OKI SEMICONDUCTOR

Dear customers,

About the change in the name such as "Oki Electric Industry Co. Ltd." and "OKI" in documents to OKI Semiconductor Co., Ltd.

The semiconductor business of Oki Electric Industry Co., Ltd. was succeeded to OKI Semiconductor Co., Ltd. on October 1, 2008. Therefore, please accept that although the terms and marks of "Oki Electric Industry Co., Ltd.", “Oki Electric”, and "OKI" remain in the documents, they all have been changed to "OKI Semiconductor Co., Ltd.". It is a change of the company name, the company trademark, and the logo, etc. , and NOT a content change in documents.

October 1, 2008
OKI Semiconductor Co., Ltd.

OKI SEMICONDUCTOR CO., LTD.

550-1 Higashiasakawa-cho, Hachioji-shi, Tokyo 193-8550, Japan
http://www.okisemi.com/en/

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Previous version: -------

OKI Semiconductor

MR533202J Preliminary

2,097,152-Word X 16-Bit or 4,097,152-Word X 8-Bit MASK ROM

DESCRIPTION

The MR533202J is a 32Mbit Read-Only Memory whose configuration can be electrically switched between 2,097,152 word x 16bit and 4,194,304 word x 8bit. The MR533202J operates asynchronously, external clocks are not required, making this device easy-to-use. The MR533202J is suitable as large-capacity fixed memory for microcomputers and data terminals. It is manufactured using a CMOS silicon gate technology and is offered in 44-pin SOP or 44-pin TSOP packages.

FEATURES

· 2,097,152 word x 16bit / 4,194,304 word x 8bit electrically switchable configuration

· Single +4.5V~5.5V power supply

· Access time 100ns

· V_{CC} power supply current 65mA

· V_{CC} standby current 50µA

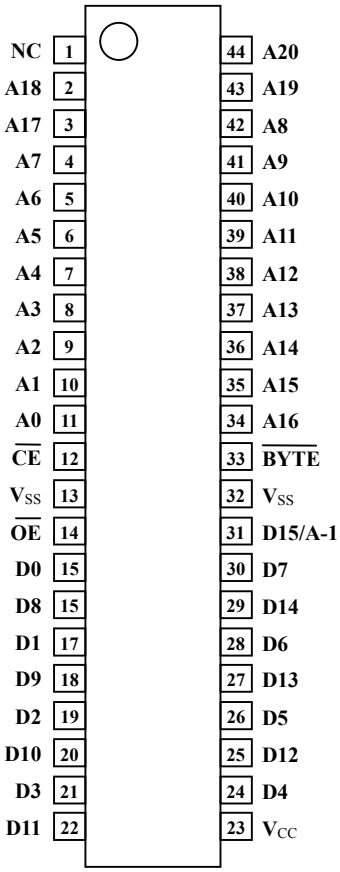
· Input / Output TTL compatible

· Three-state output

· Packages

44-pin plastic SOP	(SOP44-P-600-1.27-K)	MR533202J-XXMA
44-pin plastic TSOP	(TSOPII44-P-400-0.80-K)	MR533202J-XXTP

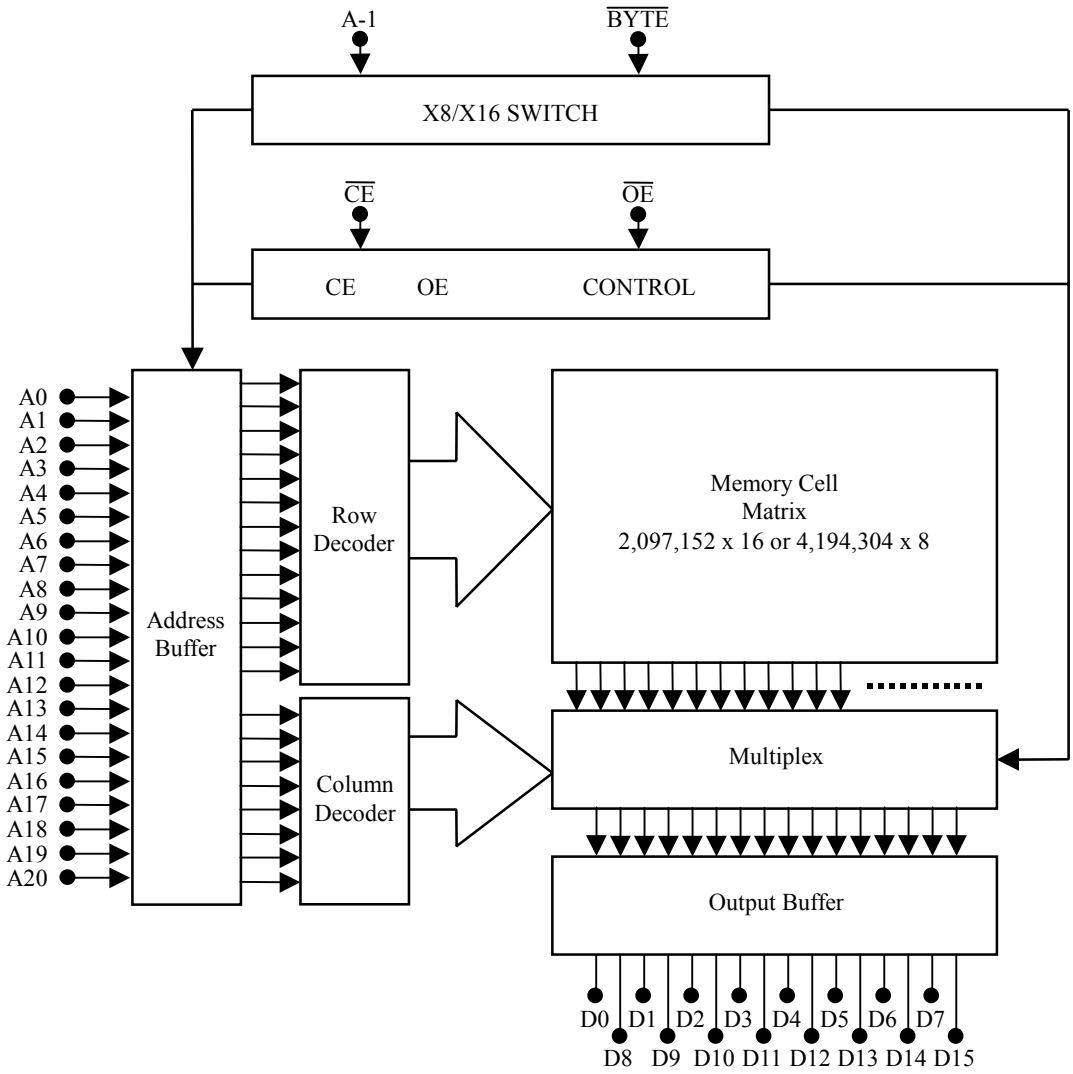
PIN CONFIGURATION (TOP VIEW)



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		
OUTPUT DISABLE	L	H	H			
	L	H	L			L/H
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_{OPR}	-	0 ~ 70	`C
Storage temperature	T_{STG}	-	-55 ~ 125	`C
Input voltage	V_I	Relative to V_{SS}	-0.5 ~ V_{CC}+0.5	V
Output voltage	V_O		-0.5 ~ V_{CC}+0.5	V
Power supply voltage	V_{CC}		-0.5 ~ 7	V
Power dissipation per package	P_D	-	1.0	W

RECOMMENDED OPERATING CONDITIONS FOR READ

(Ta=0 ~ 70`C)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
V_{CC} power supply voltage	V_{CC}	V_{CC}=4.5V ~ 5.5V	4.5	5.0	5.5	`C
Input “H“ level	V_{IH}		2.2	-	V_{CC}+0.5	`C
Input “L“ level	V_{IL}		-0.5	-	0.8	V

Voltage is relative to V_{SS}

PIN Capacitance

(Vcc=5.0V, Ta=25`C, f=1MHz)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
Input	C_{IN}	V_I=0V	-	-	12	pF
Output	C_{OUT}	V_O=0V	-	-	15	pF

ELECTRICAL CHARACTERISTICS

DC Characteristics

(Vcc=4.5V~5.5V, Ta=0~70`C)

Parameter	Symbol	Condition	Min.	Typ.	Min.	Unit
Input leakage current	C_{IN}	V_I=0V~V_{CC}	-	-	10	μA
Output leakage current	C_{OUT}	V_O=0V~V_{CC}	-	-	10	μA
V_{CC} power supply current (Standby)	I_{CCSC}	$\overline{CE}$= V_{CC}	-	-	50	μA
	I_{CCST}	$\overline{CE}$= V_{IH}	-	-	1	mA
V_{CC} power supply current (Active)	I_{CCA}	$\overline{CE}$= V_{IL}, $\overline{OE}$= V_{IH} tc= 100ns	-	-	65	mA
Input "H" level	V_{IH}	-	2.2	-	V_{CC}+0.5	V
Input "L" level	V_{IL}	-	-0.5	-	0.8	V
Output "H" level	V_{OH}	I_{OH}=-400 μA	2.4	-	-	V
Output "L" level	V_{OL}	I_{OL}=2.1mA	-	-	0.4	V

Voltage is relative to V_{SS}

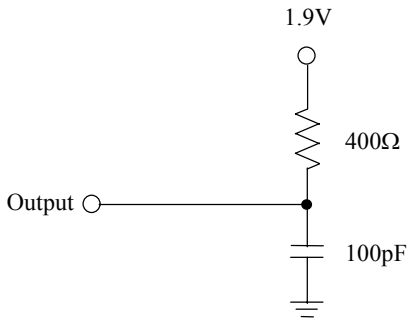
AC Characteristics

(Vcc=4.5V~5.5V, Ta=0~70`C)

Parameter	Symbol	Condition	Min.	Min.	Unit
Address access cycle time	T_C	-	100	-	ns
Address access time	T_{ACC}	$\overline{CE}$=$\overline{OE}$= V_{IL}	-	100	ns
$\overline{CE}$ access time	T_{CE}	$\overline{OE}$= V_{IL}	-	100	ns
$\overline{OE}$ access time	T_{OE}	$\overline{CE}$= V_{IL}	-	50	ns
Output disable time	T_{CHZ}	$\overline{OE}$= V_{IL}	0	40	ns
	T_{OHZ}	$\overline{CE}$= V_{IL}	0	30	ns
Output hold time	T_{OH}	$\overline{CE}$=$\overline{OE}$= V_{IL}	0	-	ns

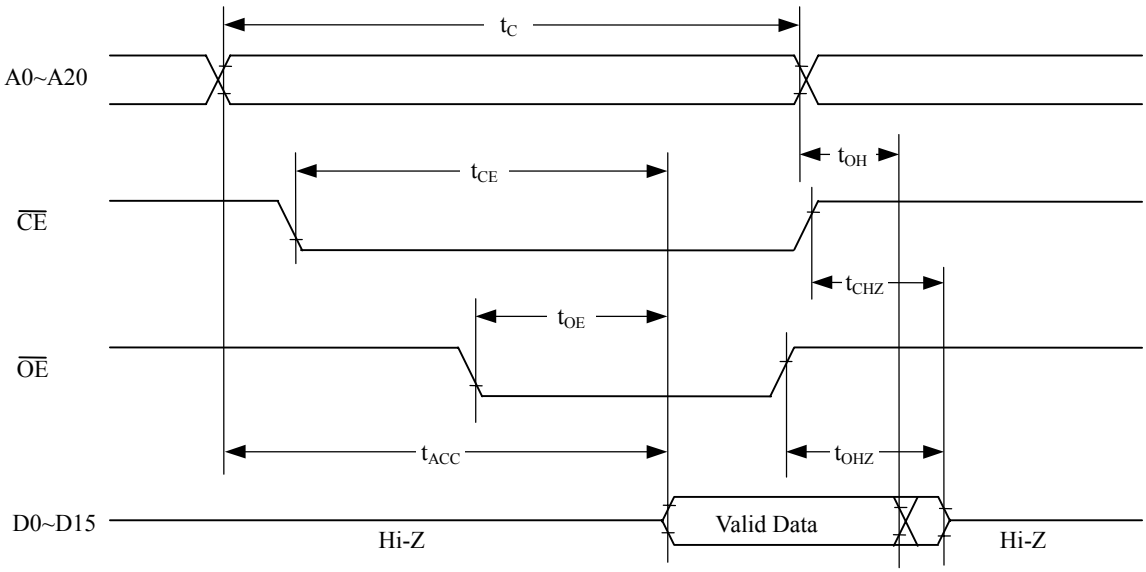
Measurement condition

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

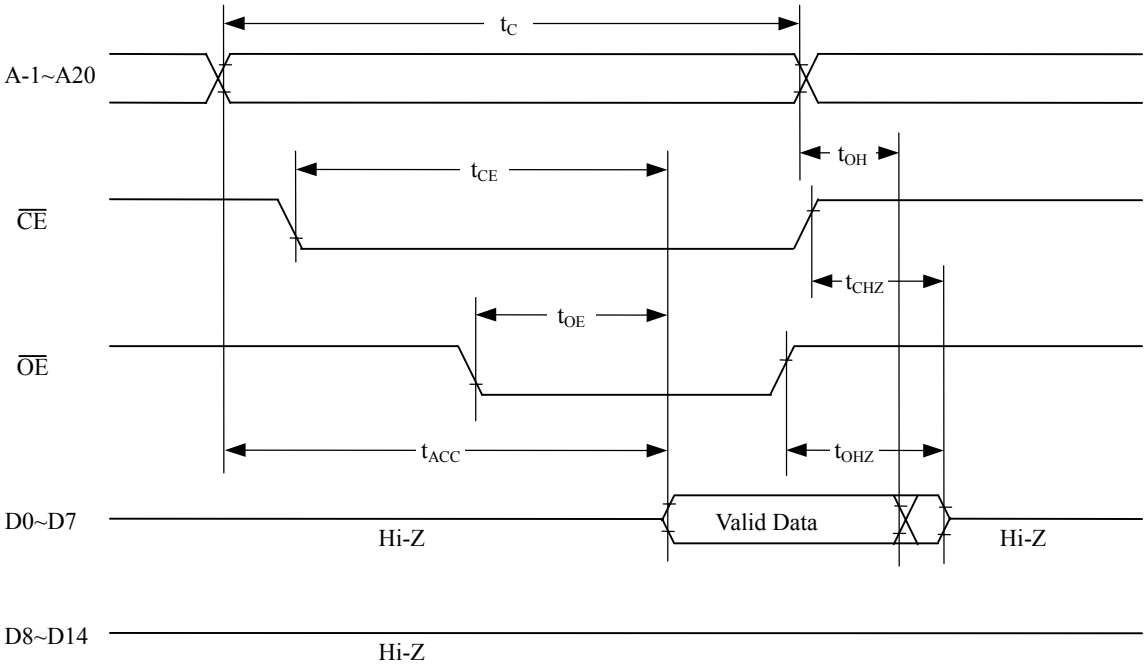


TIMING CHART

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



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



NOTICE

The information contained herein can change without notice owing to product and/or technical improvements. Before using the product, please make sure that the information being referred to is up-to-date.

The outline of action and examples for application circuits described herein have been chosen as an explanation for the standard action and performance of the product. When planning to use the product, please ensure that the external conditions are reflected in the actual circuit, assembly, and program designs.

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People To People Technology

ADDRESSES & SEMICONDUCTOR WEB SITES

OKI Electric Industry Co., Ltd.,
Device Business Group,
10-3, Shibaura, 4-chome,
Minato-ku, Tokyo 108, Japan,
Tel.: +81-(0)3-5445-6327,
Fax.: +81-(0)3-5445-6328,
http://www.oki.co.jp/semi/

OKI Semiconductor Group,
785 North Mary Avenue,
Sunnyvale, CA 94086, U.S.A.,
Tel.: +1-408-720-1900,
Fax.: +1-408-720-1918,
http://www.okisemi.com/

OKI Electric Europe GmbH,
Head Office Europe,
Hellersbergstrasse 2,
D-41460 Neuss, Germany,
Tel: +49-2131-15960,
Fax: +49-2131-103539,
http://www.oki-europe.de/

OKI Electronics (Hong Kong) Ltd.,
Suite 1901-1&19, Tower 3,
China Hong Kong City,
33 Canton Road, Tsimshatsui,
Kowloon, Hong Kong,
Tel.: +852-2-736-2336,
Fax.: +852-2-736-2395

OKI Semiconductor (Asia) Pte. Ltd.,
78 Shenton Way 09-01,
Singapore 0207,
Tel.: +65-221-3722,
Fax.: +65-323-5376

OKI Semiconductor (Asia) Pte. Ltd.,
Taipei Branch,
7th Fl. No.260, Tun Hwa North Road,
Taipei, Taiwan, R.O.C.,
Sumitomo-Flysun Building,
Tel.: +886-2-2719-2561,
Fax.: +886-2-2715-2892
http://www.oki.net.tw/

For further information, please contact: