

## FEATURES

- 9-bit latch
- Extended 100E VEE range of -4.2V to -5.5V
- Parity detection/generation
- 800ps max. D to Output
- Reset
- Internal 75KΩ input pull-down resistors
- Fully compatible with Motorola MC10E/100E175
- Available in 28-pin PLCC package

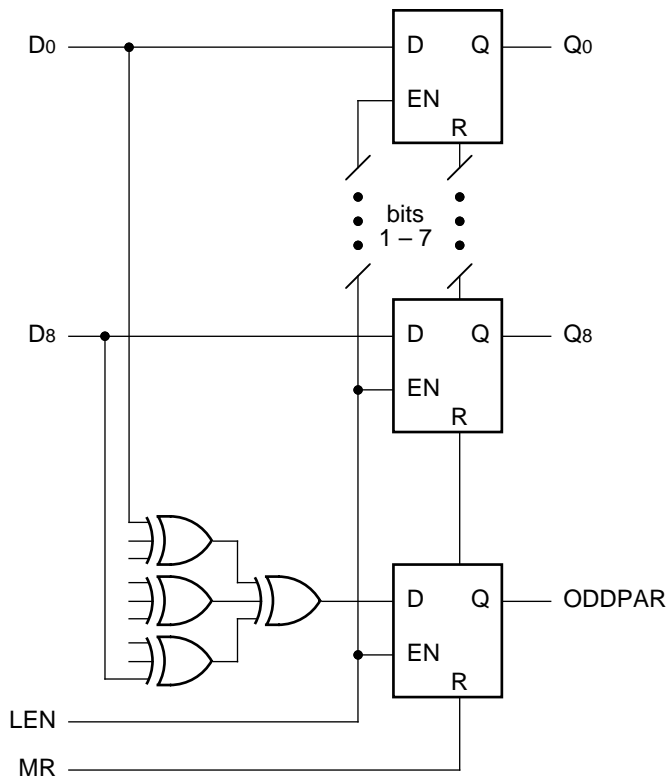
## DESCRIPTION

The SY10/100E175 are 9-bit latches. They also feature a tenth latched output (ODDPAR) which is formed as the odd parity of the nine data inputs (ODDPAR is HIGH if an odd number of the inputs are HIGH).

The E175 can also be used to generate byte parity by using D8 as the parity-type select (L = even parity, H = odd parity) and using ODDPAR as the byte parity output.

The LEN pin latches the data when asserted with a logical high and makes the latch transparent when placed at a logic low level.

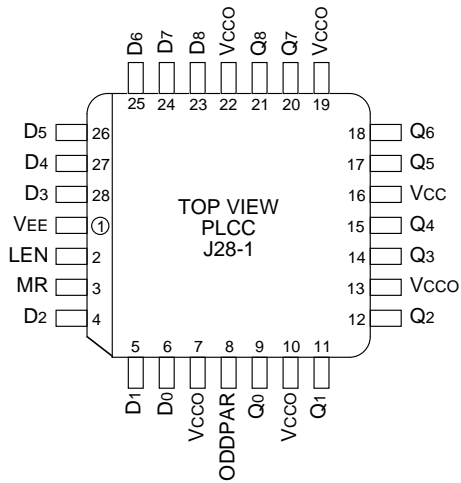
## BLOCK DIAGRAM



## PIN NAMES

| Pin     | Function      |
|---------|---------------|
| D0 – D8 | Data Inputs   |
| LEN     | Latch Enable  |
| MR      | Master Reset  |
| Q0 – Q8 | Data Outputs  |
| ODDPAR  | Parity Output |
| Vcco    | Vcc to Output |

**PACKAGE/ORDERING INFORMATION**



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

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

| Part Number                     | Package Type | Operating Range | Package Marking                             | Lead Finish |
|---------------------------------|--------------|-----------------|---------------------------------------------|-------------|
| SY10E175JC                      | J28-1        | Commercial      | SY10E175JC                                  | Sn-Pb       |
| SY10E175JCTR <sup>(2)</sup>     | J28-1        | Commercial      | SY10E175JC                                  | Sn-Pb       |
| SY100E175JC                     | J28-1        | Commercial      | SY100E175JC                                 | Sn-Pb       |
| SY100E175JCTR <sup>(2)</sup>    | J28-1        | Commercial      | SY100E175JC                                 | Sn-Pb       |
| SY10E175JZ <sup>(3)</sup>       | J28-1        | Commercial      | SY10E175JZ with Pb-Free bar-line indicator  | Matte-Sn    |
| SY10E175JZTR <sup>(2, 3)</sup>  | J28-1        | Commercial      | SY10E175JZ with Pb-Free bar-line indicator  | Matte-Sn    |
| SY100E175JZ <sup>(3)</sup>      | J28-1        | Commercial      | SY100E175JZ with Pb-Free bar-line indicator | Matte-Sn    |
| SY100E175JZTR <sup>(2, 3)</sup> | J28-1        | Commercial      | SY100E175JZ 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.

**TRUTH TABLE**

| D | LEN | MR | Q              | ODDPAR                              |
|---|-----|----|----------------|-------------------------------------|
| H | L   | L  | H              | H if odd no. of D <sub>n</sub> HIGH |
| L | L   | L  | L              | H if odd no. of D <sub>n</sub> HIGH |
| X | H   | L  | Q <sub>0</sub> | Q <sub>0</sub>                      |
| X | X   | H  | L              | L                                   |

**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      | 110  | 132  | 110        | 132  | 110  | 132        | 110  | 132  |      |           |
|                 |                      | 100E     | 110  | 132  | 110        | 132  | 127  | 152        | 127  | 152  |      |           |

**AC ELECTRICAL CHARACTERISTICS**

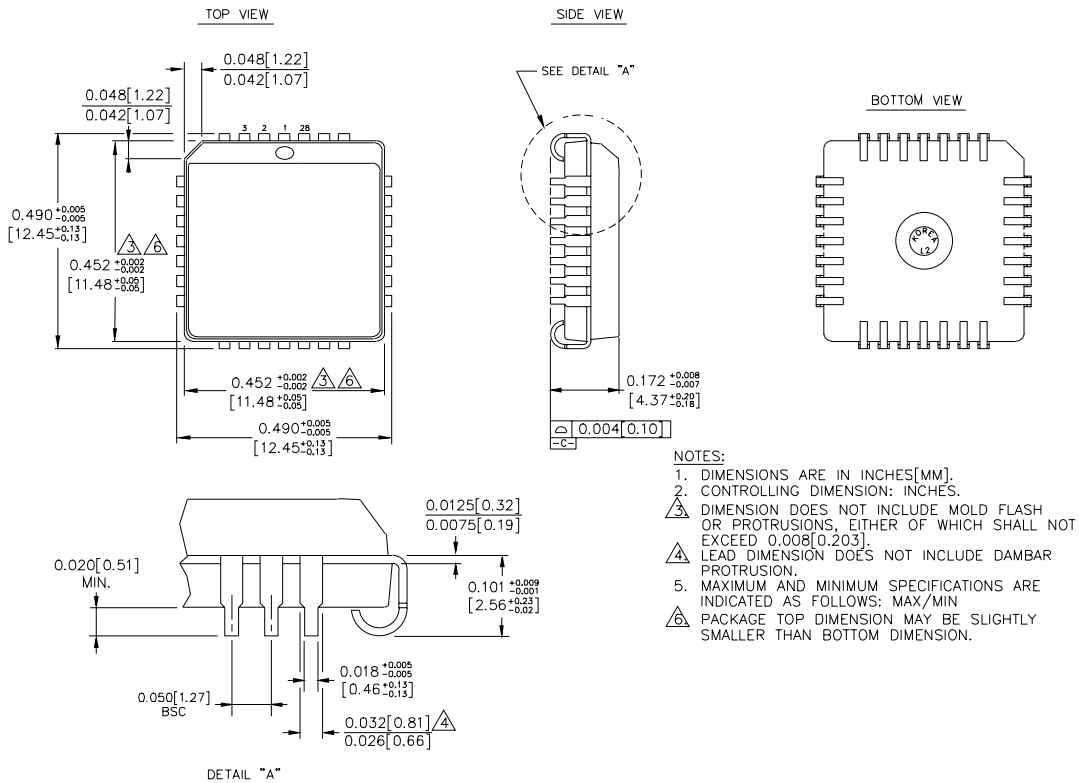
VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

| Symbol                           | Parameter                   | TA = 0°C |      |      | TA = +25°C |      |      | TA = +85°C |      |      | Unit | Condition |
|----------------------------------|-----------------------------|----------|------|------|------------|------|------|------------|------|------|------|-----------|
|                                  |                             | Min.     | Typ. | Max. | Min.       | Typ. | Max. | Min.       | Typ. | Max. |      |           |
| t <sub>PD</sub>                  | Propagation Delay to Output | 450      | 600  | 800  | 450        | 600  | 800  | 450        | 600  | 800  | ps   | —         |
|                                  | D to Q                      |          |      |      |            |      |      |            |      |      |      |           |
|                                  | D to ODDPAR                 |          |      |      |            |      |      |            |      |      |      |           |
|                                  | LEN to Q                    |          |      |      |            |      |      |            |      |      |      |           |
|                                  | LEN to ODDPAR               |          |      |      |            |      |      |            |      |      |      |           |
|                                  | MR to Q (t <sub>PHL</sub> ) |          |      |      |            |      |      |            |      |      |      |           |
| MR to ODDPAR (t <sub>PHL</sub> ) |                             |          |      |      |            |      |      |            |      |      |      |           |
| t <sub>S</sub>                   | Set-up Time                 | 275      | 100  | —    | 275        | —    | —    | 275        | —    | —    | ps   | —         |
|                                  | D (Q)                       |          |      |      |            |      |      |            |      |      |      |           |
| t <sub>H</sub>                   | Hold Time                   | 175      | -100 | —    | 175        | —    | —    | 175        | —    | —    | ps   | —         |
|                                  | D (Q)                       |          |      |      |            |      |      |            |      |      |      |           |
| t <sub>RR</sub>                  | Reset Recovery Time         | 850      | 600  | —    | 850        | 600  | —    | 850        | 600  | —    | ps   | —         |
|                                  | D (ODDPAR)                  |          |      |      |            |      |      |            |      |      |      |           |
| t <sub>skew</sub>                | Within-Device Skew          | —        | 75   | —    | —          | 75   | —    | —          | 75   | —    | ps   | 1         |
|                                  | LEN, MR                     |          |      |      |            |      |      |            |      |      |      |           |
|                                  | D to Q                      |          |      |      |            |      |      |            |      |      |      |           |
| t <sub>r</sub>                   | Rise/Fall Times             | 300      | 500  | 800  | 300        | 500  | 800  | 300        | 500  | 800  | ps   | —         |
|                                  | 20–80%                      |          |      |      |            |      |      |            |      |      |      |           |

**Note:**

1. Within-device skew is defined as identical transitions on similar paths through a device.

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



Rev. 03

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