

16,384 BIT (2048x8) STATIC NMOS ROM

Features

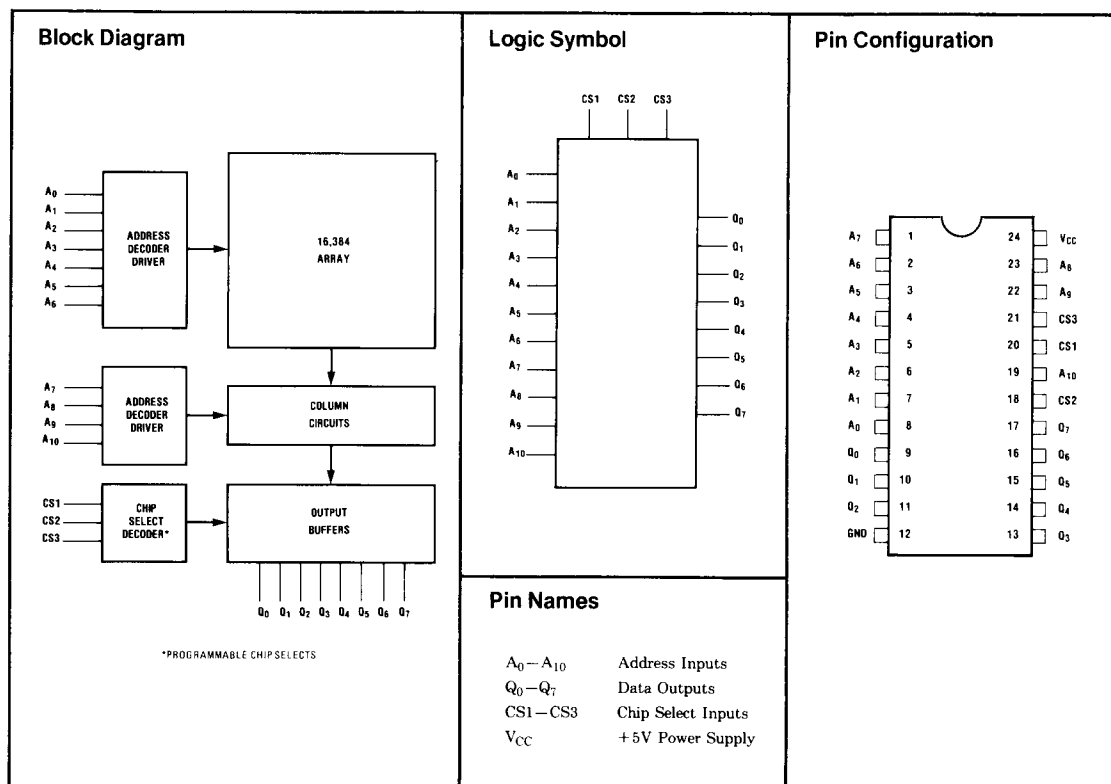
- ☐ Single +5V Power Supply
- ☐ Directly TTL Compatible Inputs
- ☐ Three-State TTL Compatible Outputs
- ☐ Three Programmable Enables
- ☐ Access Time: 450ns Maximum
- ☐ 2716 EPROM Pin Compatible
- ☐ Low Power: Supply Current is 80mA Maximum

General Description

The AMI S6831B is a 16,384 bit mask programmable Read-Only-Memory offering fully static operation with a single +5V power supply. The device is fully TTL compatible on all inputs and three-state outputs. The three enables are mask programmable, the active level is specified by the user.

The S6813B is pin compatible with the 2708 and 2716 EPROMs. Software developed in EPROMs can be put in low cost ROM for high volume production.

The device is organized as 2048 words by 8 bits, a configuration particularly suitable for microprocessors. The S6831B is manufactured with an N-channel silicon gate depletion load technology.



Absolute Maximum Ratings

Ambient Temperature Under Bias	−0°C to 70°C
Storage Temperature	−65°C to 150°C
Output or Supply Voltages	−0.5V to 7V
Input Voltages	−0.5V to 7V
Power Dissipation	1W

*COMMENT: Stresses above those listed under "Absolute Maximum Rating" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or at any other condition above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may effect device reliability.

D.C. Characteristics: $V_{CC} = +5V \pm 5\%$, $T_A = 0^\circ C$ to $70^\circ C$

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
V_{OL}	Output LOW Voltage			0.4	V	$I_{OL} = 3.2mA$
V_{OH}	Output HIGH Voltage	2.4			V	$I_{OH} = -220\mu A$
V_{IL}	Input LOW Voltage	−0.5		0.8	V	
V_{IH}	Input HIGH Voltage	2.0		V_{CC}	V	
I_{LI}	Input Leakage Current			10	μA	$V_{IN} = 0V$ to $5.25V$
I_{LO}	Output Leakage Current			10	μA	$V_O = 0.4V$ to $5.25V$ Chip Deselected
I_{CC}	Power Supply Current			70	mA	$V_{CC} = 5.25V$, $T_A = 0^\circ C$

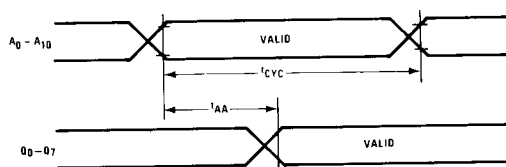
Capacitance: $T_A = 25^\circ C$, $f = 1.0MHz$

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
C_{IN}	Input Capacitance			7	pF	$V_{IN} = 0V$
C_{OUT}	Output Capacitance			10	pF	$V_{OUT} = 0V$

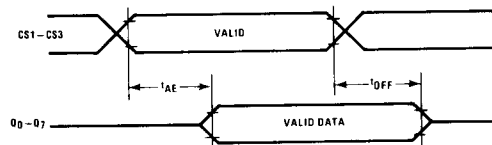
A.C. Characteristics: $V_{CC} = +5V \pm 5\%$, $T_A = 0^\circ C$ to $70^\circ C$

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
t_{CYC}	Read Cycle Time	450			ns	See Test Circuit and Waveforms
t_{AA}	Address Access Time			450	ns	
t_{AE}	Enable Access Time			200	ns	
t_{OFF}	Output Disable Time	10		150	ns	

Propagation Delay from Address Inputs



Propagation Delay From Chip Enable



A.C. Test Conditions

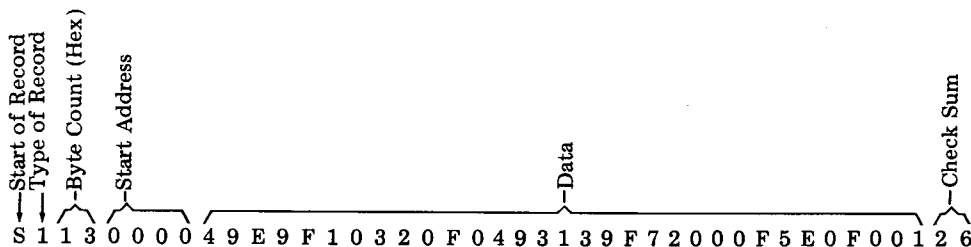
Input Pulse Levels	0.4V to 2.4V
Input Rise and Fall Times	≤20ns
Input Timing Level	1.5V
Output Timing Levels	0.8V and 2.0V
Output Load	1 TTL Gate and C _L = 100pF

Custom Programming

The preferred method of pattern submission is the AMI Hex format as described below, with its built-in address space mapping and error checking. This is the format produced by the AMI Assembler. The format is as follows and may be on paper tape, punched cards or other media readable by AMI.

Position	Description
1	Start of record (Letter S)
2	Type of record 0 — Header record (comments) 1 — Data record 9 — End of file record
3, 4	Byte Count Since each data byte is represented as two hex characters, the byte count must be multiplied by two to get the number of characters to the end of the record. (This includes checksum and address data.) Records may be of any length defined in each record by the byte count.
5, 6, 7, 8	Address Value The memory location where the first data byte of this record is to be stored. Addresses should be in ascending order.
9, ..., N	Data Each data byte is represented by two hex characters. Most significant character first.
N+1, N+2	Checksum The one's complement of the additive summation (without carry) of the data bytes, the address, and the byte count.

Example: S 1 1 3 0 0 0 0 4 9 E 9 F 1 0 3 2 0 F 0 4 9 3 1 3 9 F 7 2 0 0 0 F 5 E 0 F 0 0 1 2 6
 S 9 0 3 0 0 0 0 F C



NOTES:

- Only positive logic formats for E₀, E₁, E₂ are accepted. 1 = V_{HIGH}; 0 = V_{LOW}
- A "0" indicates the chip is enabled by a logic 0.
A "1" indicates the chip is enabled by a logic 1.
- Paper tape format is the same as the card format above except:
 - The record should be a maximum of 80 characters.
 - Carriage return and line feed after each record followed by another record.
 - There should NOT be any extra line feed between records at all.
 - After the last record, four (4) \$\$\$\$ (dollar) signs should be punched with carriage return and line feed indicating end of file.