

FEATURES

- Provides odd-HIGH parity of 12 inputs
- Extended 100E VEE range of -4.2V to -5.5V
- Output register with Shift/Hold capability
- 900ps max. D to Q, /Q output
- Enable control
- Asynchronous Register Reset
- Differential outputs
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E160
- Available in 28-pin PLCC package

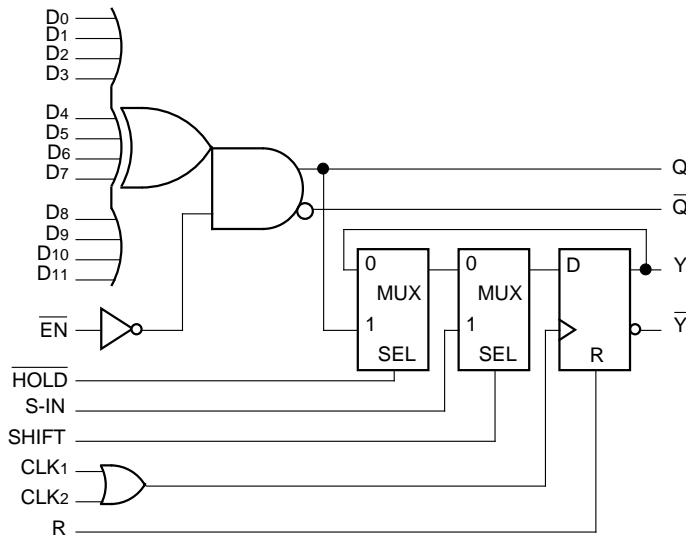
DESCRIPTION

The SY10/100E160 are high-speed, 12-bit parity generator/checkers with differential outputs, for use in new, high-performance ECL systems. The output Q takes on a logic HIGH value only when an odd number of inputs are at a logic HIGH. A logic HIGH on the enable input (EN) forces the output Q to a logic LOW.

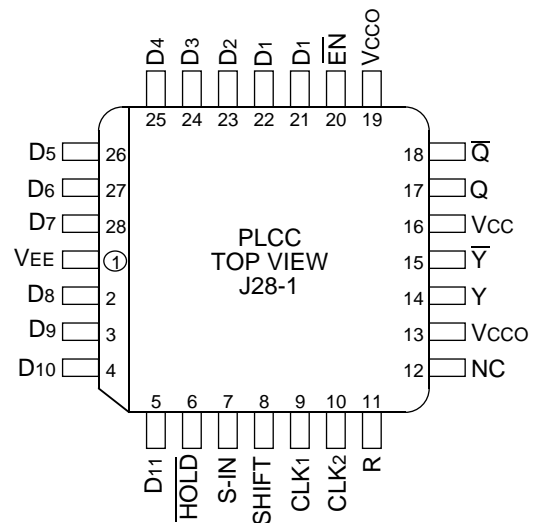
An additional feature of the E160 is the output register. Two multiplexers and their associated signals control the register input by providing the option of holding present data, loading the new parity data or shifting external data in. To hold the present data, the Hold signal (HOLD) must be at a logic LOW level. If the HOLD signal is at a logic HIGH, the data present at the Q output is passed through the first multiplexer. Taking the Shift signal (SHIFT) to a logic HIGH will shift the data at the S-IN pin into the output register. If the SHIFT signal is at a logic LOW, the output of the first multiplexer is then passed through to the register.

The register itself is clocked on the rising edge of CLK1 or CLK2 (or both). The presence of a logic HIGH on the reset pin (R) forces the register output Y to a logic LOW.

BLOCK DIAGRAM



PIN CONFIGURATION



PIN NAMES

| Pin | Function |
|--------------|--------------------|
| D0–D11 | Data Inputs |
| S-IN | Serial Data Input |
| EN | Enable, active LOW |
| HOLD | Hold, active LOW |
| SHIFT | Shift, active HIGH |
| CLK1, CLK2 | Clock Inputs |
| R | Reset Input |
| Q, \bar{Q} | Direct Output |
| Y, \bar{Y} | Register Output |
| Vcco | Vcc to Output |

TRUTH TABLE

| Number of HIGH Inputs | Output Q |
|-----------------------|----------|
| Even | LOW |
| Odd | HIGH |

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. | | |
| IIH | Input HIGH Current | — | — | 200 | — | — | 200 | — | — | 200 | μA | — |
| | CLK1, CLK2 | — | — | 300 | — | — | 300 | — | — | 300 | | |
| | R | — | — | 150 | — | — | 150 | — | — | 150 | | |
| IEE | All Other Inputs | — | — | 150 | — | — | 150 | — | — | 150 | mA | — |
| | Power Supply Current | — | 82 | 98 | — | 82 | 98 | — | 82 | 98 | | |
| | 10E | — | 82 | 98 | — | 82 | 98 | — | 82 | 98 | | |
| | 100E | — | 82 | 98 | — | 82 | 98 | — | 94 | 113 | | |

AC ELECTRICAL CHARACTERISTICS

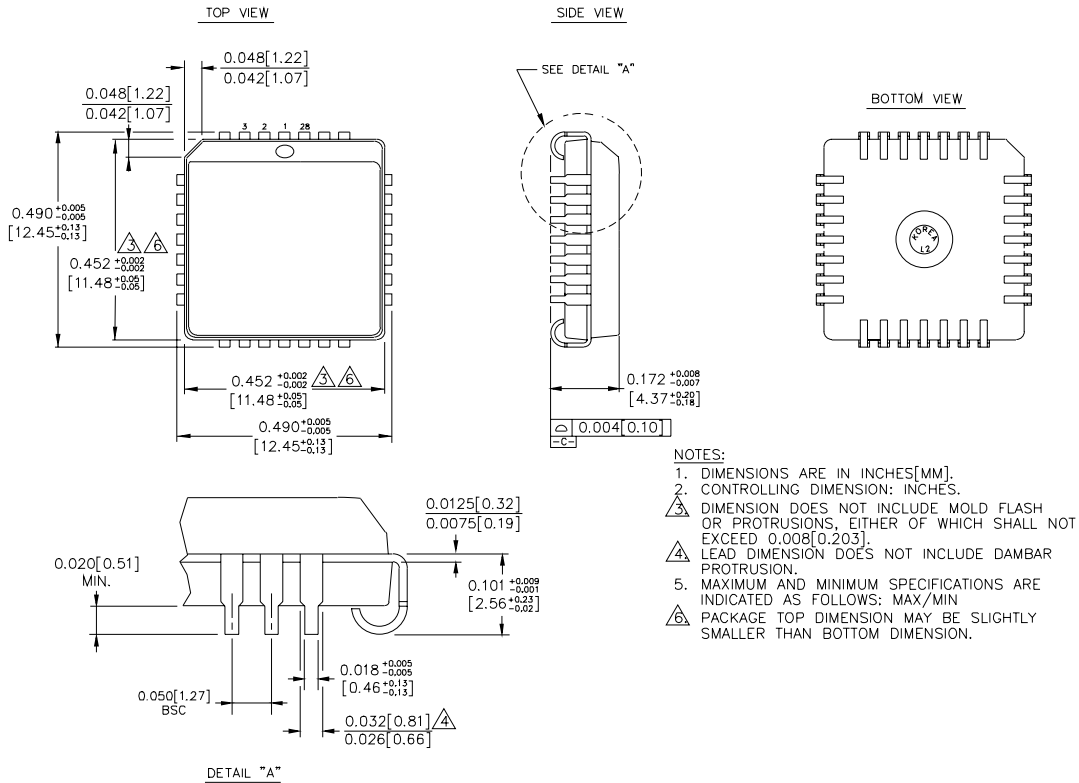
VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

| Symbol | Parameter | TA = 0°C | | | TA = +25°C | | | TA = +85°C | | | Unit | Condition |
|--------------|--|---------------------------|------------------------------|--------------------------|---------------------------|------------------------------|--------------------------|---------------------------|------------------------------|--------------------------|------|-----------|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | | |
| tPLH tPHL | Propagation Delay to Output D to Q EN to Q CLK to Y R to Y | 400 300 275 275 | 650 550 500 500 | 950 750 700 725 | 400 300 275 275 | 650 550 500 500 | 950 750 700 725 | 400 300 275 275 | 650 550 500 500 | 950 750 700 725 | ps | — |
| ts | Set-up Time D HOLD S-IN SHIFT | 1200 600 350 500 | 900 300 150 250 | — — — — | 1200 600 350 500 | 900 300 150 250 | — — — — | 1200 600 350 500 | 900 300 150 250 | — — — — | ps | — |
| tH | Hold Time D HOLD S-IN SHIFT | -400 100 300 200 | -900 -300 -150 -250 | — — — — | -400 100 300 200 | -900 -300 -150 -250 | — — — — | -400 100 300 200 | -900 -300 -150 -250 | — — — — | ps | — |
| tr tf | Rise/Fall Time 20% to 80% | 300 | 450 | 650 | 300 | 450 | 650 | 300 | 450 | 650 | ps | — |

PRODUCT ORDERING CODE

| Ordering Code | Package Type | Operating Range |
|---------------|--------------|-----------------|
| SY10E160JC | J28-1 | Commercial |
| SY10E160JCTR | J28-1 | Commercial |
| SY100E160JC | J28-1 | Commercial |
| SY100E160JCTR | J28-1 | Commercial |

28 LEAD PLCC (J28-1)



Rev. 03

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