3628A
8K (1K x 8) BIPOLAR PROM

3628A-1	50 ns Max.
3628A-3	70 ns Max.
3628A-4	90 ns Max.

- **Fast Access Time: 50 ns for 3628A-1**
- **Low Power Dissipation: 0.08 mW/Bit Typically**
- **Four Chip Select Inputs for Easy Memory Expansion**
- **±10% Power Supply Tolerance**
- **Three-State Outputs**
- **Hermetic 24-Pin DIP**
- **Polycrystalline Silicon Fuses for Higher Fuse Reliability/Higher Programmability**

The Intel 3628A is a fully decoded 8192-bit PROM organized as 1024 words by 8 bits. The worst case access time of 35 ns is specified over the 0°C to 75°C temperature range and 10% V_{CC} power supply tolerances. There are four chip selects provided to facilitate expansion into larger PROM arrays. The PROMs use the Schottky clamped TTL technology with polycrystalline silicon fuses. All outputs are initially high, and logic low levels can be electrically programmed in selected bit locations.

The 3628A is a super-fast, high-density PROM. This 8192-bit PROM uses the most advanced technology available. As a result the 3628A combines higher performance and lower power in a smaller die than the 3628. The 3628A is packaged in a hermetic 24-pin dual in-line package with the exact pin configuration as the 3628.

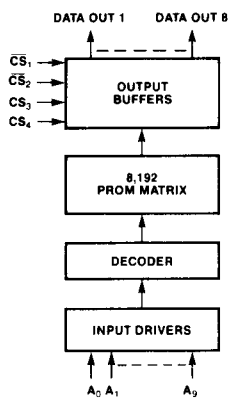
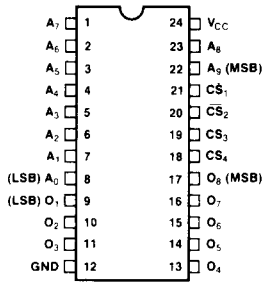


Figure 1. Block Diagram



PIN NAMES

A_0-A_9	ADDRESS INPUTS
CS_1, $\overline{CS_2}$, CS_3, CS_4	CHIP SELECT INPUTS(1)
O_1-O_8	DATA OUTPUTS

(1) To select the PROM $CS_1 = \overline{CS_2} = V_{IL}$ and $CS_3 = CS_4 = V_{IH}$

Figure 2. Pin Configuration

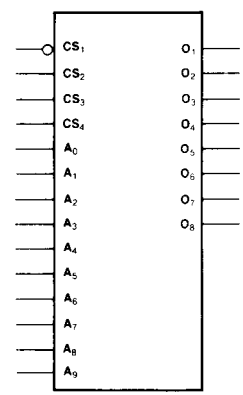


Figure 3. Logic Symbol

PROGRAMMING

The programming specifications are described in the PROM programming section of the Data Catalog.

ABSOLUTE MAXIMUM RATINGS*

Temperature Under Bias ..... −65°C to +125°C
Storage Temperature ..... −65°C to +160°C
Output or Supply Voltages ..... −0.5V to 7 Volts
All Input Voltages ..... −1.5V to 5.5V
Output Currents ..... 100 mA

**NOTICE: 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. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.*

D.C. CHARACTERISTICS (All Limits Apply for V_{CC} = +5.0V ± 10%, T_A = 0°C to +75°C)

Symbol	Parameter	Limits				Test Conditions
		Min.	Typ.[1]	Max.	Unit	
I_{FA}	Address Input Load Current		−0.05	−0.25	mA	V_{CC} = 5.5V, V_A = 0.45V
I_{FS}	Chip Select Input Load Current		−0.05	−0.25	mA	V_{CC} = 5.5V, V_S = 0.45V
I_{RA}	Address Input Leakage Current			40	μA	V_{CC} = 5.5V, V_A = 5.5V
I_{RS}	Chip Select Input Leakage Current			40	μA	V_{CC} = 5.5V, V_S = 5.5V
$\|I_O\|$	Output Leakage for High Impedance State			40	μA	V_O = 5.5V or 0.45V, V_{CC} = 5.5V, CS_1 = CS_2 = 2.4V
I_{SC}[2]	Output Short Circuit Current	−20	−40	−100	mA	V_O = 0V
V_{CA}	Address Input Clamp Voltage		−0.9	−1.5	V	V_{CC} = 4.5V, I_A = −10 mA
V_{CS}	Chip Select Input Clamp Voltage		−0.9	−1.5	V	V_{CC} = 4.5V, I_S = −10 mA
V_{OH}	Output High Voltage	2.4	3.2		V	I_{OH} = −2.4 mA, V_{CC} = 4.5V
V_{OL}	Output Low Voltage		0.3	0.45	V	V_{CC} = 4.5V, I_{OL} = 10 mA
I_{CC}	Power Supply Current		120	170	mA	V_{CC} = 5.5V
V_{IL}	Input "Low" Voltage			0.85	V	
V_{IH}	Input "High" Voltage	2.0			V	

NOTES:
1. Typical values are for T_A = 25°C and nominal supply voltages.
2. Unmeasured outputs are open during this test.

CAPACITANCE[1] (T_A = 25°C, f = 1 MHz)

Symbol	Parameter	Limits		Unit	Test Conditions
		Typ.	Max.		
C_{INA}	Address Input Capacitance	4	10	pF	V_{CC} = 5V V_{IN} = 2.5V
C_{INS}	Chip-Select Input Capacitance	4	10	pF	V_{CC} = 5V V_{IN} = 2.5V
C_{OUT}	Output Capacitance	6	12	pF	V_{CC} = 5V V_{OUT} = 2.5V

NOTES:
1. This parameter is only periodically sampled and is not 100% tested.

A.C. CHARACTERISTICS (V_{CC} = +5V ±10%, T_A = 0°C to +75°C)

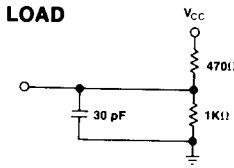
Symbol	Parameter	Max. Limits			Unit	Test Conditions
		3628A-1	3628A-3	3628A-4		
t_A	Address to Output Delay	50	70	90	ns	$CS_1 = CS_2 = V_{IL}$ and $CS_3 = CS_4 = V_{IH}$ to select the PROM.
t_{EN}	Output Enable Time	30	30	30	ns	
t_{DIS}	Output Disable Time	30	30	30	ns	

SWITCHING CHARACTERISTICS

Conditions of Test:

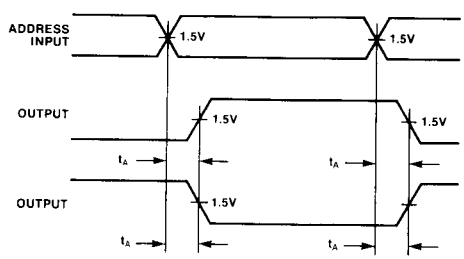
Input pulse amplitudes: 2.5V
Input pulse rise and fall times of 5 nanoseconds between 1 volt and 2 volts
Speed measurements are made at 1.5 volt levels
Output loading is 10 mA and 30 pF
Frequency of test: 2.5 MHz

10mA TEST LOAD



WAVEFORMS

ADDRESS TO OUTPUT DELAY



CHIP SELECT TO OUTPUT DELAY