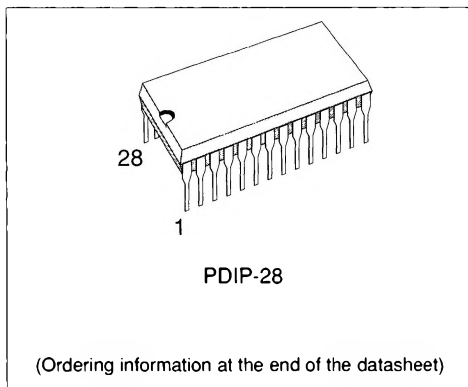


1024K (128K x 8) CMOS ROM

- **VERY FAST ACCESS TIME : 100 ns**
(Chip select or address access time)
- **LOW POWER "CMOS" CONSUMPTION :**
 - Operating current 40 mA Max.
 - Stand by current 20 μ A Max.
- **SINGLE +5V $\pm$ 10% POWER SUPPLY.**
- **STATIC OPERATION.**
- **INPUTS AND OUTPUTS TTL COMPATIBLE.**
- **THREE STATE OUTPUTS.**
- **MASK PROGRAMMABLE ACTIVE LOW/HIGH $\overline{\text{CE}}$.**
- **AUTOMATIC POWER DOWN.**



DESCRIPTION

The M23C1000 is a 1,048,576 bit, CMOS Masked Read Only Memory (ROM), organized as 131,072 x 8 bits. It is manufactured in 1.2 micron CMOS technology : Very fast access time of 100 ns makes it ideal for EPROM replacement on high performance, high volume running applications. Chip select line (CE) is active low or active high by mask programming, as per user's choice. When not active, it brings the device into standby mode, suitable for battery operated systems.

After cycle completion and 50 ns without input change, the M23C1000 automatically goes in power-down mode ($I_{CC} = 1$ mA), the data remaining latched on the output.

PIN FUNCTIONS

A0-A16	ADDRESS INPUTS
O0-O7	DATA OUTPUTS
CE / $\overline{\text{CE}}$	CHIP ENABLE INPUT
V _{CC}	+5V POWER SUPPLY
GND	GROUND

Figure 1 : Pin Connection

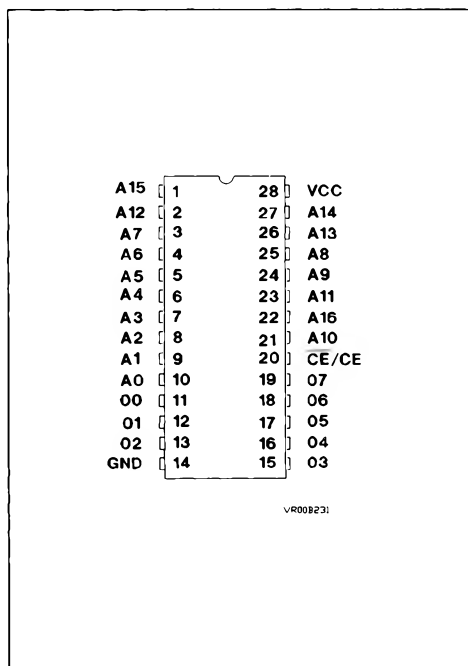
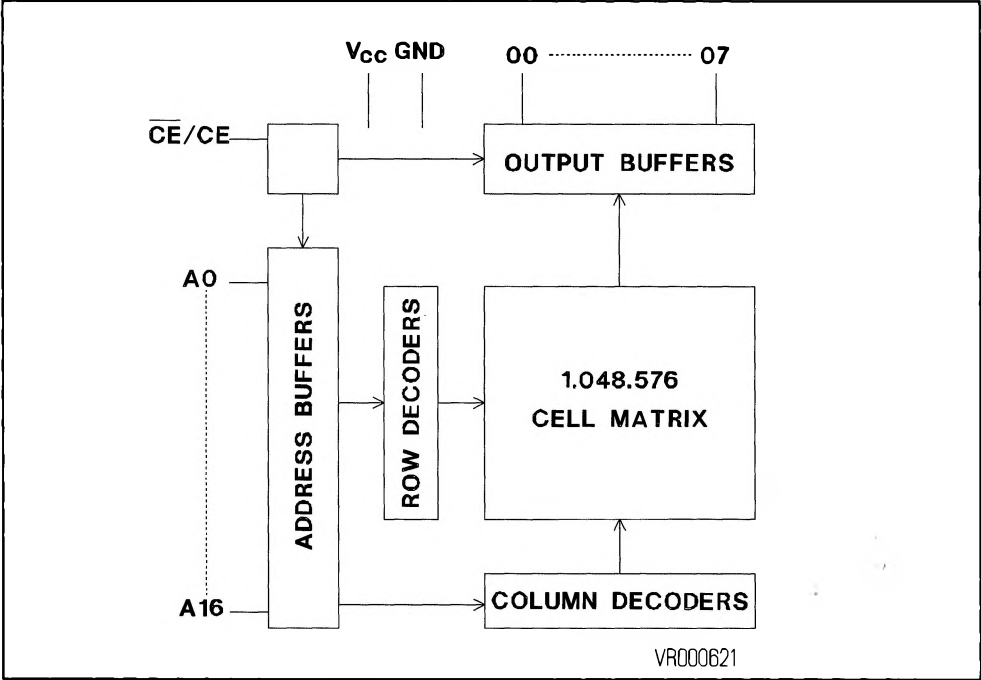


Figure 2 : Block Diagram



ABSOLUTE MAXIMUM RATINGS

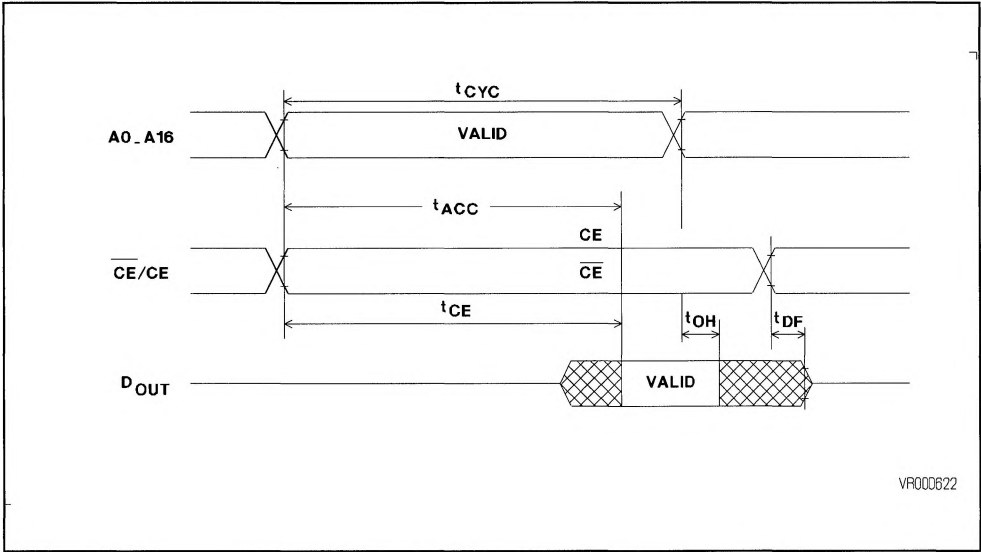
Symbol	Parameter	Value	Unit
V _{CC}	Supply voltage with respect to Ground	-0.5 to + 7.0	V
V _i	Input or Output voltage with respect to Ground	-0.5 to + 7.0	V
T _{amb}	Operating temperature range	0 to + 70	°C
T _{bias}	Temperature range under bias	0 to + 125	°C
T _{stg}	Storage temperature	-65 to + 150	°C

NOTE : Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation to these or any other conditions beyond those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rated conditions for extended periods of time may affect device reliability.

AC TEST CONDITION

Input Rise and Fall times : ≤ 10 ns Timing measurement Reference Levels :
Input Levels : 0.45V and 2.4V Inputs : 0.8V and 2.0V - Outputs : 0.8V and 2.0V

Figure 3 : Timing Waveforms



OPERATION MODES

MODE	CE	or (CE)	OUTPUTS
READ	L	(H)	DOUT
STANDBY / OUTPUT DISABLE	H	(L)	HIGH Z

DC CHARACTERISTICS

T_{AMB} = 0°C to 70°C V_{CC} = 5V ± 10%

Symbol	Parameter	Test Condition	Values		Unit
			Min	Max	
I _{LI}	Input Leakage current	V _{IN} = 0 V to V _{CC}	-10	10	μA
I _{LO}	Output Leakage current	V _{IN} = 0 V to V _{CC}	-10	10	μA
I _{CC1}	V _{CC} Active Current	CE = OE = V _{IL} , I _{OUT} = 0 mA (f = 10 MHz)		40	mA
I _{CC1}	V _{CC} Active Current	CE = OE = V _{IL} , I _{OUT} = 0 mA (f = 5 MHz)		20	mA
I _{CC2}	V _{CC} Standby Current - TTL	CE = V _{IH}		1	mA
I _{CC3}	V _{CC} Standby Current - CMOS	CE > V _{CC} - 0.2 V		20	μA
V _{IL}	Input Low Voltage		-0.5	0.8	V
V _{IH}	Input High voltage		2.0	V _{CC} + 1.0	V
V _{OL}	Output Low voltage	I _{OL} = 3.2 mA		0.4	V
V _{OH}	Output High Voltage	I _{OH} = -400 μA	2.4		V

AC CHARACTERISTICS

Symbol	Parameter	Test Condition	Values		Unit
			Min	Max	
T _{CYC}	Cycle Time			100	ns
T _{ACC}	Address Access Time	CE = V _{IL}		100	ns
T _{CE}	Chip Enable Access Time	CE = V _{IL}		100	ns
T _{DF} (1)	CE High to Output float			30	ns
T _{DH}	Output Hold		10		ns

CAPACITANCE ⁽¹⁾

T_{AMB} = 25°C f = 1 MHz

Symbol	Parameter	Test Condition	Max.	Unit
C _{IN}	Input Capacitance	V _{IN} = 0 V		5 pF
C _{OUT}	Output Capacitance	V _{OUT} = 0 V		5 pF

NOTE : (1) This parameter is only sampled and not 100 % tested

ORDERING INFORMATION

Part Number	Access Time	Supply Voltage	Temp.Range	Package
M23C1000B1	100 ns	5 V ± 10%	0 to +70°C	PDIP28

PACKAGE MECHANICAL DATA

Figure 4 : 28-PIN - PLASTIC DIP

