MX23C1000/MX23C1010

1M-BIT(128K x 8) CMOS MASK ROM

FEATURES

- 131,072 x 8 organization
- Single +5V power supply
- Fast access time: 120/150/200ns
- Totally static operation
- Completely TTL compatible
- Operating current: 40mA
- Standby current: 100µA
- Package type:
  - 28 pin plastic DIP/SOP
  - 32 pin plastic DIP/SOP/PLCC/TSOP

DESCRIPTION

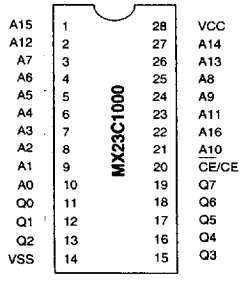
The MX23C1000/1010 is a 5V static CMOS ROM with an access time of 120/150/200ns and low standby current of 100µA. It has a total of 1M programmable bits arranged as 128K x 8-bit words. It offers a broad range of compatibility to nowaday's high speed and large program storage system designs.

The MX23C1000 is available in 28 pin DIP and MX23C1010 is 32 pin DIP. MX23C1000 pin 20 chip enable (CE/$\overline{CE}$) may be programmabled either active $\overline{HIGH}$ or LOW. MX23C1000 pin 20 output enable (OE/$\overline{OE}$) may be programmed either active HIGH or LOW.

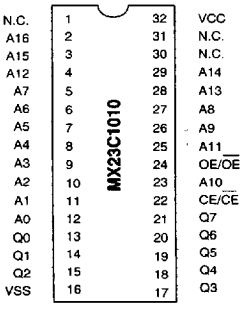
MX23C1010 pin 22 chip enable(CE/$\overline{CE}$) and pin 24(OE/$\overline{OE}$) maybe programmed either active HIGH or LOW.

PIN CONFIGURATIONS

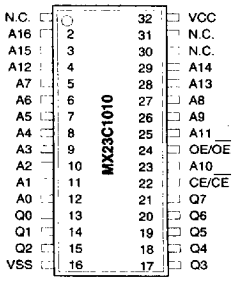
28 PDIP/SOP



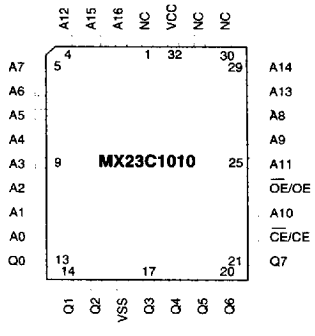
32 PDIP



32 SOP



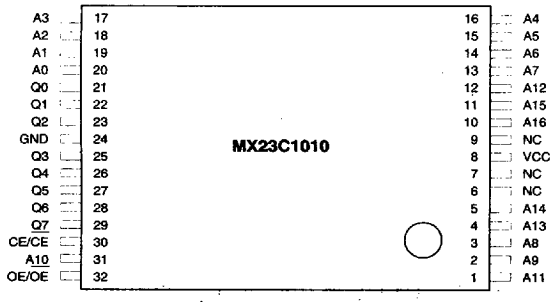
32 PLCC



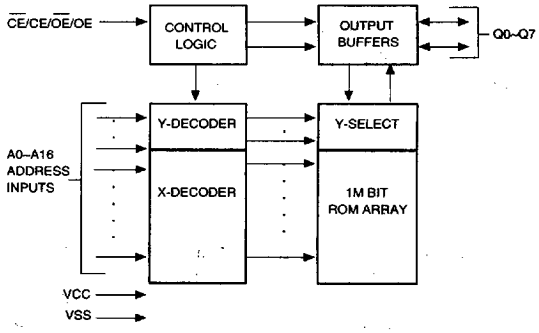
PIN FUNCTIONS

SYMBOL	PIN NAME
A0~A16	Address Input
Q0~Q7	Data Output
CE/$\overline{CE}$	Chip Enable Input
OE/$\overline{OE}$	Output Enable Input
VCC	Power Supply Pin(+5V)
VSS	Ground Pin

32 TSOP



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS*

RATING	VALUE
Ambient Operating Temperature	0°C to 70°C
Storage Temperature	-65°C to 125°C
Applied Input Voltage	-0.5V to VCC + 0.5V
Applied Output Voltage	-0.5V to VCC + 0.5V
VCC to Ground Potential	-0.5V to 7.0V
Power Dissipation	0.5W

***NOTICE:**
Stresses greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended period may affect reliability.

DC CHARACTERISTICS TA = 0°C TO 70°C, VCC = 5V ± 10%

SYMBOL	PARAMETER	MIN.	MAX.	UNIT	CONDITIONS
VOH	Output High Voltage	2.4		V	IOH = -1.0mA
VOL	Output Low Voltage		0.4	V	IOL = 2.1mA
VIH	Input High Voltage	2.2	VCC + 0.3	V	
VIL	Input Low Voltage	-0.3	0.8	V	
ILI	Input Leakage Current		10	µA	VIN = 0 to 5.5V
ILO	Output Leakage Current		10	µA	VOUT = 0 to 5.5V
ICC3	Power-Down Supply Current		100	µA	$\overline{CE}$ > VCC - 0.2V
ICC2	Standby Supply Current		1	mA	$\overline{CE}$ = VIH
ICC1	Operating Supply Current		40	mA	Note 1

CAPACITANCE TA = 25°C, f = 1.0 MHz (Note 2)

SYMBOL	PARAMETER	MIN.	MAX.	UNIT	CONTITIONS
CIN	Input Capacitance		10	pF	VIN = 0V
COUT	Output Capacitance		10	pF	VOUT = 0V

AC CHARACTERISTICS TA = 0°C to 70°C, VCC = 5V ± 10%

		23C1000/1010-12		23C1000/1010-15		23C1000/1010-20			
SYMBOL	PARAMETER	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	UNIT	CONDITIONS
tCYC	Cycle Time	120		150		200		ns	
tAA	Address Access Time		120		150		200	ns	
tOH	Output Hold Time After Address Change	10		10		10		ns	
tACE	Chip Enable Access Time		120		150		200	ns	
tAOE	Output Enable/Chip Select Access Time		80		80		100	ns	
tLZ	Output Low Z Delay	0		0		0		ns	Note 3
tHZ	Output High Z Delay		70		70		70	ns	Note 4

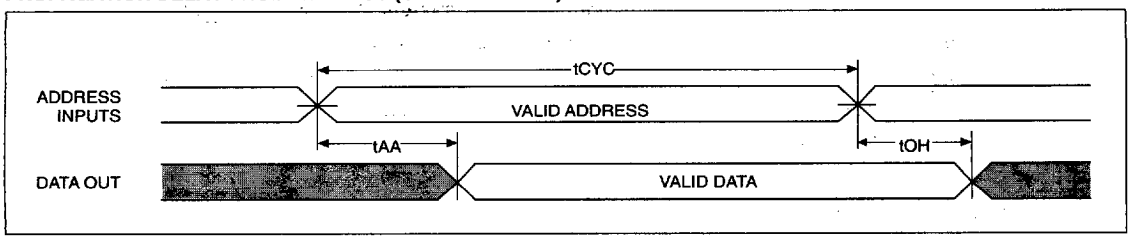
NOTE:
1. Measured with device selected at f = 5 MHz and output unloaded.
2. This parameter is periodically sampled and is not 100% tested.
3. Output low-impedance delay (tLZ) is measured from $\overline{CE}$ going low.
4. Output high-impedance delay (tHZ) is measured from $\overline{CE}$ going high.

AC TEST CONDITIONS

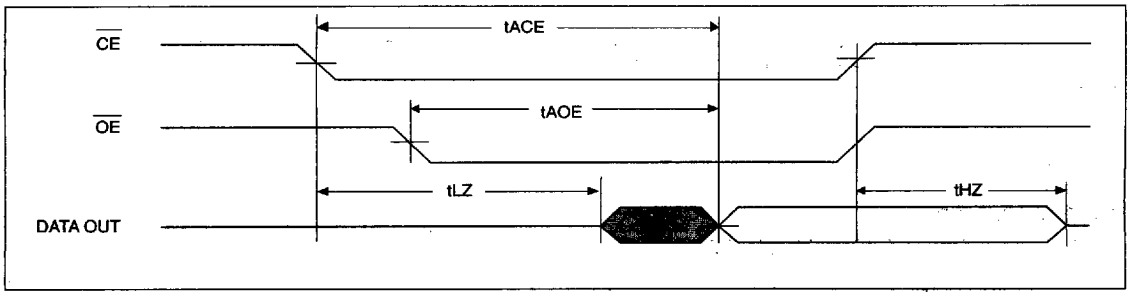
Input Pulse Levels	0.4V to 2.4V
Input Rise and Fall Times	10ns
Input Timing Level	1.5V
Output Timing Level	0.8V and 2.0V
Output Load	1TTL + 100pF

WAVEFORMS

PROPAGATION DELAY FROM ADDRESS ($\overline{CE}$/$\overline{OE}$ = ACTIVE)



PROPAGATION DELAY FROM CHIP ENABLE (ADDRESS VALID)



ORDERING INFORMATION

PART NO.	ACCESS TIME(ns)	OPERATING CURRENT MAX.(mA)	STANDBY CURRENT MAX.(μA)	PACKAGE
MX23C1000PC-12	120	40	100	28 Pin DIP
MX23C1000PC-15	150	40	100	28 Pin DIP
MX23C1010PC-12	120	40	100	32 Pin DIP
MX23C1010PC-15	150	40	100	32 Pin DIP
MX23C1000MC-12	120	40	100	28 Pin SOP
MX23C1000MC-15	150	40	100	28 Pin SOP
MX23C1010MC-12	120	40	100	32 Pin SOP
MX23C1010MC-15	150	40	100	32 Pin SOP
MX23C1000PC-20	200	40	100	28 Pin DIP
MX23C1010PC-20	200	40	100	32 Pin DIP
MX23C1000MC-20	200	40	100	28 Pin SOP
MX23C1010MC-20	200	40	100	32 Pin SOP
MX23C1010QC-12	120	40	100	32 Pin PLCC
MX23C1010QC-15	150	40	100	32 Pin PLCC
MX23C1010QC-20	200	40	100	32 Pin PLCC
MX23C1010TC-12	120	40	100	32 Pin TSOP
MX23C1010TC-15	150	40	100	32 Pin TSOP
MX23C1010TC-20	200	40	100	32 Pin TSOP

Note. Revision History

Revision #	Description
3.5	Add 32 pin TSOP package