

## Description

The AC23V8000 high performance read only memory is organized 1,048,576 x 8 bit (byte mode) and has an access time of 70/100/120ns. The low power feature allows the battery operation. The large size of 8M bit memory density is ideal for character generator, data or program memory in micro-processor application. The AC23V8000 is provided as die form in waffle pack tray.

## Key features

- 1,048,576 X 8bit organization
- Single 3.3V power supply operation
- Access Time : 70/100/120ns (Max)
- Standby Current : 50 $\mu$ A (Max)
- Operating Current : 35mA (Max)
- TTL compatible inputs and outputs
- 3-State outputs for wired-OR expansion
- Programmable CE or OE pin
- Fully static operation
- Package  
AC23V8000 : Die in waffle pack tray

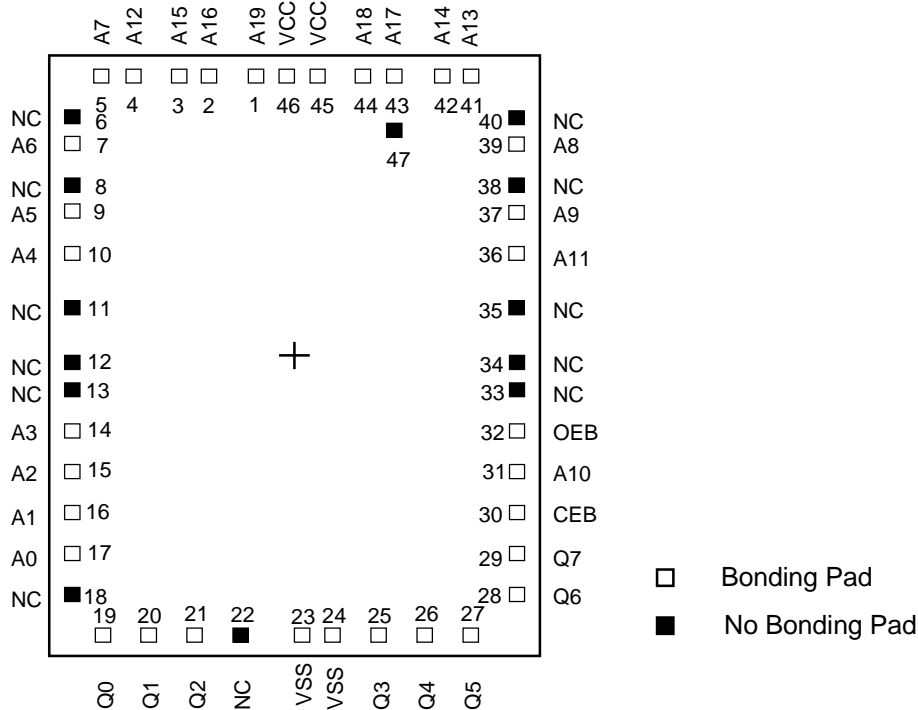
## Pin Description

Pin	Function
A0~A19	Address inputs
Q0~Q7	Data Outputs
CEB*	Chip Enable input
OEB*	Output Enable input
VCC	Power supply
VSS	Ground

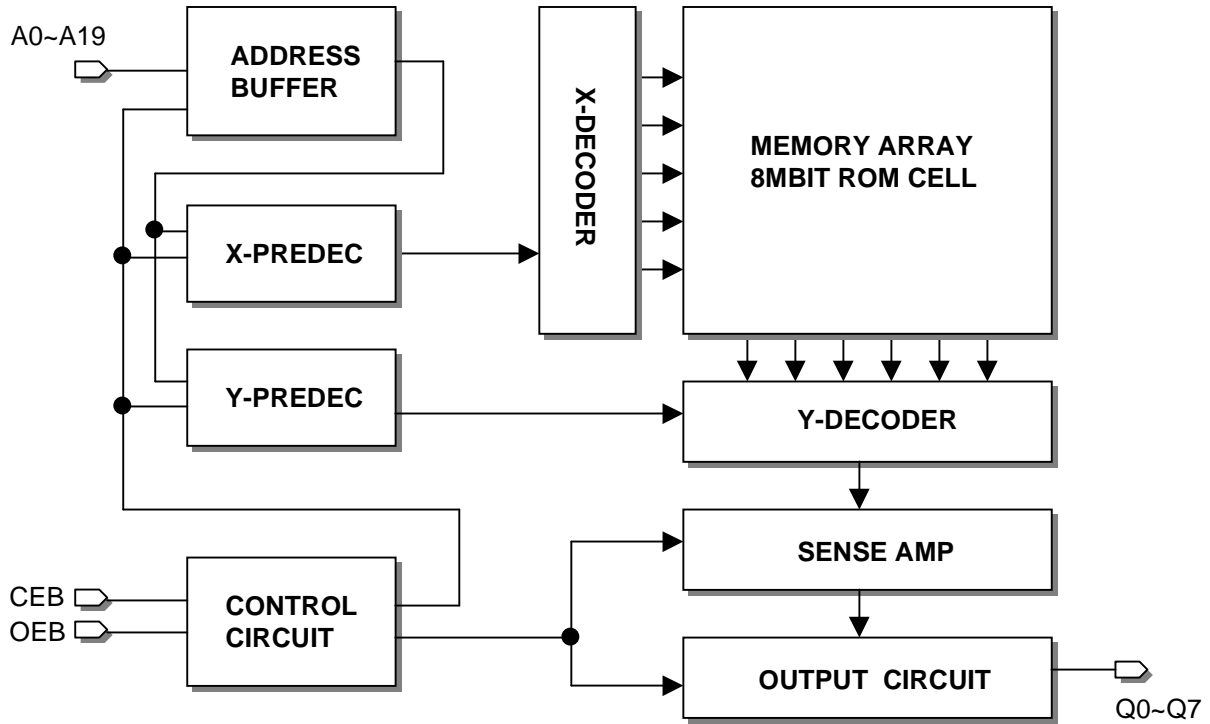
\* User selectable polarity

- CEB : CE/CEB
- OEB : OE/OEB

## Pin Configuration



Block Diagram



### □ Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
TA	Ambient Operating Temperature	-10 ~ 80	°C
TSTG	Storage Temperature	-55 ~ 150	°C
VCC	Supply Voltage to Ground Potential	-0.3 ~ 4.5	V
VOUT	Output Voltage	-0.3~Vcc+0.3	V
VIN	Input Voltage	-0.3~Vcc+0.3	V

Stress above those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only. 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 Conditions(VCC=3.3±0.3V, TA=0~70°C)

Symbol	Parameter	Min	Typ	Max	Unit
Vcc	Supply Voltage	3.0	3.3	3.6	V
Vss	Supply Voltage	0	0	0	V
VIH	Input High Voltage	2.2		Vcc+0.3	V
VIL	Input Low Voltage	-0.3		0.8	V

### □ DC Electrical Characteristics(VCC=3.3±0.3V, TA=0~70 °C)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
VOH	Output High Voltage	IOH=-0.4mA	2.4			V
VOL	Output Low Voltage	IOL=2.1mA			0.4	V
IIL	Input Leakage Current	VIN=0V to VCC			±10	uA
IOL	Output Leakage Current	VOUT=0V to VCC			±10	uA
ICC	Operating Supply Current (tRC=100ns)	CEB=OEB=VIL All Output Open			35	mA
ISB1	Standby Current(TTL)	CEB=VIH, all Output Open			500	uA
ISB2	Standby Current(CMOS)	CEB=VCC, all Output Open			50	uA

### Capacitance( $T_A=25^\circ\text{C}$ , $f=1.0\text{MHz}$ )

Symbol	Parameter	Condition	Min	Max	Unit
C <sub>I</sub>	Input Capacitance	V <sub>IN</sub> = 0V		10	pF
C <sub>O</sub>	Output Capacitance	V <sub>OUT</sub> = 0V		10	pF

Capacitance is periodically sampled and not 100% tested

### Function Table

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

### AC Characteristics( $V_{CC}=3.3\pm 0.3\text{V}$ , $T_A=0\sim 70^\circ\text{C}$ )

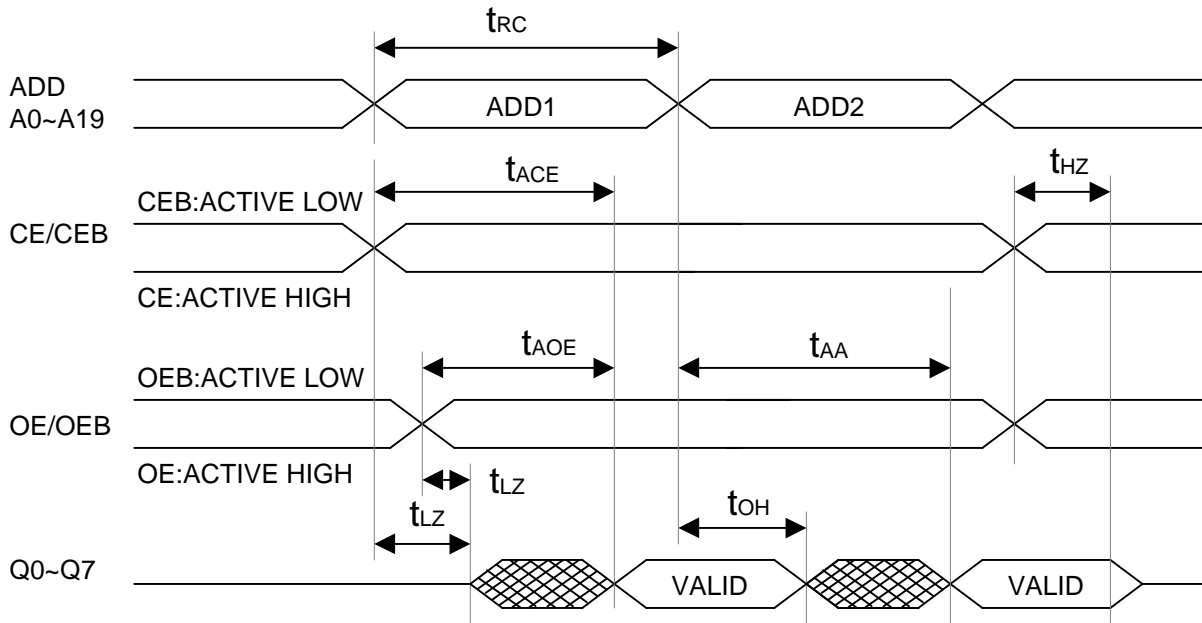
Symbol	Parameter	70ns		100ns		120ns		Unit
		Min	Max	Min	Max	Min	Max	
t <sub>RC</sub>	Read cycle time	70		100		120		ns
t <sub>ACE</sub>	Chip enable access time		70		100		120	ns
t <sub>AA</sub>	Address access time		70		100		120	ns
t <sub>AOE</sub>	Output enable access time		35		50		60	ns
t <sub>OH</sub>	Output hold time from address change	0		0		0		ns
t <sub>HZ</sub>	Output or chip disable to output High-Z		20		20		20	ns
t <sub>LZ</sub>	Output or chip Enable to output Low-Z	10		10		10		ns

### AC Test Condition

- Input pulse level 0.4V to 2.4V
- Input rise and fall time 10ns
- Input and output timing level 1.5V
- Output load 1 TTL gate and CL=100pF(70ns product CL=30pF)

□ Timing Waveforms

READ MODE



**Revision History**

Rev No.	Date	Contents
rev0	10-Mar-2001	
rev1	09-Jan-2002	Package dimension modified
rev2	16-June-2003	Package exempted and pad diagram added