOR

3250 SCOTT BOULEVARD
SANTA CLARA, CA. 95054
TEL: 408-960-9191
FAX: 408-367-7878

| APPROVALS | DATE | APPROVALS | DATE | SIZE | 28 LEAD PLCC |
|---------------------------------|----------|---------------------------------------|------|------|-----------------|
| ORIGINATOR: ERMIN G. URRUTIA | 02/23/98 | QUALITY: MARSHALL WILDER | | A | PACKAGE OUTLINE |
| CHK'D: WON CHANG | | DOCUMENT CONTROL: BRIAN SANFILIPPO | | | |
| RELEASE DATE: | | | | | |

THESE SPECIFICATIONS ARE THE PROPERTY OF SYNERGY SEMICONDUCTOR. ARE ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED, COPIED, OR USED AS THE BASIS FOR REPRODUCTION OR SALE OF APPARATUS WITHOUT WRITTEN PERMISSION.

SCALE: N/A
REVISION: 03