



M8282/M8283 OCTAL LATCH

Military

- Fully Parallel 8-Bit Data Register and Buffer
- Transparent During Active Strobe
- Supports M8085AH, M8048AH, M8086, M8088 and M80186
- High Output Drive Capability for Driving System Data Bus
- 3-State Outputs
- No Output Low Noise When Entering or Leaving High Impedance State
- Military Temperature Range: -55°C to +125°C (T_C)

The M8282 and M8283 are 8-bit bipolar latches with 3-state output buffers. They can be used to implement latches, buffers, or multiplexers. The M8283 inverts the input data at its outputs while the M8282 does not. Thus, all of the principal peripheral and input/output functions of a microcomputer system can be implemented with these devices.

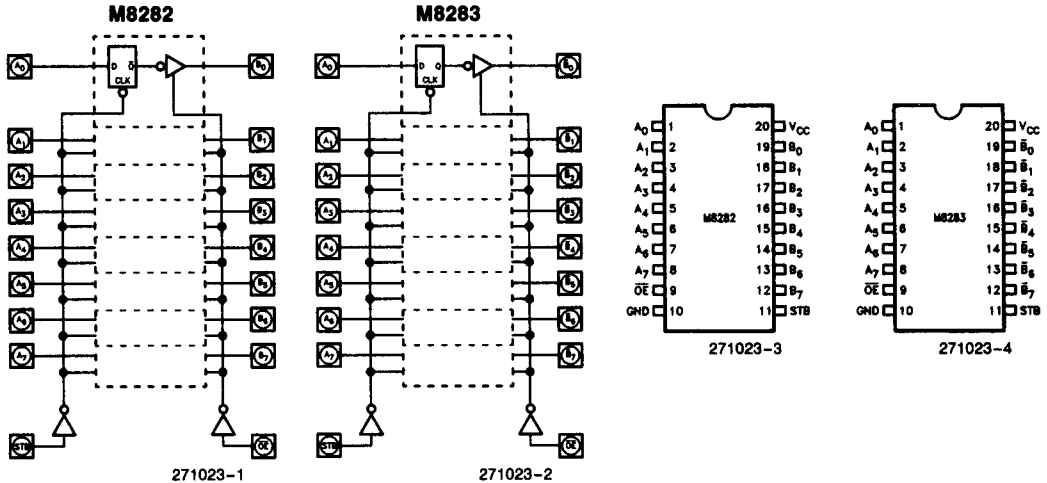


Figure 1. Logic Diagrams

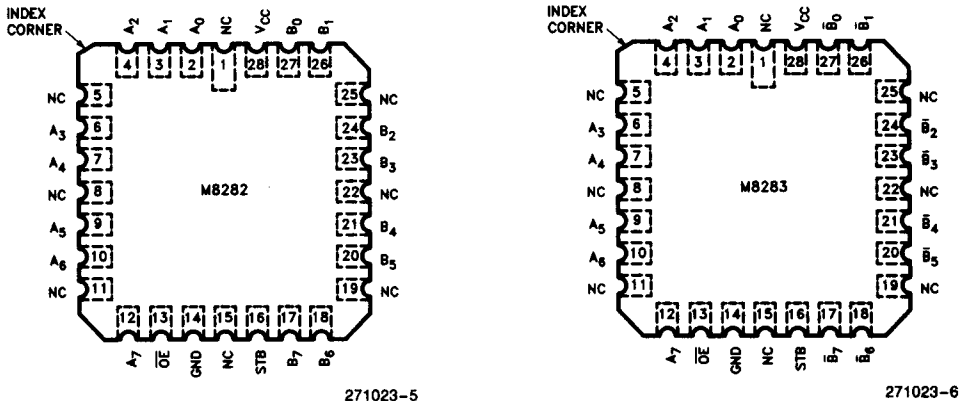


Figure 2. Pin Configurations

Table 1. Pin Description

| Symbol | Type | Name and Function |
|--|------|--|
| STB | I | STROBE: STB is an input control pulse used to strobe data at the data input pins (A ₀ –A ₇) into the data latches. This signal is active HIGH to admit input data. The data is latched at the HIGH to LOW transition of STB. |
| \overline{OE} | I | OUTPUT ENABLE: \overline{OE} is an input control signal which when active LOW enables the contents of the data latches onto the data output pin (B ₀ –B ₇). \overline{OE} being inactive HIGH forces the output buffers to their high impedance state. |
| A ₀ –A ₇ | I | DATA INPUT PINS: Data presented at these pins satisfying setup time requirements when STB is strobed is latched into the data input latches. |
| B ₀ –B ₇ M8282 B ₀ –B ₇ M8283 | O | DATA OUTPUT PINS: When \overline{OE} is true, the data in the data latches is presented as inverted (M8283) or non-inverted (M8282) data onto the data output pins. |

FUNCTIONAL DESCRIPTION

The M8282 and M8283 octal latches are 8-bit latches with 3-state output buffers. Data having satisfied the setup time requirements is latched into the data latched by strobing the STB line HIGH to LOW.

Holding the STB line in its active HIGH state makes the latches appear transparent. Data is presented to the data output pins by activating the \overline{OE} input line. When \overline{OE} is inactive HIGH the output buffers are in their high impedance state. Enabling or disabling the output buffers will not cause negative-going transients to appear on the data output bus.

ABSOLUTE MAXIMUM RATINGS*

Case Temperature Under Bias⁽²⁾. –55°C to +125°C
 Storage Temperature –65°C to +150°C
 All Output and Supply Voltages –0.5V to +7V
 All Input Voltages. –1.0V to +5.5V
 Power Dissipation 1W

**Notice: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.*

D.C. CHARACTERISTICS $V_{CC} = 5V \pm 5\%$, $T_C^{(2)} = -55^\circ\text{C}$ to $+125^\circ\text{C}$

| Symbol | Parameter | Min | Max | Units | Test Conditions |
|------------------|-----------------------|-----|------|-------|--|
| V _C | Input Clamp Voltage | | –1 | V | I _C = –5 mA |
| I _{CC} | Power Supply Current | | 160 | mA | |
| I _F | Forward Input Current | | –0.2 | mA | V _F = 0.45V |
| I _R | Reverse Input Current | | 50 | μA | V _R = 5.25V |
| V _{OL} | Output Low Voltage | | 0.45 | V | I _{OL} = 20 mA |
| V _{OH} | Output High Voltage | 2.4 | | V | I _{OH} = –5 mA |
| I _{OFF} | Output Off Current | | ±50 | μA | V _{OFF} = 0.45 to 5.25V |
| V _{IL} | Input Low Voltage | | 0.8 | V | V _{CC} = 5.0V (Note 1) |
| V _{IH} | Input High Voltage | 2.0 | | V | V _{CC} = 5.0V (Note 1) |
| C _{IN} | Input Capacitance | | 12 | pF | F = 1 MHz V _{BIAS} = 2.5V, V _{CC} = 5V T _C = 25°C |

NOTE:

- Output Loading I_{OL} = 20 mA, I_{OH} = –5 mA, C_L = 300 pF
- Case Temperatures are "instant on."

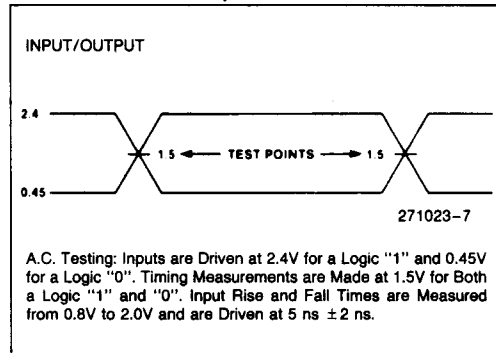
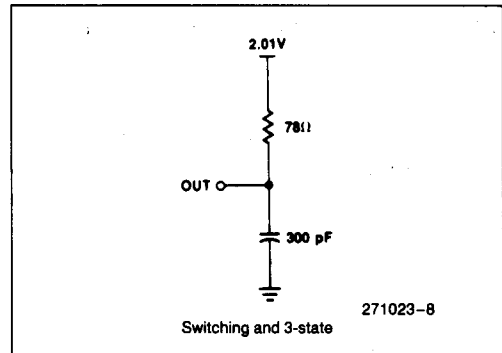
A.C. CHARACTERISTICS $V_{CC} = 5V \pm 5\%$, $T_C^{(2)} = -55^\circ C$ to $+125^\circ C$

 Loading: Outputs— $I_{OL} = 20\text{ mA}$, $I_{OH} = -5\text{ mA}$, $C_L = 300\text{ pF}$

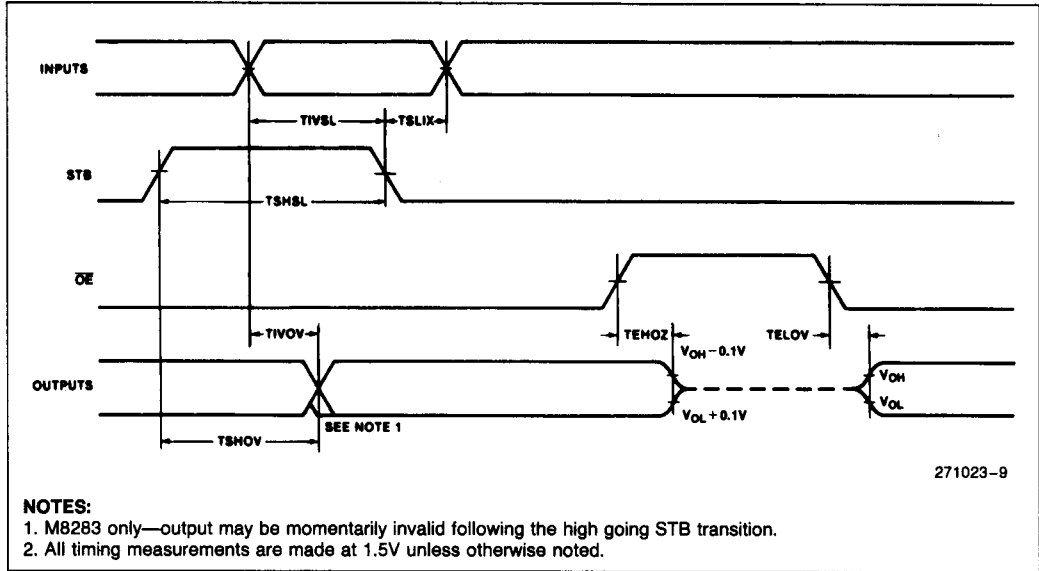
| Symbol | Parameter | Min | Max | Units | Test Conditions |
|--------|-------------------------|-----|-----|-------|-------------------|
| TIVOV | Input to Output Delay | | | | (Note 1) |
| | Inverting | | 25 | ns | |
| | Non-Inverting | | 35 | ns | |
| TSHOV | STB to Output Delay | | | | |
| | Inverting | | 45 | ns | |
| | Non-Inverting | | 55 | ns | |
| TEHOZ | Output Disable Time | | 25 | ns | |
| TELOV | Output Enable Time | 10 | 50 | ns | |
| TIVSL | Input to STB Setup Time | 0 | | ns | |
| TSLIX | Input to STB Hold Time | 25 | | ns | |
| TSHSL | STB High Time | 15 | | ns | |
| TOLOH | Output Rise Time | | 20 | ns | From 0.8V to 2.0V |
| TOHOL | Output Fall Time | | 12 | ns | From 2.0V to 0.8V |

NOTES:

- See waveforms and test load circuit on following page.
- Case temperatures are "instant on".

A.C. TESTING INPUT, OUTPUT WAVEFORM

A.C. TESTING LOAD CIRCUIT


WAVEFORMS



NOTES:

1. M8283 only—output may be momentarily invalid following the high going STB transition.
2. All timing measurements are made at 1.5V unless otherwise noted.