

## 23C16 STATIC READ ONLY MEMORY (2048x8)

### DESCRIPTION

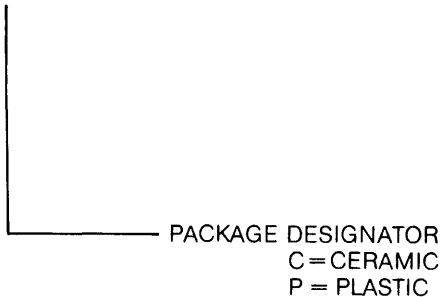
The 23C16 high performance read only memory is organized 2048 words by 8 bits with access times of less than 450 ns. This ROM is designed to be compatible with all microprocessor and similar applications where high performance, large bit storage and simple interfacing are important design considerations.

The 23C16 operates totally asynchronously. No clock input is required. The three programmable chip select inputs allow eight 16K ROMs to be OR-tied without external decoding.

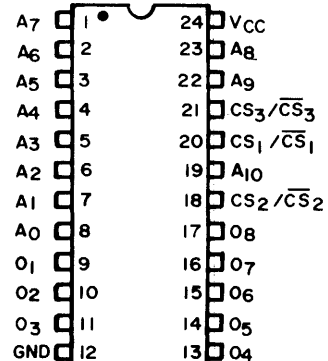
Designed to replace two 2708 8K EPROMs, the 23C16 can eliminate the need to redesign printed circuit boards for volume mask programmed ROMs after prototyping with EPROMs.

- 400mV Noise Immunity on Inputs
- 2048 x 8 Bit Organization
- Single +5 Volt Supply
- Access Time — 450 ns
- Totally Static Operation
- TTL Compatible
- Three-State Outputs for Wire-OR Expansion
- Three Programmable Chip Selects
- Pin Compatible with 2716 EPROM
- Replacement for two 2708s
- 2708/2716 EPROMs Accepted as Program Data Inputs

### MXS-23C16



### 23C16



**ABSOLUTE MAXIMUM RATINGS**

Ambient Temperature under Bias	°C to +70°C
Storage Temperature	-65°C to +150°C
Supply Voltage to Ground Potential	-0.5V to +7.0V
Applied Output Voltage	-0.5V to +7.0V
Applied Input Voltage	-0.5V to +7.0V
Power Dissipation	1.0W

**COMMENT**

Stresses above 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.

**D. C. CHARACTERISTICS** ( $T_A = 0^\circ\text{C}$  to  $+70^\circ\text{C}$ ,  $V_{CC} = 5.0\text{V} \pm 5\%$ , unless otherwise specified)

Symbol	Parameter	Min.	Max.	Units	Test Conditions
I <sub>CC</sub>	Power Supply Current		10	mA	F = 1 MHz
I <sub>CCS</sub>	Stand-by Power Supply Current		10	μA	Chip Deselected
I <sub>O</sub>	Output Leakage Current		10	μA	Chip Deselected
I <sub>I</sub>	Input Load Current		10	μA	$V_{CC} = \text{Max. Gnd} \leq V_{IN} \leq V_{CC}$
V <sub>OL</sub>	Output Low Voltage		0.4	Volts	$V_{CC} = \text{Min. } I_{OL} = 2.1\text{mA}$
V <sub>OH</sub>	Output High Voltage	2.4		Volts	$V_{CC} = \text{Min. } I_{OH} = -400\mu\text{A}$
V <sub>IL</sub>	Input Low Voltage	-0.5	0.8	Volts	See Note 1
V <sub>IH</sub>	Input High Voltage	2.0	$V_{CC}+1$	Volts	

**A. C. CHARACTERISTICS** ( $T_A = 0^\circ\text{C}$  to  $+70^\circ\text{C}$ ,  $V_{CC} = 5.0\text{V} \pm 5\%$ , unless otherwise specified)

Symbol	Parameter	Min.	Max.	Units	Test Conditions
t <sub>ACC</sub>	Address Access Time		450	ns	See Note 2
t <sub>CO</sub>	Chip Select Delay		200	ns	
t <sub>DF</sub>	Chip Deselect Delay		100	ns	
t <sub>OH</sub>	Previous Data Valid After Address Change Delay	40		ns	

**CAPACITANCE** ( $T_A = 25^\circ\text{C}$ ,  $f = 1.0\text{MHz}$ , See Note 3)

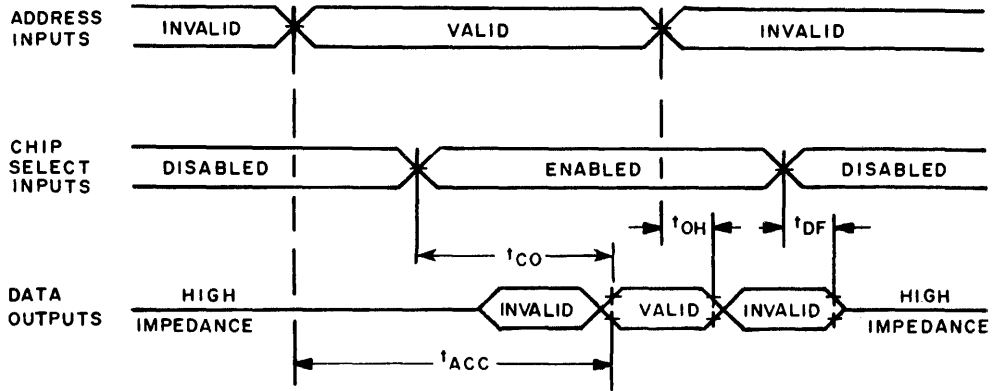
Symbol	Parameter	Min.	Max.	Units	Test Conditions
C <sub>IN</sub>	Input Capacitance		8	pF	All Pins except Pin under
C <sub>OUT</sub>	Output Capacitance		10	pF	Test Tied to AC Ground

Note 1: Input levels that swing more negative than -0.5V will be clamped and may cause damage to the device.

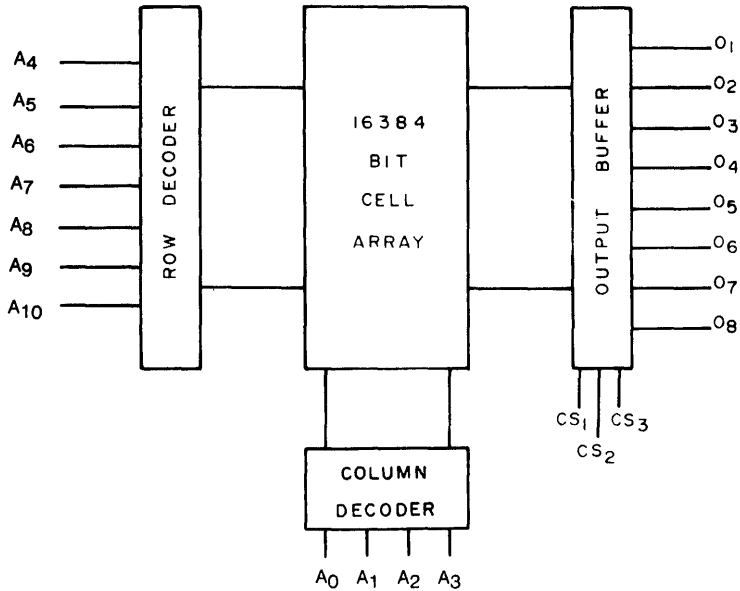
Note 2: Loading 1 TTL + 100 pF, input transition time: 20 ns  
Timing measurement levels: input 1.5V, output 0.8V and 2.0V.

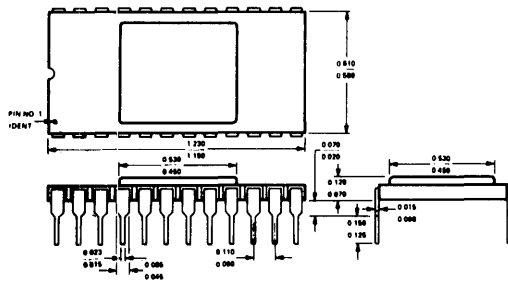
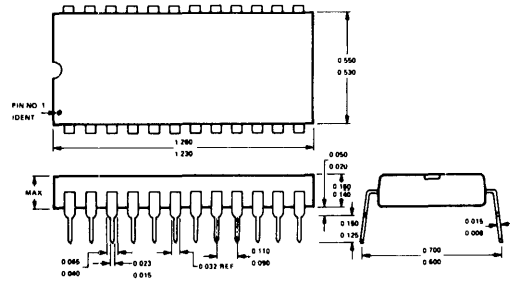
Note 3: This parameter is periodically sampled and is not 100% tested.



**TIMING DIAGRAMS**


ROMS

**BLOCK DIAGRAM**


**PACKAGING DIAGRAM**
**CERAMIC PACKAGE**

**MOLDED PACKAGE**


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