

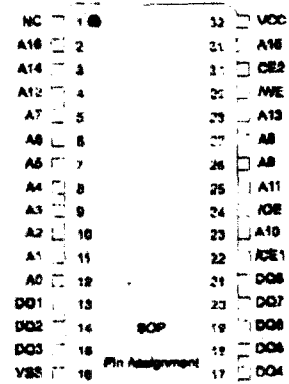
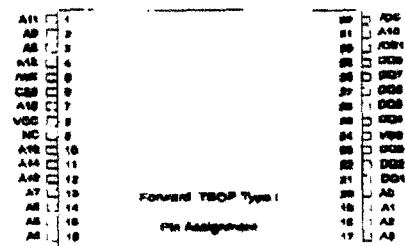
128K x 8 Bit CMOS SRAM

FEATURES

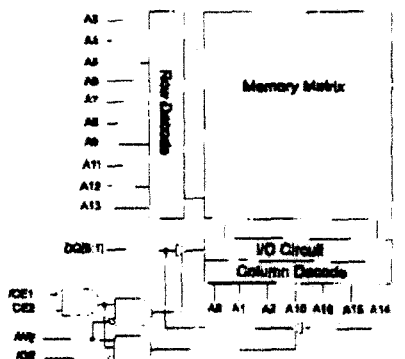
- Access Times
35ns, 70ns
- Ultra low DC Current
TTL Standby: 6mA (Max)
CMOS Standby: 80 uA (Max)
- Single 5V \pm 10% Power Supply
- Industry Standard Pin Assignment
- Package Options
450 mil 32 pin SOP
32 pin Forward TSOP Type I (8x20mm)

DESCRIPTION

The EK621024M from Eureka is a one-megabit density static random access memory organized as 131,072 words by 8 bits. The device is offered in 450 mil SOP for surface mount applications. For low profile memory applications, TSOP is offered in assignments. The pin assignment complies with the JEDEC standard pin assignment. The device is fabricated using high performance CMOS technology.



BLOCK DIAGRAM



PIN ASSIGNMENT

Symbol	Description
A0-A16	Address Inputs
DQ1-DQ8	Data Inputs/Outputs
/CE1, CE2	Chip Enables
/WE	Write Enable
/OE	Output Enable
NC	No Connect
Vcc	Power Supply
Vss	Ground



Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Power Supply Voltage	V _{CC}	-0.5 to 7.0	V
Input Voltage	V _{IN}	-0.5 to V _{CC} +0.5	V
Output Voltage	V _{OUT}	-0.5 to V _{CC} +0.5	V
Operating Temperature	T _{OPR}	0 to +70	°C
Storage Temperature	T _{STG}	-55 to +150	°C

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 periods may affect reliability.

Truth Table

/CE1	CE2	/OE	/WE	Mode	DQ Pin	Supply Current
H	X	X	X	Not Selected	High - Z	I _{SB} , I _{SB1}
X	L	X	X	Not Selected	High - Z	I _{SB} , I _{SB1}
L	H	H	H	Output Disabled	High - Z	I _{CCA}
L	H	L	H	Read	Data Out	I _{CCA}
L	H	X	L	Write	Data In	I _{CCA}

Electrical Characteristics and DC Operating Conditions

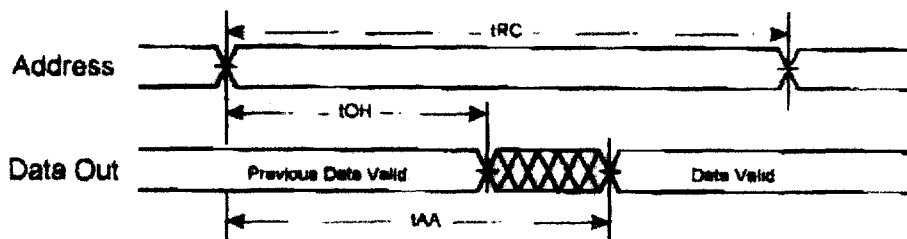
(TA = 0°C to +70°C, V_{CC} = +5V ± 10% unless otherwise noted; Note 1)

Description	Symbol	Conditions	Min	Max	Units
Power Supply Voltage	V _{CC}		4.5	5.5	V
Input Low Voltage	V _{IL}		-0.5	0.8	V
Input High Voltage	V _{IH}		2.2	V _{CC} +0.5	V
Input Leakage Current	I _{LI}	V _{IN} = V _{SS} to V _{CC}	-5	5	µA
Output Leakage Current	I _{LO}	V _{IN} =V _{SS} to V _{CC} ; /CE1=V _{IH} or CE2 = V _{IL} or /OE=V _{IH} or /WE=V _{IL}	-5	5	µA
Output Low Voltage	V _{OL}	I _{OL} = 2.1mA	-	0.4	V
Output High Voltage	V _{OH}	I _{OHI} = -1.0mA	2.4	-	V
Power Supply Operating Current	I _{CCA}	/CE1 = V _{IL} , CE2 = V _{IH} , DQ=0mA, f=max	-	90	mA
Power Supply Standby Current	I _{SB}	/CE1 = V _{IH} or CE2 = V _{IL} ; f=max	-	5	µA
CMOS Standby	I _{SB1}	/CE1 ≥ V _{CC} -0.2V or CE2 ≤ V _{SS} +0.2V, f=0 MHz	-	80	µA

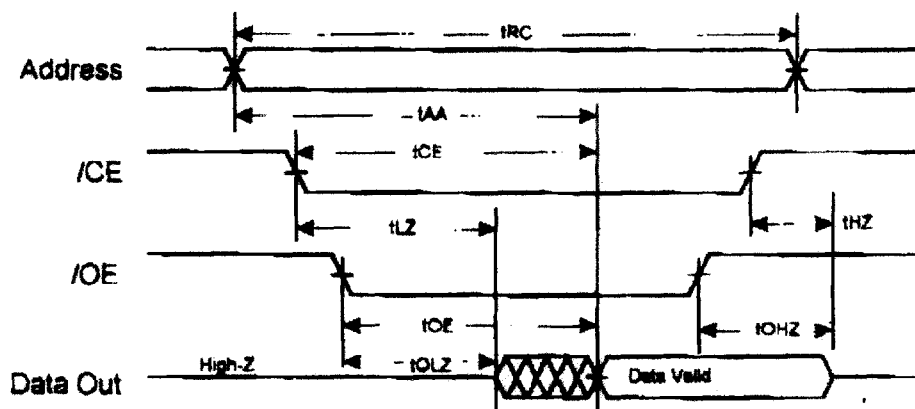
Capacitance

Parameter	Symbol	Max	Units
Input Capacitance	C _{IN}	6	pF
Input/Output Capacitance	C _{I/O}	8	pF

Read Timing (Address Access)



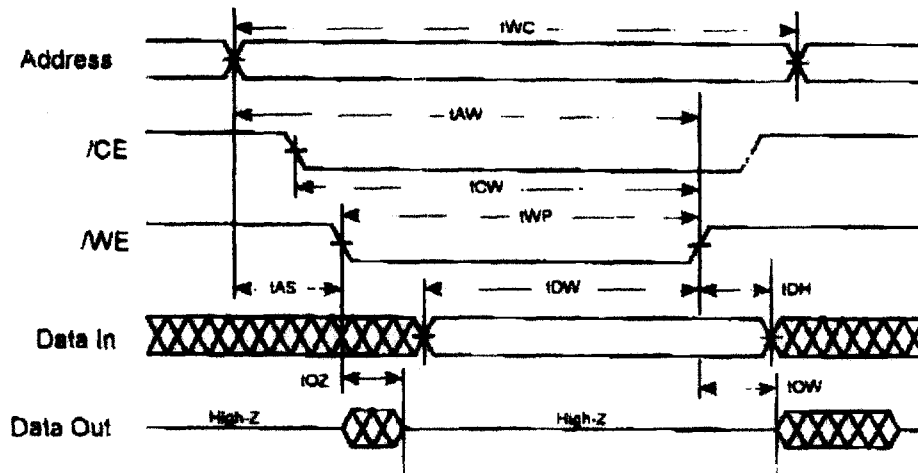
Read Timing (Chip Enable Access)



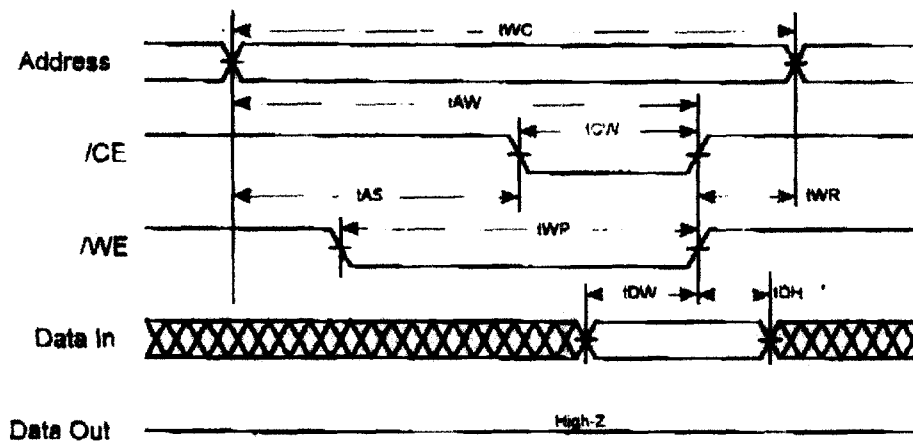
Read Cycle

DESCRIPTION	Symbol	-35		-70		Units	Notes
		Min	Max	Min	Max		
Read Cycle Time	tRC	35	-	70	-	ns	2.3,6
Address Access Time	tAA	-	35	-	70	ns	2.3
Chip Enable Access Time	tCE	-	35	-	70	ns	2.3
Output Enable Access Time	tOE	-	10	-	35	ns	
Output Hold from Address Change	tOH	3	-	3	-	ns	
Chip Enable Active to Low-Z	tLZ	5	-	5	-	ns	2.3
Output Enable to Low-Z	tOLZ	5	-	5	-	ns	2.3
Chip Disable to High-Z	tHZ	0	10	0	25	ns	2.3,5
Output Disable to High-Z	tOHZ	0	10	0	25	ns	2.3,5

Write Cycle (/WE Controlled)



Write Cycle (/CE Controlled)



Write Cycle

DESCRIPTION	Symbol	-35		-70		Units	Notes
		Min	Max	Min	Max		
Write Cycle Time	t _{WC}	35	-	70	-	ns	2.4,6
Address Setup Time	t _{AS}	0	-	0	-	ns	2.4
Address Valid to End of Write	t _{AW}	20	-	60	-	ns	2.4
Write Pulse Width	t _{WP}	25	-	50	-	ns	2.4
Chip Enable to End of Write	t _{CW}	25	-	60	-	ns	2.4
Data Valid to End of Write	t _{DW}	20	-	30	-	ns	2.4
Data Hold from End of Write	t _{DH}	0	-	0	-	ns	2.4
Write Low to Output High-Z	t _{OZ}	0	10	0	25	ns	2.4,5
Write High to Output Low-Z	t _{OW}	3	-	5	-	ns	2.4
Write Recovery Time	t _{WR}	0	-	0	-	ns	2.4

AC Test Conditions

(T_A = 0 to +70°C, V_{CC} = 5V ± 10%)

Parameter	Symbol	Conditions	Units
Input Pulse High Level	V _{IH}	3	V
Input Pulse Low Level	V _{IL}	0	V
Input Rise Time	T _R	5.0	ns
Input Fall Time	T _F	5.0	ns
Input and Output Timing Reference Level		1.5	V

AC Test Loads

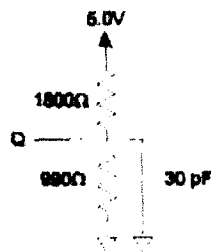


Figure 1A - AC Test Load

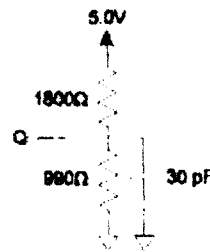


Figure 1B - Hi-Z Test Load

Notes:

1. When /WE goes low, outputs are in a Hi-Z state and /OE is overridden.
2. /WE is high for a read cycle.
3. CE1 and CE2 are represented by /CE in this data sheet. CE2 is of the opposite polarity of /CE in the timing diagrams.
4. A write occurs during the overlap of /CE and /WE.
5. Measured at ±500mV from steady state with the Hi-Z load.
6. Referenced from the last valid address to the first transitioning address pin.

Ordering Information

(Order by Complete Part Number)

