

32 MBIT (4,194,304 WORD BY 8 BITS) CMOS MASK ROM

DESCRIPTION

The TC5332201AP is a 33,554,432-bit Read Only Memory organized as 4,194,304 words by 8 bits.

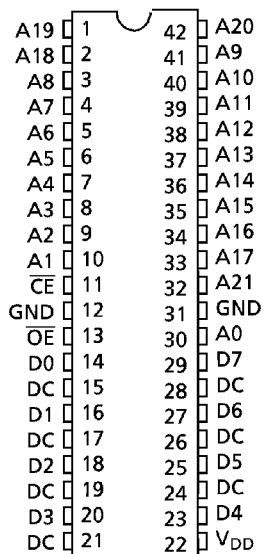
The TC5332201AP is most suitable for application such as program memory, data memory, and character generators.

The TC5332201AP is packaged in a standard 600 mil 42-pin DIP.

FEATURES

- Single 5 V Power Supply
- Access Time: 120 ns (max)
- Power Dissipation
Operating Current: 45 mA (max)
Standby Current : 100 μ A (max)
- Fully Static Operation
- All Inputs and Outputs: TTL Compatible
- Three State Outputs
- TC5332201AP: DIP42-P-600

PIN ASSIGNMENT (TOP VIEW)



TC5332201AP

PIN NAMES

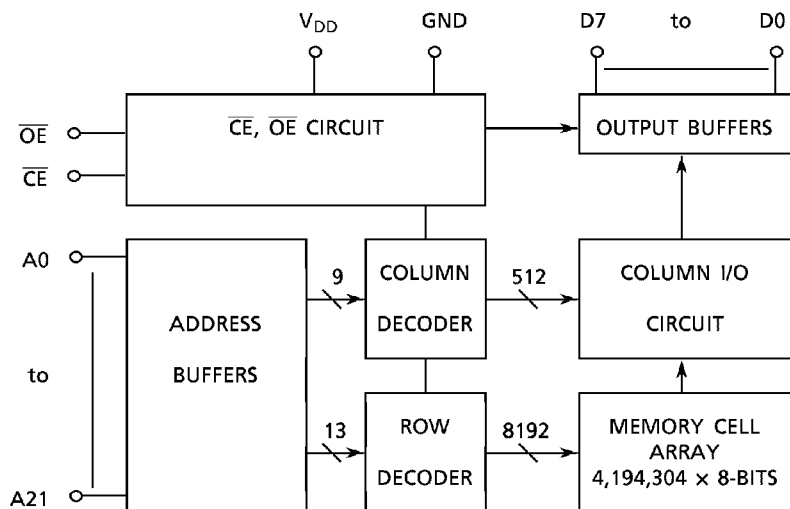
A0 to A21	Address Inputs
D0 to D7	Data Outputs
\overline{CE}	Chip Enable Input
\overline{OE}	Output Enable Input
DC	Don't Care Connection
V _{DD}	Power Supply
GND	Ground

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BLOCK DIAGRAM



MODE SELECTION

MODE	\overline{CE}	\overline{OE}	D0 to D7	POWER
Read (8-Bit)	L	L	Data Out	Active
Output Deselect	L	H	High Impedance	Active
Standby	H	*	High Impedance	Standby

H: V_{IH} L: V_{IL} *: V_{IH} or V_{IL}

ABSOLUTE MAXIMUM RATINGS

SYMBOL	RATING	VALUE	UNIT
V_{DD}	Power Supply Voltage	- 0.5 to 7.0	V
V_{IN}	Input Voltage	- 0.5 to 7.0	V
V_{OUT}	Output Voltage	0 to $V_{DD} + 0.5$	V
P_D	Power Dissipation	0.6	W
T_{STG}	Storage Temperature	- 55 to 150	°C
T_{OPR}	Operating Temperature	- 10 to 70	°C
T_{SOLDER}	Soldering Temperature (10s)	260	°C

DC RECOMMENDED OPERATING CONDITIONS ($T_a = -10^\circ$ to 70°C)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
V_{DD}	Power Supply Voltage	4.5	5.0	5.5	V
V_{IH}	Input High Voltage	2.2	–	$V_{DD} + 0.5$	V
V_{IL}	Input Low Voltage	– 0.3	–	0.8	V

DC CHARACTERISTICS ($T_a = -10^\circ$ to 70°C , $V_{DD} = 5\text{ V} \pm 10\%$)

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
I_{IL}	Input Leakage Current	$V_{IN} = 0$ to V_{DD}	–	± 5.0	μA
I_{LO}	Output Leakage Current	$V_{OUT} = 0$ to V_{DD}	–	± 5.0	μA
I_{OH}	Output High Current	$V_{OH} = 2.4\text{ V}$	– 1.0	–	mA
I_{OL}	Output Low Current	$V_{OL} = 0.4\text{ V}$	2.0	–	mA
I_{DDS1}	Standby Current	$\overline{CE} = V_{IH}$	–	2	mA
I_{DDS2}		$\overline{CE} = V_{DD} - 0.2\text{ V}$	–	100	μA
I_{DDO1}	Operating Current	$V_{IN} = V_{IH}/V_{IL}$, $t_{\text{cycle}} = 120\text{ ns}$ $I_{OUT} = 0\text{ mA}$	–	50	mA
I_{DDO2}		$V_{IN} = V_{DD} - 0.2\text{ V}/0.2\text{ V}$ $t_{\text{cycle}} = 120\text{ ns}$, $I_{OUT} = 0\text{ mA}$	–	45	mA

CAPACITANCE ($f = 1\text{ MHz}$, $T_a = 25^\circ\text{C}$, $V_{DD} = 5.0\text{ V}$)

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
C_{IN}	Input Capacitance	$V_{IN} = 0\text{ V}$	–	15	pF
C_{OUT}	Output Capacitance	$V_{OUT} = 0\text{ V}$	–	15	pF

Note: This parameter is periodically sampled and is not tested for every component.

AC CHARACTERISTICS AND OPERATING CONDITIONS

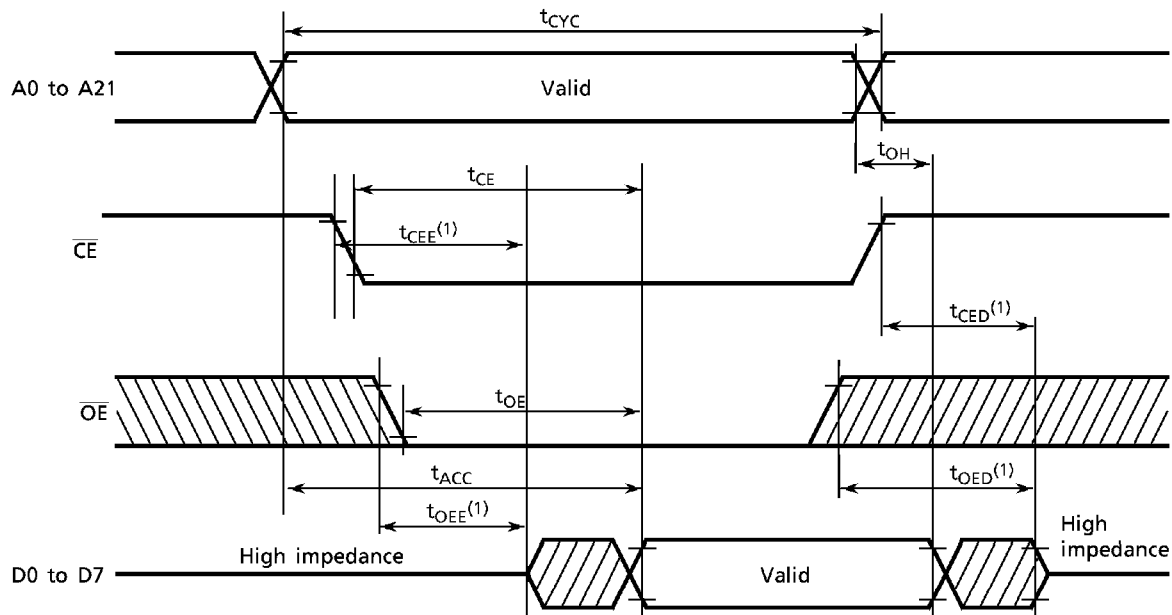
($T_a = -10^\circ$ to 70°C , $V_{DD} = 5\text{ V} \pm 10\%$)

SYMBOL	PARAMETER	MIN	MAX	UNIT
t_{CYC}	Cycle Time	120	-	ns
t_{ACC}	Address Access Time	-	120	ns
t_{CE}	Chip Enable Access Time	-	120	ns
t_{OE}	Output Enable Access Time	-	60	ns
t_{CEE}	Output Enable Time from \overline{CE}	0	-	ns
t_{OEE}	Output Enable Time from \overline{OE}	0	-	ns
t_{CED}	Output Disable Time from \overline{CE}	-	45	ns
t_{OED}	Output Disable Time from \overline{OE}	-	35	ns
t_{OH}	Output Hold Time	5	-	ns

AC TEST CONDITIONS

Output Load : 100 pF + 1 TTL
 Input Levels : 0.6 V/2.4 V
 Timing Measurement Reference Levels Input : 0.8 V/2.2 V
 Output: 0.8 V/2.2 V
 Input Rise and Fall Time : 5 ns

8-BIT READ MODE

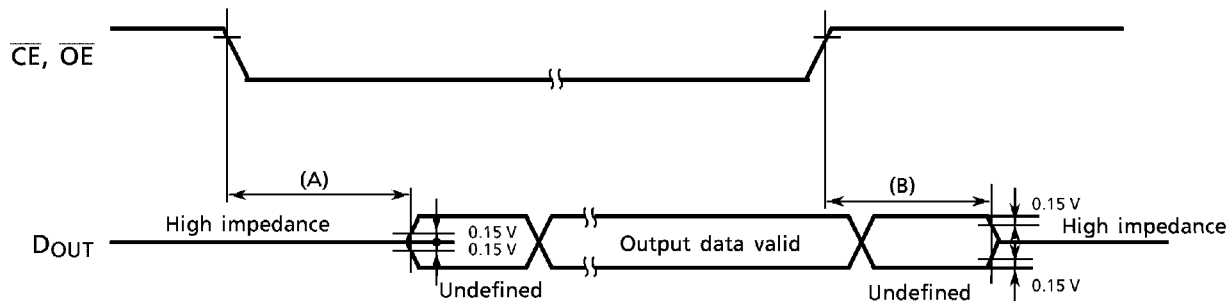


Note 1

The following parameters are specified:

(A) t_{CEE} , t_{OEE} Output Enable Time

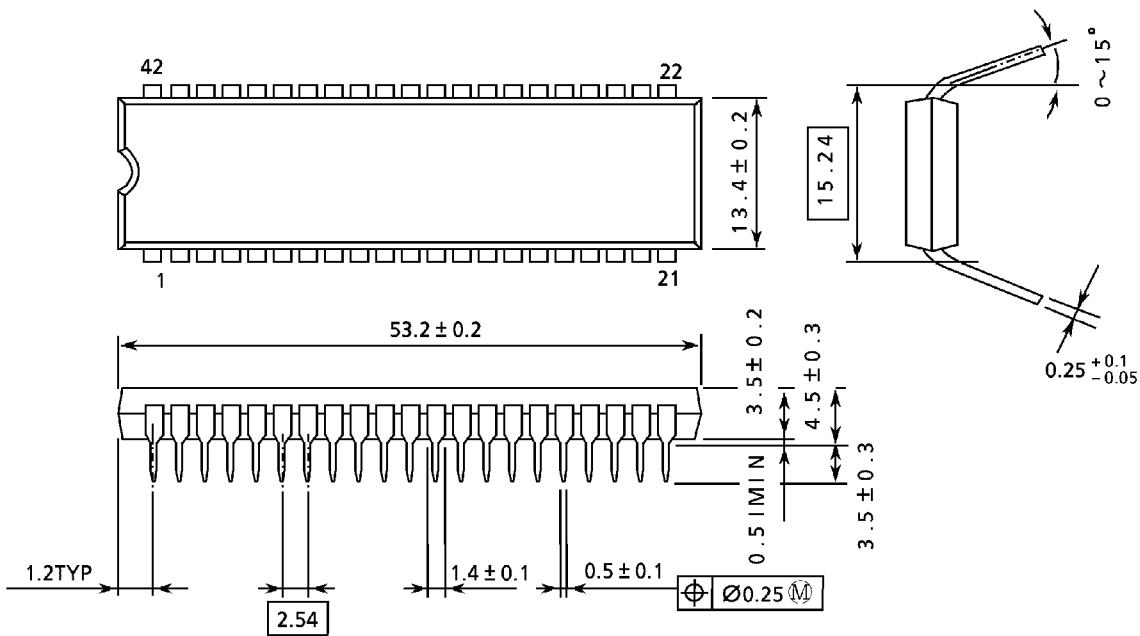
(B) t_{CED} , t_{OED} Output Disable Time



PACKAGE DIMENSIONS

- Plastic DIP
DIP42-P-600

UNITS: mm



Note: Package width and length do not include mold protrusion. The permissible mold protrusion is 0.15 mm.

TC5332201AP-6*
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