commodore semiconductor group

NMOS

MPS

2316

STATIC READ ONLY MEMORY (2048x8)

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DESCRIPTION

The 2316 high performance read only memory is organized 2048 words by 8 bits with access times of less than 350 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 2316 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 2316 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, 350 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

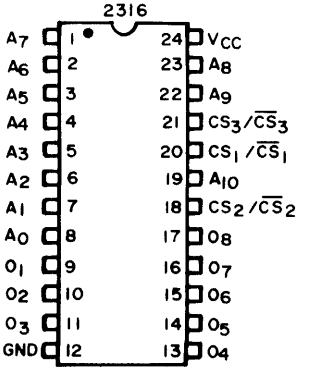
ORDERING INFORMATION

MXS 2316 ____

FREQUENCY RANGE
NO SUFFIX = 450ns
A = 350ns

PACKAGE DESIGNATOR
C = CERAMIC
P = PLASTIC

PIN CONFIGURATION



ROMS

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°C to +70°C, V_{CC} = 5.0V ± 5%, unless otherwise specified)

Symbol	Parameter	Min.	Max.	Units	Test Conditions
I_{CC1}	Power Supply Current		100	mA	$V_{IN} = V_{CC}, V_O$ = Open, T_A = 0°C
I_{CC2}	Power Supply Current		95	mA	$V_{IN} = V_{CC}, V_O$ = Open, T_A = 25°C
I_O	Output Leakage Current		10	μA	Chip Deselected, V_O = 0 to V_{CC}
I_I	Input Load Current		10	μA	V_{CC} = Max. V_{IN} = 0 to V_{CC}
V_{OL}	Output Low Voltage		0.4	Volts	V_{CC} = Min. I_{OL} = 2.1mA
V_{OH}	Output High Voltage	2.4		Volts	V_{CC} = Min. I_{OH} = −400μA
V_{IL}	Input Low Voltage	−0.5	0.8	Volts	See Note 1
V_{IH}	Input High Voltage	2.0	V_{CC}+1	Volts	

A. C. CHARACTERISTICS (T_A = 0°C to +70°C, V_{CC} = 5.0V ± 5%, unless otherwise specified)

		2316		2316A			
Symbol	Parameter	Min.	Max.	Min.	Max.	Units	Test Conditions
t_{ACC}	Address Access Time		450		350	ns	
t_{CO}	Chip Select Delay		200		200	ns	
t_{DF}	Chip Deselect Delay		175		175	ns	See Note 2
t_{OH}	Previous Data Valid After Address Change Delay	40		40		ns	

CAPACITANCE (T_A = 25°C, f = 1.0MHz, See Note 3)

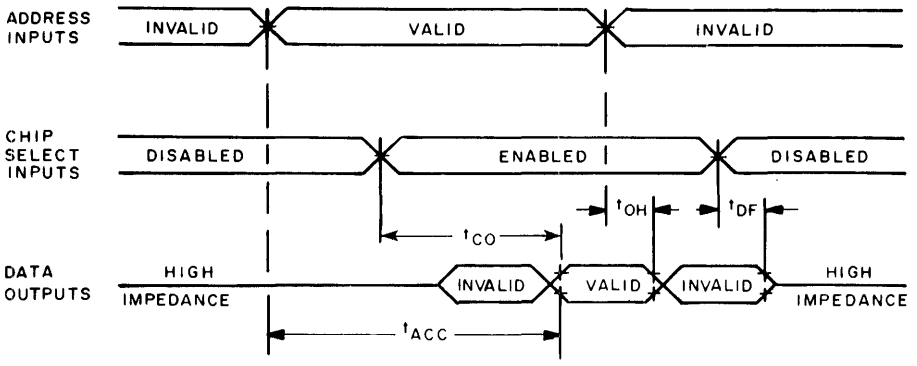
Symbol	Parameter	Min.	Max.	Units	Test Conditions
C_{IN}	Input Capacitance		8	pF	All Pins except Pin under
C_{OUT}	Output Capacitance		10	pF	Test Tied to AC Ground

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

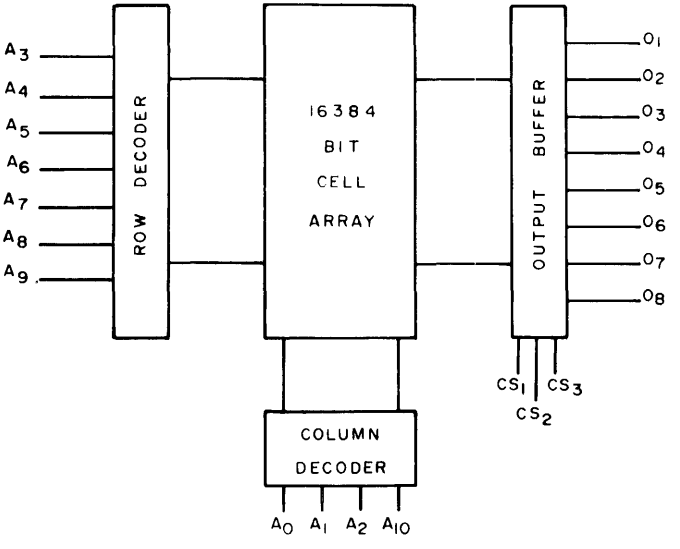
Note 2: Loading 1 TTL + 100 pF, input transition time: 20 ns
Timing measurement levels: input 1.5V, output 0.8V and 2.0V.

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

TIMING DIAGRAMS

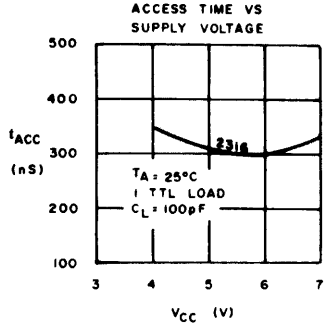


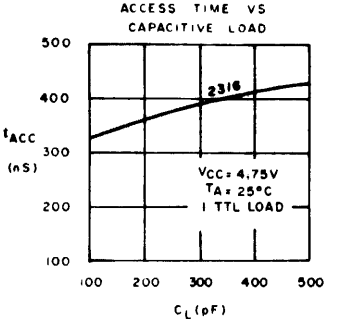
BLOCK DIAGRAM

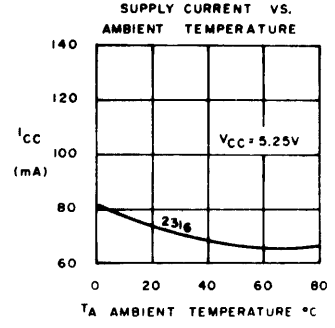


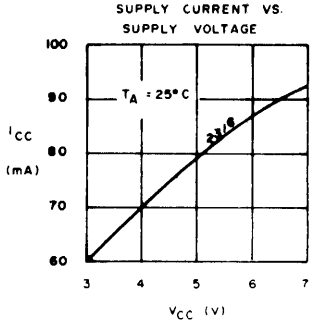
ROMs

TYPICAL CHARACTERISTICS





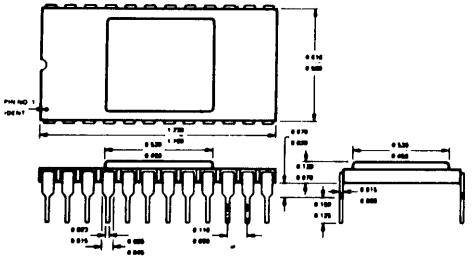




ROMS

PACKAGING DIAGRAM

CERAMIC PACKAGE



MOLDED PACKAGE