

Description

The μ PB8282 and μ PB8283 are 8-bit latches with three-state output buffers. The μ PB8282 is non-inverting and the μ PB8283 inverts the input data. These devices are ideal for demultiplexing the address/data buses on the 8085A/8086 microprocessors. The μ PB8282/83 are fabricated using NEC's Schottky bipolar process.

Features

- Support μ PB8080, 8085A, 8048, 8086 family systems
- Transparent during active strobe
- Fully parallel 8-bit data register and buffer
- High output drive capability (32 mA) for driving the system data bus
- Three-state outputs

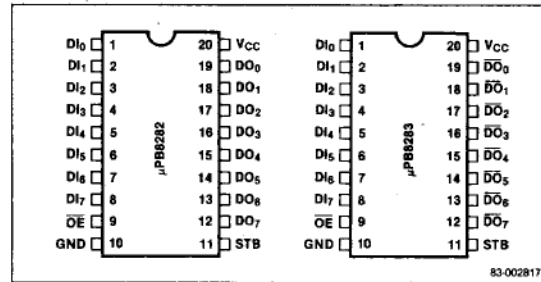
Ordering Information

Part Number	Package Type	Output Drive Capability
μ PB8282C	20-pin plastic DIP	32 mA
μ PB8283C	20-pin plastic DIP	32 mA

Pin Identification

No.	Symbol	Function
1-8	DI ₀ -DI ₇	Data in
9	\overline{OE}	Output enable
10	GND	Ground
11	STB	Strobe
12-19	(μ PB8282) DO ₇ -DO ₀ (μ PB8283) \overline{DO} ₇ - \overline{DO} ₀	Data out
20	V _{CC}	Power supply

Pin Configurations



Pin Functions

\overline{OE} (Output Enable)

This active low input control signal enables the contents of the data latches onto the data output pins (B₀-B₇). When \overline{OE} goes high, the output buffers become high impedance.

STB (Strobe)

This input control pulse strobes data at input A₀-A₇ into the data latches. Data is latched at STB's high to low transition. When active high, STB admits input data.

DI₀-DI₇ (Data In)

When data that satisfies the STB strobe setup time requirements is input to these pins, it is latched into the data latches.

DO₀-DO₇ (μ PB8282) (Data Out) \overline{DO} ₀- \overline{DO} ₇ (μ PB8283)

When \overline{OE} is active (low), it outputs data to the DO₀-DO₇ pins. When \overline{OE} is inactive high, DO₀-DO₇ are high impedance. Enabling or disabling the output buffers will not cause negative-going transients to appear on the data output bus.

GND (Ground)

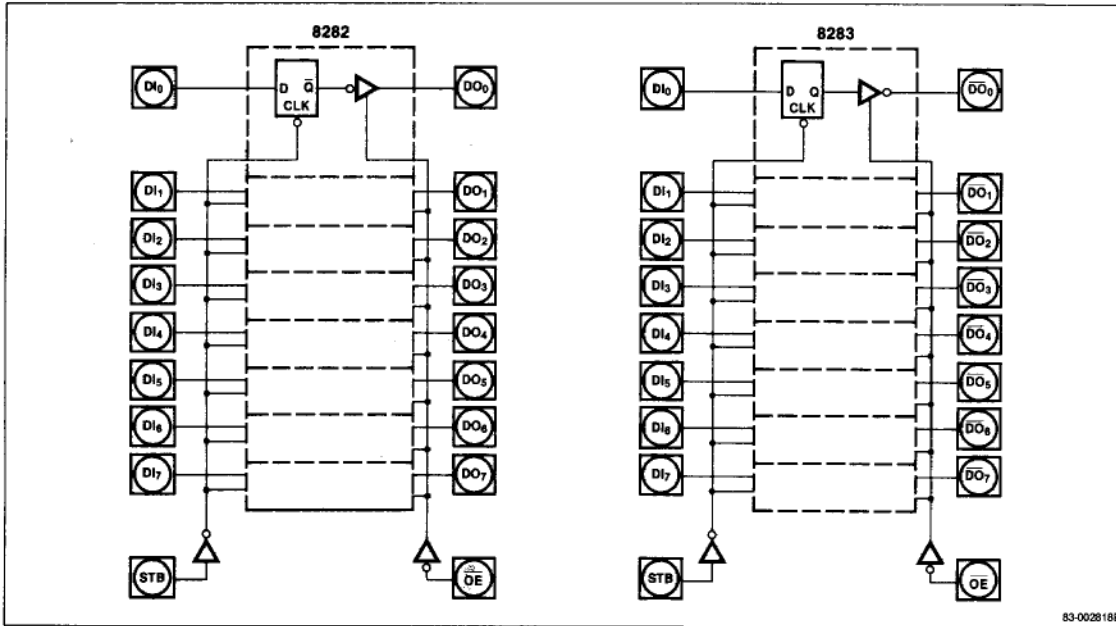
This is the ground.

V_{CC} (Power Supply)

This is the +5 V power supply.

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Block Diagrams



83-002818B

Functional Description

The μPB8282/83 are 8-bit latches with three-state output buffers. Data on the inputs is latched into the data latches on a high-to-low transition of the STB line. When STB is high, the latches appear transparent. The OE input enables the latched data to be transferred to the output pins. When OE is high, the outputs are put in the three-state condition. OE will not cause transients to appear on the data outputs.

Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$

Operating temperature	0°C to +70°C
Storage temperature	-65°C to +150°C
All output and supply voltages	-0.5 to +7 V
All input voltages	-1.0 V to 5.5 V

Comment: Exposing the device to stresses above those listed in Absolute Maximum Ratings could cause permanent damage. The device is not meant to be operated under conditions outside the limits described in the operational sections of this specification. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

DC Characteristics

$T_A = 0^\circ\text{C to } +70^\circ\text{C}; V_{CC} = +5\text{ V} \pm 10\%$

Parameter	Symbol	Limits		Unit	Test Conditions
		Min	Max		
Input clamp voltage	V_C		-1	V	$I_C = -5\text{ mA}$
Power supply current	I_{CC}		160	mA	
Forward input current	I_F		-0.2	mA	$V_F = 0.45\text{ V}$
Reverse input current	I_R		50	μA	$V_R = 5.25\text{ V}$
Output low voltage	V_{OL}		0.45	V	$I_{OL} = 32\text{ mA}$
Output high voltage	V_{OH}	2.4		V	$I_{OH} = -5\text{ mA}$
Output off current	I_{OFF}	±50		μA	$V_{OFF} = 0.45\text{ to } 5.25\text{ V}$
Input low voltage	V_{IL}		0.8	V	$V_{CC} = 5.0\text{ V (1)}$
Input high voltage	V_{IH}	2.0		V	$V_{CC} = 5.0\text{ V (1)}$
Input capacitance	C_{IN}		12	pF	$V_{BIAS} = 2.5\text{ V}, V_{CC} = 5\text{ V}, T_A = 25^\circ\text{C}, F = 1\text{ MHz}$

Note:

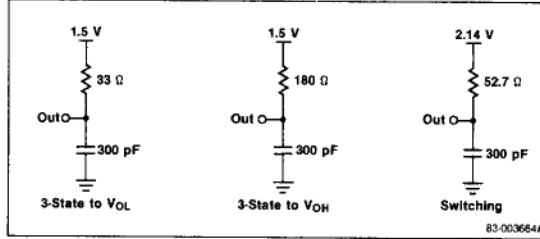
(1) Output loading $I_{OL} = 32\text{ mA}, I_{OH} = -5\text{ mA}, C_L = 300\text{ pF}$

AC Characteristics

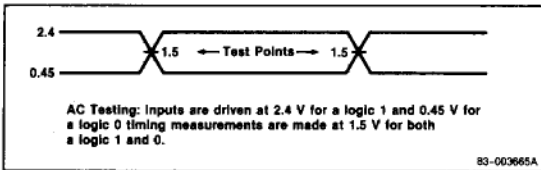
$T_A = 0^\circ\text{C to } +70^\circ\text{C}; V_{CC} = 5\text{ V} \pm 10\%$
 $I_{OL} = 32\text{ mA}, I_{OH} = -5\text{ mA}, C_L = 300\text{ pF}$

Parameter	Symbol	Limits		Unit
		Min	Max	
Input to output delay	t_{IVOV}	5	22	ns
		5	30	
STB to output delay	t_{SHOV}	10	40	ns
		10	45	
Output disable time	t_{EHOZ}	5	22	ns
Output enable time	t_{ELOV}	10	30	ns
Input to STB setup time	t_{IVSL}	0		ns
Input to STB hold time	t_{SLIX}	25		ns
STB high time	t_{SHSL}	15		ns
Input, output rise time	t_{ILIH}, t_{OLOH}		20	ns
Input, output fall time	t_{IHIL}, t_{OHOL}		12	ns

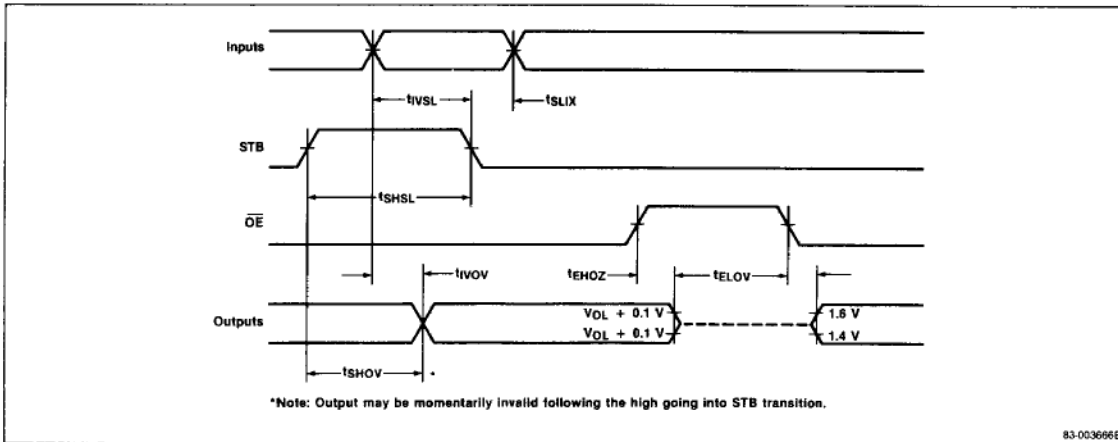
Load Circuits



AC Test Points



Timing Waveform



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