

General Description

The GM23C8000 high performance read only memory is organized as 1,048,576 × 8 bits and has an access time of 120/150ns. The GM23C8000 offers automatic power down controlled by the mask programmed CE or \overline{CE} input. The low power feature allow the battery operation. An additional feature of GM23C8000 is the Output Enable, OE functions (may be mask programmed as OE/ \overline{OE}) in order to eliminate bus contention in multiple bus micro processor systems. This ROM is packaged 32 Pin DIP or 32 Pin SOP.

Features

- 1,048,576 × 8 bit organization
- Single +5V Supply
- Access time: 200ns (Max)
- Fully static operation
- Completely TTL compatible inputs and outputs
- Current: Operating: 50mA (Max)
Standby : 50 μ A (Max)
- Automatic power down (\overline{CE})
- 3-state outputs for wired-OR expansion
- EPROMs acceted as program data input
- Polarity programmable chip enable and output enable pin
- Package:
GM23C8000: 32 Pin Plastic DIP (600 mil)
GM23C8000FW: 32 Pin Plastic SOP (525 mil)

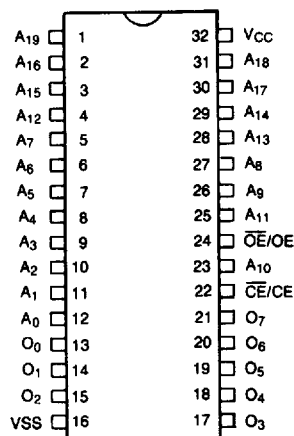
Pin Description

Pin	Function
A0 ~ A19	Address Input
O0 ~ O7	Data Output
CE/ \overline{CE} *	Chip Enable Input
OE/ \overline{OE} *	Output Enable Input
V _{CC}	Power Supply
V _{SS}	Ground
NC	No Connection

*User Selectable Polarity

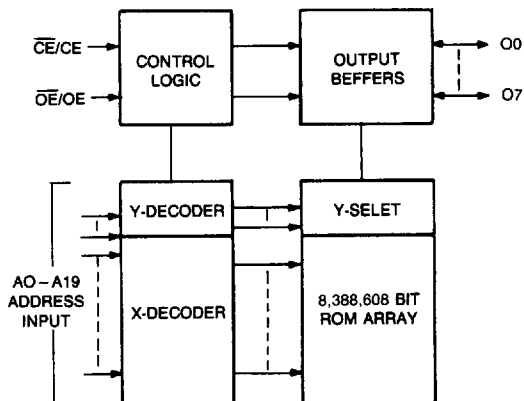
Pin Configuration

32 DIP/SOP



(Top View)

Block Diagram



Absolute Maximum Ratings*

Symbol	Parameter	Rating	Unit
T _A	Ambient Operating Temperature	-10 ~ 80	°C
T _{STG}	Storage Temperature	-65 ~ 150	°C
V _{CC}	Supply Voltage to Ground Potential	-0.5 ~ 7.0	V
V _{OUT}	Output Voltage	-0.5 ~ V _{CC} + 0.5	V
V _{IN}	Input Voltage	-0.5 ~ V _{CC} + 0.5	V

***Comments**

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

Recommended DC Operating Condition (V_{CC} = 5.0V ± 10%, T_A = 0 ~ 70°C)

Symbol	Parameter	Min	Typ	Max	Unit
V _{CC}	Supply Voltage	4.5	5.0	5.5	V
V _{SS}	Supply Voltage	0	0	0	V
V _{IH}	Input High Voltage	2.2	—	V _{CC} + 0.3	V
V _{IL}	Input Low Voltage	-0.5	—	0.8	V

DC Electrical Characteristics (V_{CC} = 5.0V ± 10%, T_A = 0 ~ 70°C)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{OH}	Output High Voltage	I _{OH} = -1mA	2.4			V
V _{OL}	Output Low Voltage	I _{OL} = 3.2mA			0.4	V
I _{I(L)}	Input Leakage Current	V _{IN} = 0V to V _{CC}			±10	μA
I _{O(L)}	Output Leakage Current	V _{OUT} = 0V to V _{CC}			±10	μA
I _{CC}	Operating Supply Current (f = 6.7MHz)	$\overline{CE} = V_{IL}$, CE = V _{IH}			40	mA
I _{SB1}	Standby Current (TTL)	$\overline{CE} = V_{IH}$, all Output Open			1	mA
I _{SB2}	Standby Current (CMOS)	$\overline{CE} = V_{CC}$, all Output Open			50	μA

Capacitance (T_A = 25°C, f = 1.0 MHz)

Symbol	Parameter	Condition	Min	Max	Unit
C _I	Input Capacitance	V _{IN} = 0V		10	pF
C _O	Output Capacitance	V _{OUT} = 0V		10	pF

Mode Selection

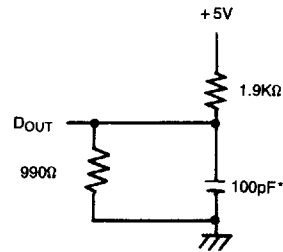
CE/ $\overline{\text{CE}}$	OE/ $\overline{\text{OE}}$	Mode	Data	Power
L/H	X	Standby	High Z	Standby
H/L	L/H	Operating	High Z	Active
	H/L		Data Output	

AC Operating Characteristics ($V_{CC}=5.0 \pm 10\%$, $T_A=0 \sim 70^\circ\text{C}$)

Symbol	Parameter	GM23C8000-20		Unit
		Min	Max	
t_{RC}	Read Cycle Time	200		ns
t_{ACE}	Chip Enable Access Time		200	ns
t_{AA}	Address Access Time		200	ns
t_{AOE}	Output Enable Access Time		80	ns
t_{OH}	Output Hold From Address Change	10		ns
t_{OHZ} t_{CHZ}	Output or Chip Disable to Output High-Z		70	ns
t_{OLZ} t_{CLZ}	Output or Chip Enable to Output Low-Z	10		ns

AC Test Condition

Input Pulse Level	0.4V to 2.4V
Input Rise and Fall Time	10ns
Input and Output Timing Level	0.8V to 2.0V
Output Load	See Fig. 1

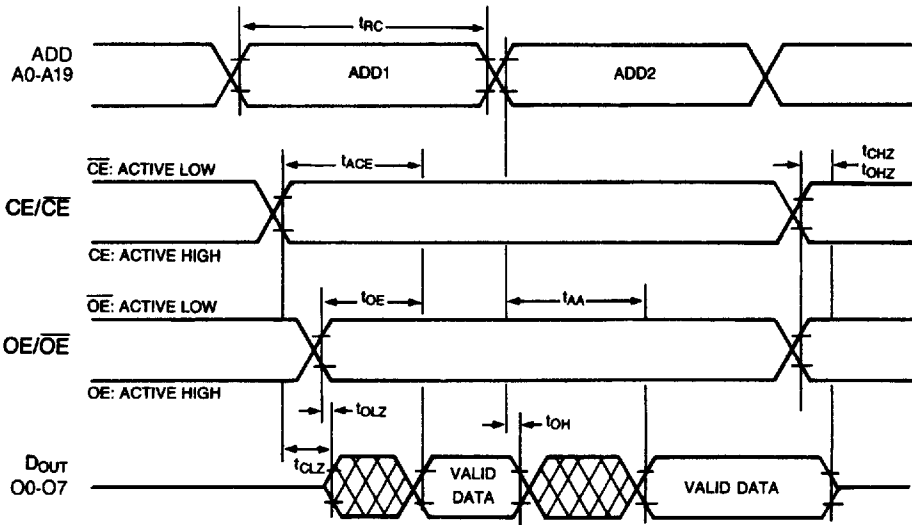


* Including scope and jig.

Fig. 1 Output Load Circuit

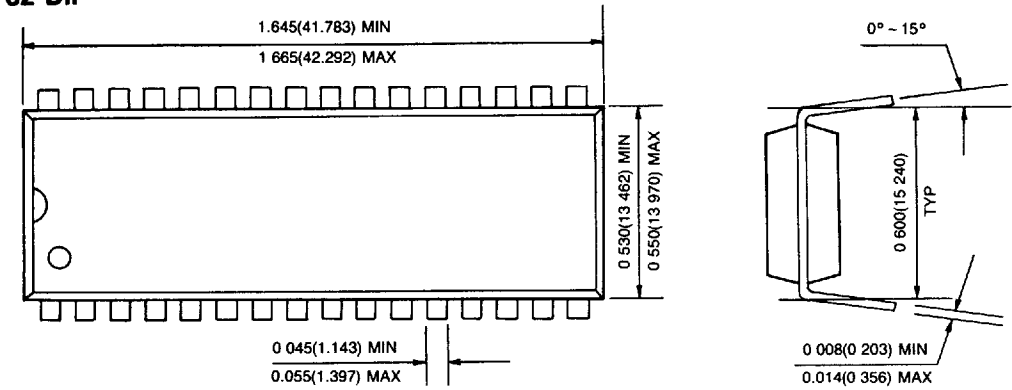
TIMING WAVEFORMS

Read



Package Dimensions

32 DIP



32 SOP

