COMMODORE SEMICONDUCTOR GROUP
a division of Commodore Business Machines, Inc.
950 Rittenhouse Rd., Norristown, PA 19403 • Tel.: 215/666-7950 • TWX: 510/660-4168

HMOS

23128 STATIC READ ONLY MEMORY (16384x8)

DESCRIPTION

The 23128 high performance read only memory is organized 16384 words by 8 bits with a wide range of access times. 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. This device offers TTL input and output levels.

The 23128 operates totally asynchronously. No clock input is required. The programmable chip select inputs allow selection of 8 ROMS.

- 16384 x 8 Bit Organization
- Single +5 Volt Supply
- Access Time — 450ns, 300ns, 250ns
- Completely TTL Compatible
- Totally Static Operation
- Three-State Outputs for Wire-OR Expansion
- Three Programmable Chip Selects
- 2732/2764 EPROMS Accepted as Program Data Inputs
- 400mV Noise Immunity on Inputs

ORDERING INFORMATION

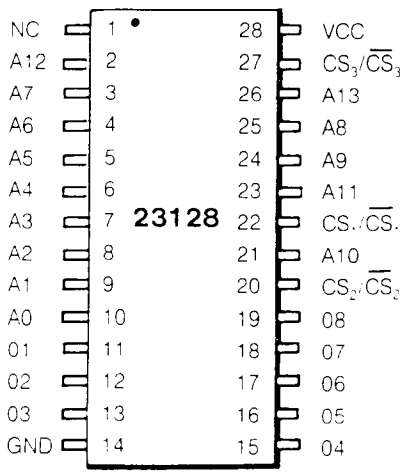
MXS 23128

FREQUENCY RANGE
NO SUFFIX = 450ns
A= 300ns
B =250ns
C =200ns (1)

PACKAGE DESIGNATOR
D = CERAMIC
P = PLASTIC

(1) = 200ns available in 1987

PIN CONFIGURATION



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)

Symbol	Parameter	23128		23128A		23128B		Units	Test Conditions
		Min.	Max.	Min.	Max.	Min.	Max.		
t_{ACC}	Address Access Time		450		300		250	ns	See Note 2
t_{CO}	Chip Select Delay		200		100		100	ns	
t_{DF}	Chip Deselect Delay		175		75		75	ns	
t_{OH}	Previous Data Valid After Address Change Delay	40		40		40		ns	

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

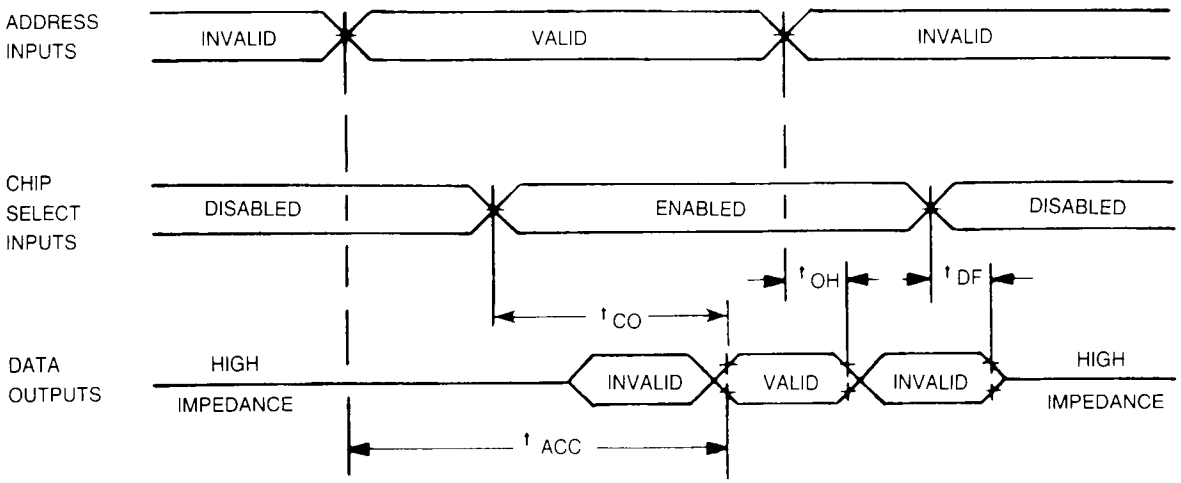
Symbol	Parameter	Min.	Max.	Units	Test Conditions
C_{IN}	Input Capacitance		8	pF	All Pins except Pin under
C_{OUT}	Output Capacitance		10	pF	Test Tied to AC Ground

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