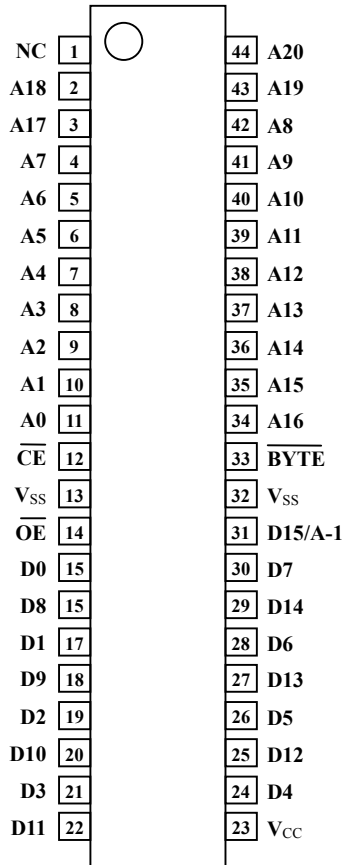




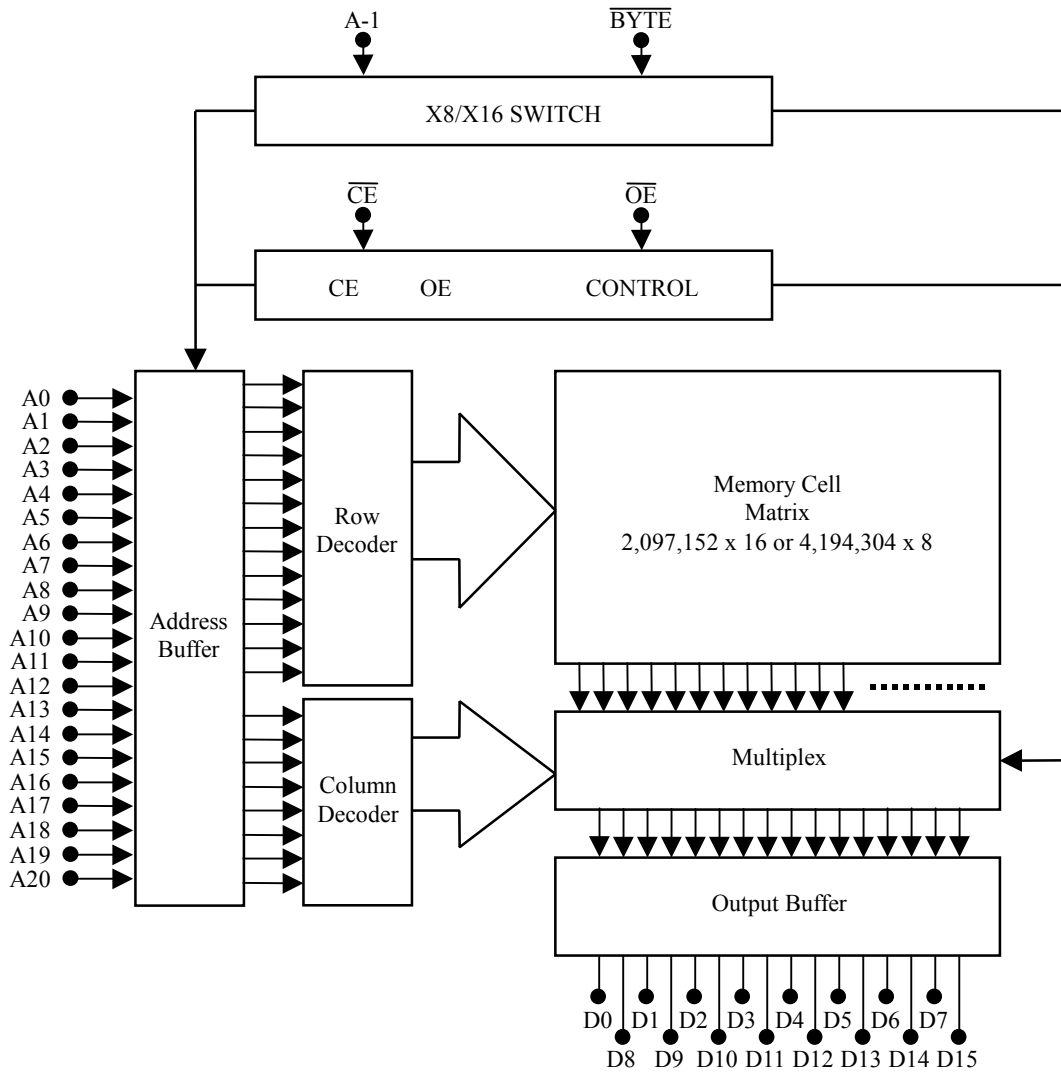
**PIN CONFIGURATION (TOP VIEW)**



**44-Pin SOP  
44-Pin TSOPII**

PIN NAMES	FUNCTIONS
D15/A-1	Data output / Address input
A0~A20	Address input
D0~D14	Data output
$\overline{CE}$	Chip enable
$\overline{OE}$	Output enable
$\overline{BYTE}$	Mode switch
$V_{CC}$	Power supply voltage
$V_{SS}$	GND
NC	Non connection

**BLOCK DIAGRAM**



**FUNCTION TABLE**

MODE	$\overline{CE}$	$\overline{OE}$	$\overline{BYTE}$	D0~D7	D8~D14	A-1/D15
STAND BY	H	X	X	Hi-Z	Hi-Z	L/H
OUTPUT DISABLE	L	H	H			
OUTPUT DISABLE	L	H	L			
READ(16-BIT)	L	L	H	$D_{OUT}$		
READ(8-BIT)	L	L	L	$D_{OUT}$	Hi-Z	L/H

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Condition	Value	Unit
Operating temperature under bias	T <sub>OPR</sub>	-	0 ~ 70	°C
Storage temperature	T <sub>STG</sub>	-	-55 ~ 125	°C
Input voltage	V <sub>I</sub>	Relative to V <sub>SS</sub>	-0.5 ~ V <sub>CC</sub> +0.5	V
Output voltage	V <sub>O</sub>		-0.5 ~ V <sub>CC</sub> +0.5	V
Power supply voltage	V <sub>CC</sub>		-0.5 ~ 5	V
Power dissipation per package	P <sub>D</sub>	-	1.0	W

## RECOMMENDED OPERATING CONDITIONS FOR READ

(Ta=0 ~ 70°C)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
V <sub>CC</sub> power supply voltage	V <sub>CC</sub>	V <sub>CC</sub> =2.7V ~ 3.6V	2.7	-	3.6	°C
Input "H" level	V <sub>IH</sub>		2.2	-	V <sub>CC</sub> +0.5	°C
Input "L" level	V <sub>IL</sub>		-0.5	-	0.8	V

Voltage is relative to V<sub>SS</sub>

## PIN Capacitance

(V<sub>CC</sub>=3.3V, Ta=25°C, f=1MHz)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
Input	C <sub>IN</sub>	V <sub>I</sub> =0V	-	-	12	pF
Output	C <sub>OUT</sub>	V <sub>O</sub> =0V	-	-	15	pF

## ELECTRICAL CHARACTERISTICS

## DC Characteristics 1

(V<sub>CC</sub>=2.7V~3.3V, Ta=0~70°C)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
Input leakage current	C <sub>IN</sub>	V <sub>I</sub> =0V~V <sub>CC</sub>	-	-	10	μA
Output leakage current	C <sub>OUT</sub>	V <sub>O</sub> =0V~V <sub>CC</sub>	-	-	10	μA
V <sub>CC</sub> power supply current (Standby)	I <sub>CCSC</sub>	$\overline{CE}=V_{CC}$	-	-	10	μA
	I <sub>CCST</sub>	$\overline{CE}=V_{IH}$	-	-	1	mA
V <sub>CC</sub> power supply current (Active)	I <sub>CCA</sub>	$\overline{CE}=V_{IL}, \overline{OE}=V_{IH}$ tc=120ns	-	-	30	mA
Input "H" level	V <sub>IH</sub>	-	2.0	-	V <sub>CC</sub> +0.5	V
Input "L" level	V <sub>IL</sub>	-	-0.5	-	0.8	V
Output "H" level	V <sub>OH</sub>	I <sub>OH</sub> =-200 μA	V <sub>CC</sub> -0.4	-	-	V
Output "L" level	V <sub>OL</sub>	I <sub>OL</sub> =1mA	-	-	0.4	V

Voltage is relative to V<sub>SS</sub>

## DC Characteristics 2

(V<sub>CC</sub>=3.0V~3.6V, Ta=0~70°C)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
Input leakage current	C <sub>IN</sub>	V <sub>I</sub> =0V~V <sub>CC</sub>	-	-	10	μA
Output leakage current	C <sub>OUT</sub>	V <sub>O</sub> =0V~V <sub>CC</sub>	-	-	10	μA
V <sub>CC</sub> power supply current (Standby)	I <sub>CCSC</sub>	$\overline{CE}=V_{CC}$	-	-	10	μA
	I <sub>CCST</sub>	$\overline{CE}=V_{IH}$	-	-	1	mA
V <sub>CC</sub> power supply current (Active)	I <sub>CCA</sub>	$\overline{CE}=V_{IL}, \overline{OE}=V_{IH}$ tc=100ns	-	-	40	mA
Input "H" level	V <sub>IH</sub>	-	2.0	-	V <sub>CC</sub> +0.5	V
Input "L" level	V <sub>IL</sub>	-	-0.5	-	0.8	V
Output "H" level	V <sub>OH</sub>	I <sub>OH</sub> =-200 μA	V <sub>CC</sub> -0.4	-	-	V
Output "L" level	V <sub>OL</sub>	I <sub>OL</sub> =1mA	-	-	0.4	V

Voltage is relative to V<sub>SS</sub>

AC Characteristics 1

(V<sub>CC</sub>=2.7V~3.3V, T<sub>a</sub>=0~70°C)

Parameter	Symbol	Condition	Min.	Min.	Unit
Address access cycle time	T <sub>C</sub>	-	120	-	ns
Address access time	T <sub>ACC</sub>	$\overline{CE}=\overline{OE}=V_{IL}$	-	120	ns
$\overline{CE}$ access time	T <sub>CE</sub>	$\overline{OE}=V_{IL}$	-	120	ns
$\overline{OE}$ access time	T <sub>OE</sub>	$\overline{CE}=V_{IL}$	-	40	ns
Output disable time	T <sub>CHZ</sub>	$\overline{OE}=V_{IL}$	0	35	ns
	T <sub>OHZ</sub>	$\overline{CE}=V_{IL}$	0	30	ns
Output hold time	T <sub>OH</sub>	$\overline{CE}=\overline{OE}=V_{IL}$	0	-	ns

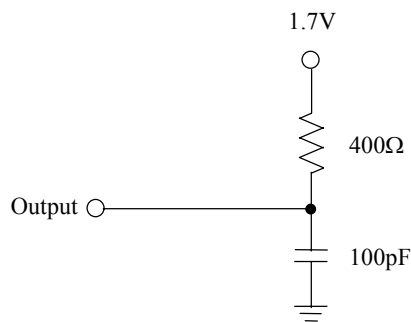
AC Characteristics 2

(V<sub>CC</sub>=3.0V~3.6V, T<sub>a</sub>=0~70°C)

Parameter	Symbol	Condition	Min.	Min.	Unit
Address access cycle time	T <sub>C</sub>	-	100	-	ns
Address access time	T <sub>ACC</sub>	$\overline{CE}=\overline{OE}=V_{IL}$	-	100	ns
$\overline{CE}$ access time	T <sub>CE</sub>	$\overline{OE}=V_{IL}$	-	100	ns
$\overline{OE}$ access time	T <sub>OE</sub>	$\overline{CE}=V_{IL}$	-	30	ns
Output disable time	T <sub>CHZ</sub>	$\overline{OE}=V_{IL}$	0	30	ns
	T <sub>OHZ</sub>	$\overline{CE}=V_{IL}$	0	25	ns
Output hold time	T <sub>OH</sub>	$\overline{CE}=\overline{OE}=V_{IL}$	0	-	ns

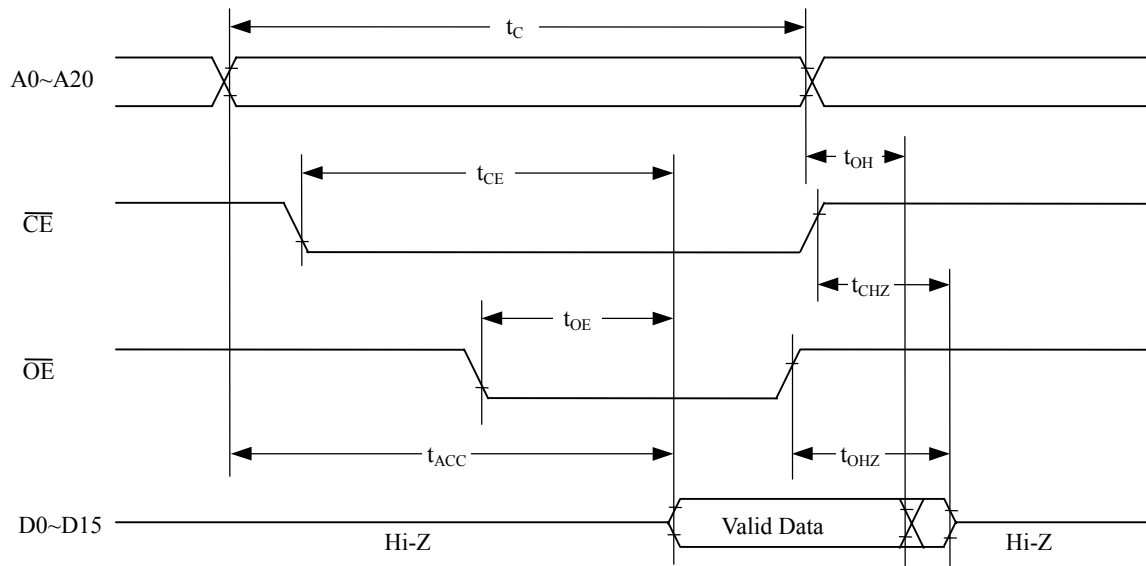
Measurement condition

Input signal level	0V/3V
Input timing reference level	0.8V/2.0V
Output load	100pF
Output timing reference level	0.8V/2.0V

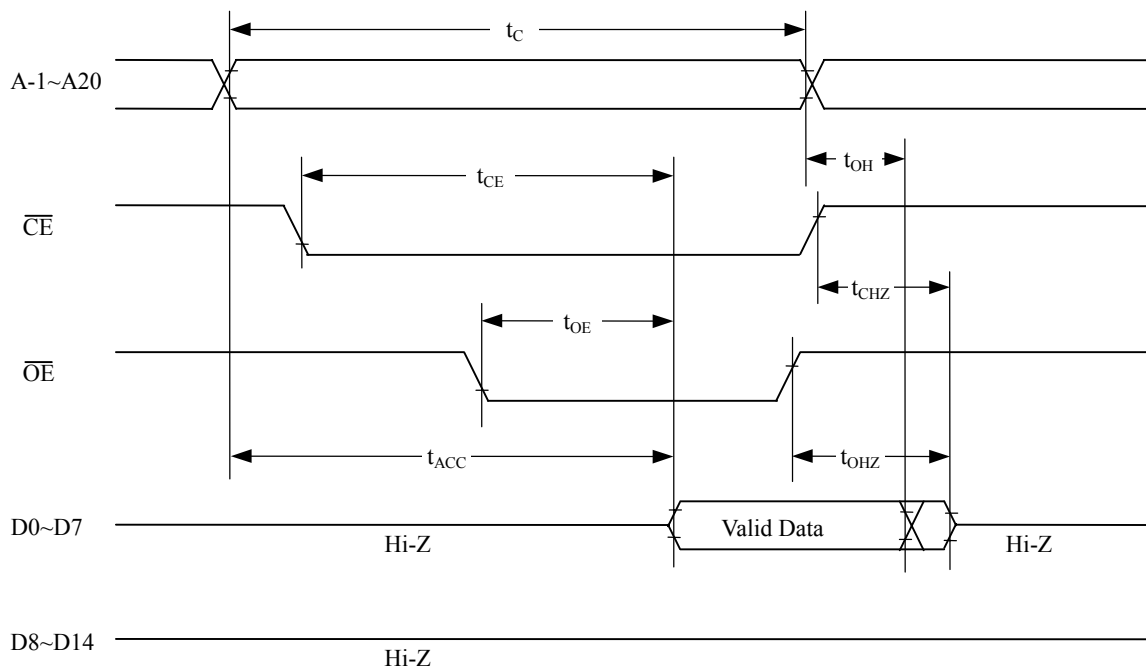


TIMING CHART

16BIT READ MODE ( $\overline{\text{BYTE}}=\text{H}$ )



8BIT READ MODE ( $\overline{\text{BYTE}}=\text{L}$ )



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