DESCRIPTION

The M5L8282P and M5L8283P are semiconductor integrated circuits consisting of sets of eight 3-state latches for use with various types of microprocessors.

FEATURES

- 3-state, high-fanout output ····· ($I_{OL}=32mA$, $I_{OH}=-5mA$)
- Low power dissipation

APPLICATION

Data latches for various microcomputer systems

FUNCTION

The M5L8282P and M5L8283P are latches with non-inverted and inverted outputs, respectively.

When the strobe input STB is high, the data inputs $DI_0 \sim DI_7$ are passed through the data outputs $DO_0 \sim DO_7$ (M5L8282P) or to the data outputs $\overline{DO_0} \sim \overline{DO_7}$ (M5L8283P), changes in the $DI_0 \sim DI_7$ signals being reflected in the data outputs.
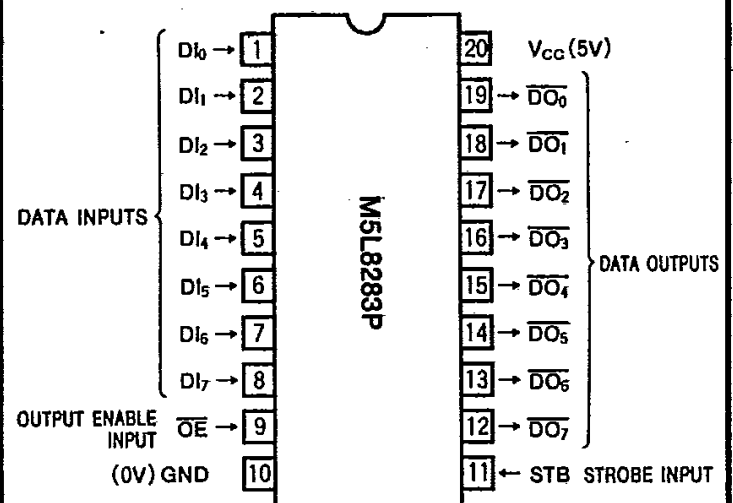
If the STB is changed from high to low, the data $DI_0 \sim DI_7$ just before the change is latched. If the DI data is changed while STB is low, this change is not reflected in the data outputs.

When $\overline{OE}$ is made high, all the data outputs go into the high-impedance state, the data latched prior to $\overline{OE}$ going high being held.
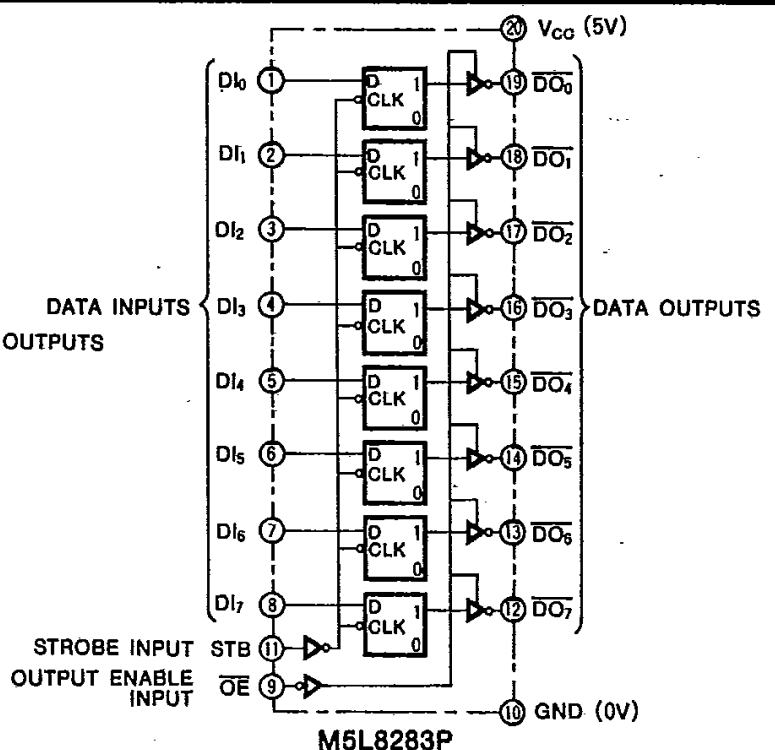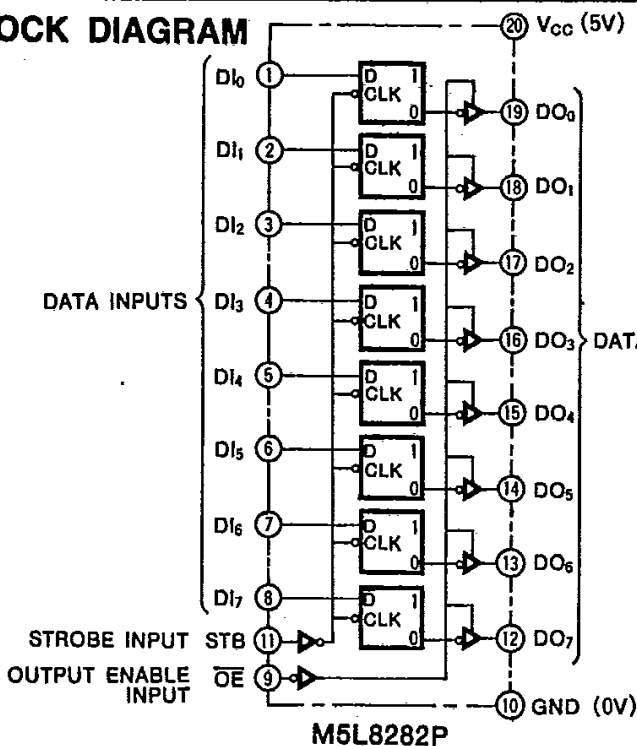
PIN CONFIGURATION (TOP VIEW)
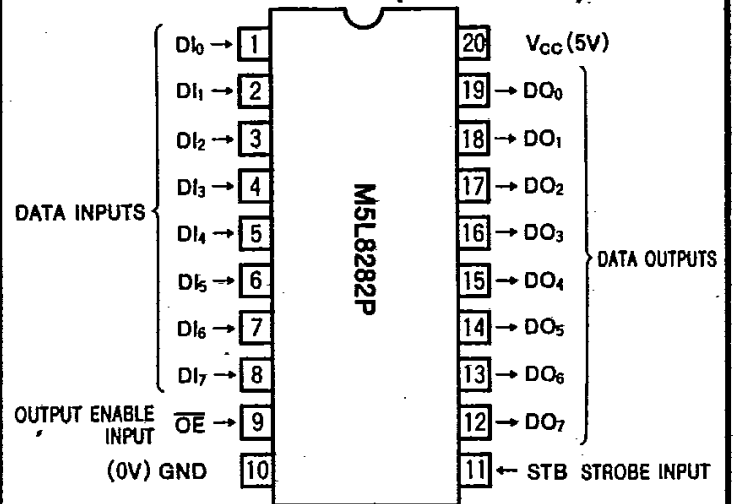
Outline 20P4

Outline 20P4

BLOCK DIAGRAM

M5L8282P

M5L8283P

ABSOLUTE MAXIMUM RATINGS ($T_a=0\sim75°C$, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply voltage		$-0.5\sim+7$	V
V_I	Input voltage		$-0.5\sim+5.5$	V
V_O	Output voltage		$-0.5\sim V_{CC}$	V
T_{opr}	Operating free-air temperature range		$0\sim+75$	°C
T_{stg}	Storage temperature range		$-65\sim+150$	°C

RECOMMENDED OPERATING CONDITIONS ($T_a=0\sim75°C$, unless otherwise noted)

Symbol	Parameter		Limits		Unit
			Min	Nom	Max	
V_{CC}	Supply voltage		4.5	5	5.5	V
I_{OH}	High-level output current	$V_{OH}\geq2.4V$	0		-5	mA
I_{OL}	Low-level output current	$V_{OL}\leq0.45V$	0		32	mA

ELECTRICAL CHARACTERISTICS ($T_a=0\sim75°C$, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_{IH}	High-level input voltage		2			V
V_{IL}	Low-level input voltage				0.8	V
V_{IC}	Input clamp voltage	$V_{CC}=4.5V$, $I_{IC}=-5mA$			-1	V
V_{OH}	High-level output voltage	$V_{CC}=4.5V$, $I_{OH}=-5mA$	2.4			V
V_{OL}	Low-level output voltage	$V_{CC}=4.5V$, $I_{OL}=32mA$			0.45	V
I_{OZH}	Off-state output current, high-level applied to the output	$V_{CC}=5.5V$, $V_I=2V$, $V_O=5.25V$			50	μA
I_{OZL}	Off-state output current, low-level applied to the output	$V_{CC}=5.5V$, $V_I=2V$, $V_O=0.4V$			-50	μA
I_{IH}	High-level input current	$V_{CC}=5.5V$, $V_I=5.25V$			50	μA
I_{IL}	Low-level input current	$V_{CC}=5.5V$, $V_I=0.45V$			-0.2	mA
I_{CC}	Supply current	$V_{CC}=5.5V$			80	mA
C_{IN}	Input capacitance	$F=1MHz$, $V_{BIAS}=2.5V$ $V_{CC}=5V$, $T_a=25°C$			12	pF

## SWITCHING CHARACTERISTICS ($V_{CC}=5V\pm10\%$, $T_a=0\sim75°C$, unless otherwise noted)

Symbol	Parameter	Alternate symbol	Test conditions	M5L8282P			M5L8283P			Unit
				Limits			Limits			
				Min	Typ	Max	Min	Typ	Max	
t_{PLH} t_{PHL}	Propagation time from DI input to DO or $\overline{DO}$ for low-to-high or high-to-low change	T_{IVOV}		5		30	5		22	ns
t_{PLH} t_{PHL}	Propagation time from STB input to DO or $\overline{DO}$ for low-to-high and high-to-low change	T_{SHOV}		10		45	10		40	ns
t_{PZH} t_{PZL}	Propagation time from $\overline{OE}$ input to DO or $\overline{DO}$ output when output is enabled	T_{ELOV}	(Note 1)	10		30	10		30	ns
t_{PHZ} t_{PLZ}	Propagation time from $\overline{OE}$ input to DO or DO output when the output is disabled	T_{EHOV}		5		18	5		18	ns

TIMING REQUIREMENTS ($V_{CC}=5V\pm10\%$, $T_a=0\sim75°C$, unless otherwise noted)

Symbol	Parameter	Alternate symbol	Test conditions	Limits			Unit
				Min	Typ	Max	
$t_{W(STBH)}$	Strobe STB high pulse width	T_{SHSL}		15			ns
t_{su}	Strobe STB setup time for $DI_0\sim DI_7$	T_{IVSL}		0			ns
t_h	STB hold time for $DI_0\sim DI_7$	T_{SLIX}		25			ns

Note 1 : Test Circuit
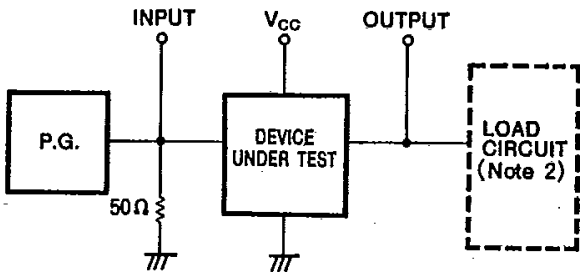
Note 2 :

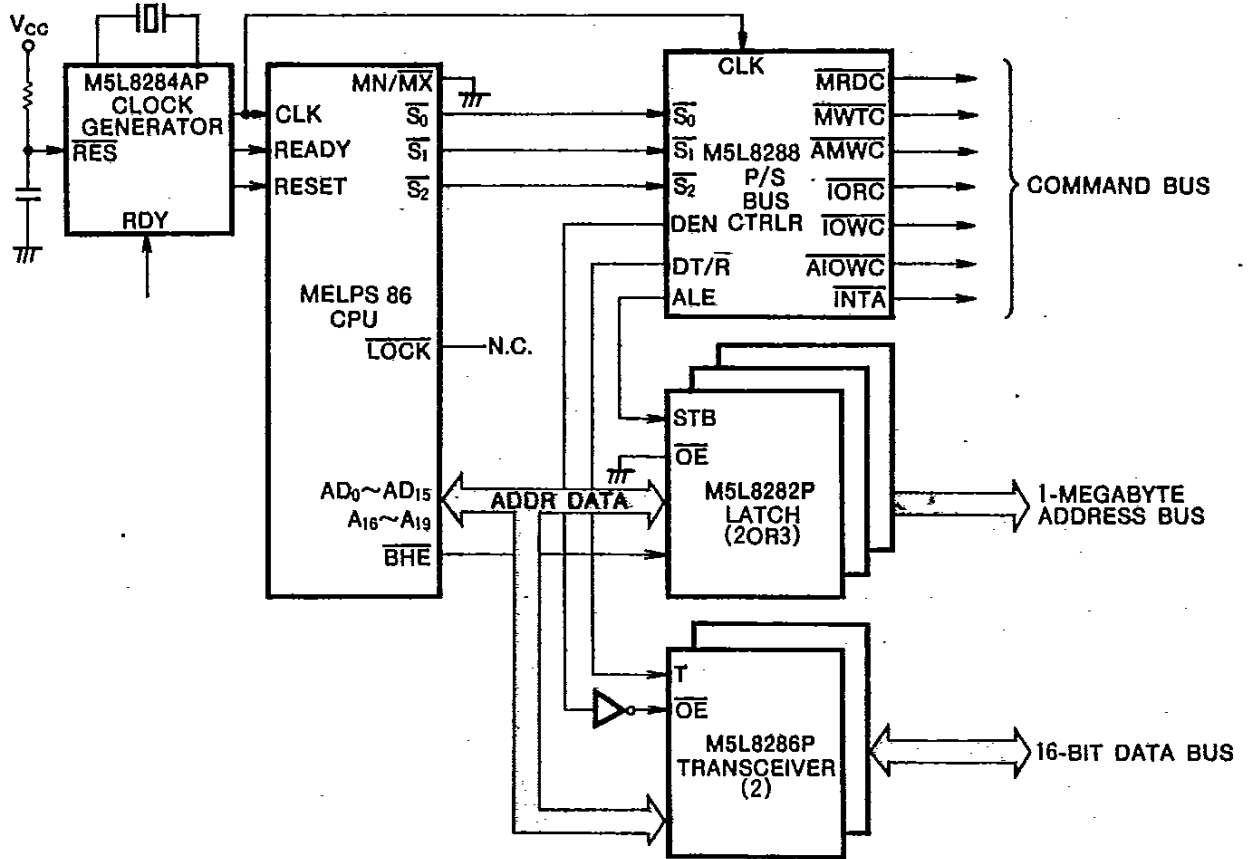| TEST ITEM	t_{PLH}, t_{PHL}	t_{PLZ}, t_{PZL}	t_{PHZ}, t_{PZH}
LOAD CIRCUIT	2.14V, 52.7Ω, 300pF	1.5V, 33Ω, 300pF	1.5V, 180Ω, 300pF

TIMING DIAGRAM (Reference voltage=1.5V)
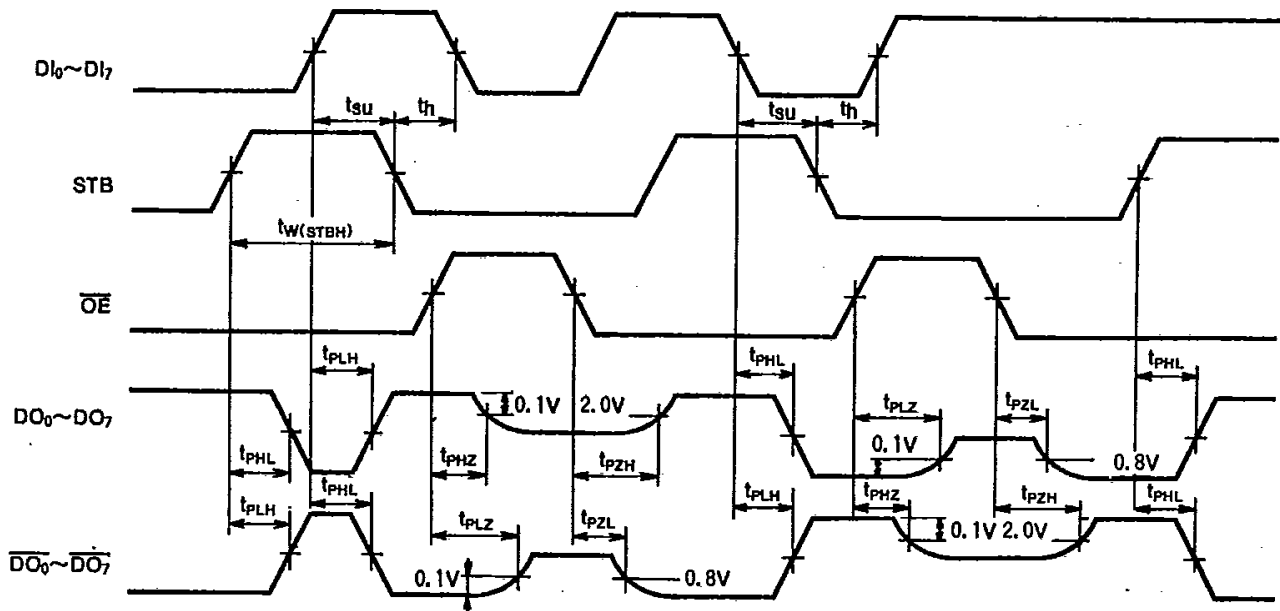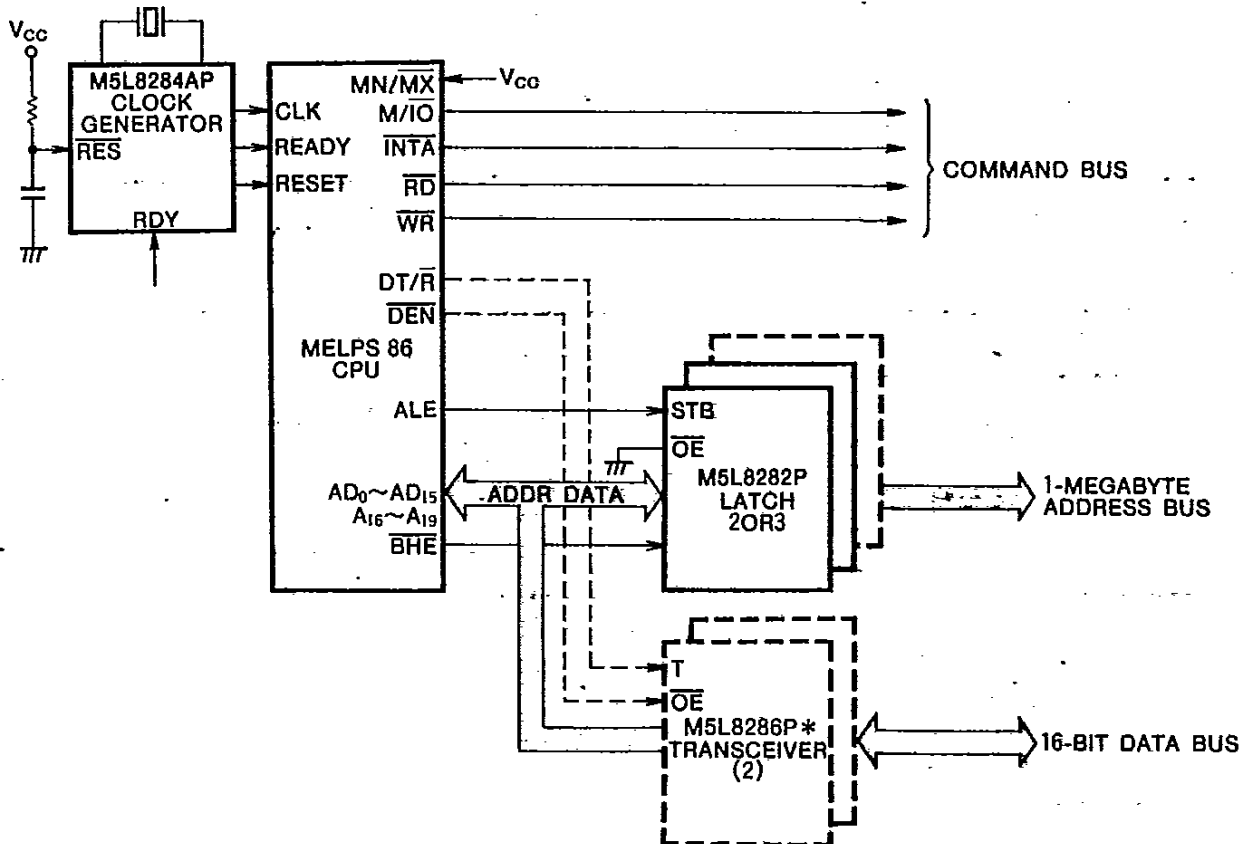

PRECAUTIONS FOR USE

Care should be taken to accommodate the glitch that is generated when STB goes from low to high with the output low for the M5L8283P.

APPLICATION EXAMPLES

(1) Use in the maximum mode

(2) Use in the minimum mode

* : Option
Required when the number of devices
driving the bus increases