

7250 COIL PRE-DRIVE FOR BUBBLE MEMORIES

7250	0 to 70°C
7250-5	-20 to +85°C

- Very Low Power
 - Power Fail Reset for Maximum Protection of Bubble Memory
 - TTL Compatible Inputs
- Only One Power Supply Required, +12V
 - CMOS Technology
 - Standard 16-Pin Dual In-Line Package

The Intel 7250 is a low power Coil Pre-Driver (CPD) for use with Intel Magnetics Bubble Memories. The 7250 is controlled by the Intel 7220-1 Bubble Memory Controller (BMC) and directly drives Quad VMOS transistor packs, which are connected to the coils of the bubble memory.

The 7250 is a high-voltage, high-current driver constructed using CMOS technology. The device has TTL compatible inputs and the outputs are designed to drive either low on-resistance VMOS transistors or bipolar transistors.

The 7250 is in a standard 16-pin dual in-line package.

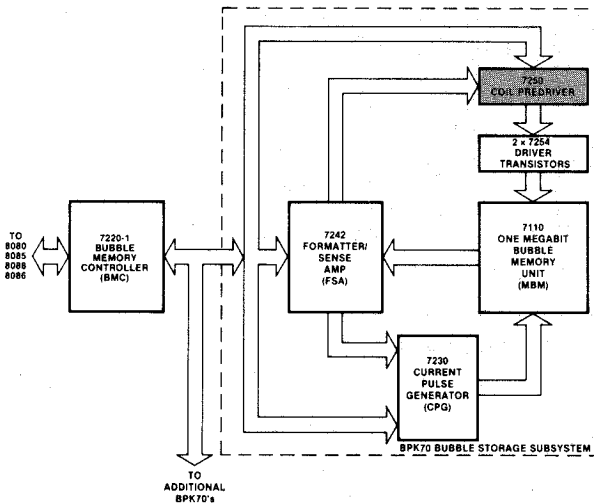


Figure 1. Block Diagram of Single Bubble Memory System—128K Bytes

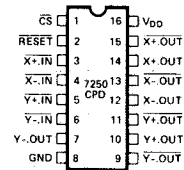


Figure 2. Pin Configuration

Table 1. Pin Description

Symbol	Pin No.	Description
CS	1	Chip select. It is active low. When high chip is deselected and I _{DD} is significantly reduced.
RESET	2	Active low input from RESET.OUT of 7220-1 Controller forces 7250 outputs inactive so that bubble memory is protected in the event of power supply failure.
X+.IN, X-.IN	3, 4	Active low inputs from Controller which turn on the high-current X outputs.
X-.OUT X-.OUT X+.OUT X+.OUT	12, 13, 14, 15	High-current outputs and their complements for driving the gates of the 7254 VMOS quad transistors which in turn drive the X coils of the bubble memory.
Y+.IN, Y-.IN	5, 6	Active low inputs from Controller which turn on the high-current Y outputs.
Y-.OUT Y-.OUT Y+.OUT Y+.OUT	7, 9, 10, 11	High-current outputs and their complements for driving the gates of the 7254 VMOS quad transistors which in turn drive the Y coils of the bubble memory.

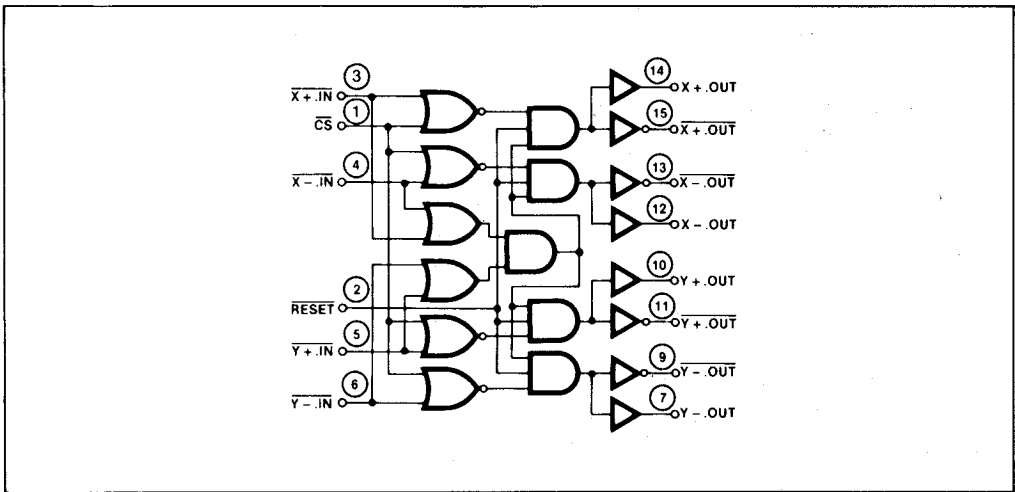


Figure 3. Logic Diagram

ABSOLUTE MAXIMUM RATINGS*

Ambient Temperature Under Bias ... -40°C to +100°C
 Storage Temperature -65°C to +150°C
 Voltage on Any Pin with
 Respect to Ground -0.5 to V_{DD} +0.5V
 Supply Voltage, V_{pp} -0.5 to +14V
 Output Current 250 mA
 (One Output @ 100% Duty Cycle)

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

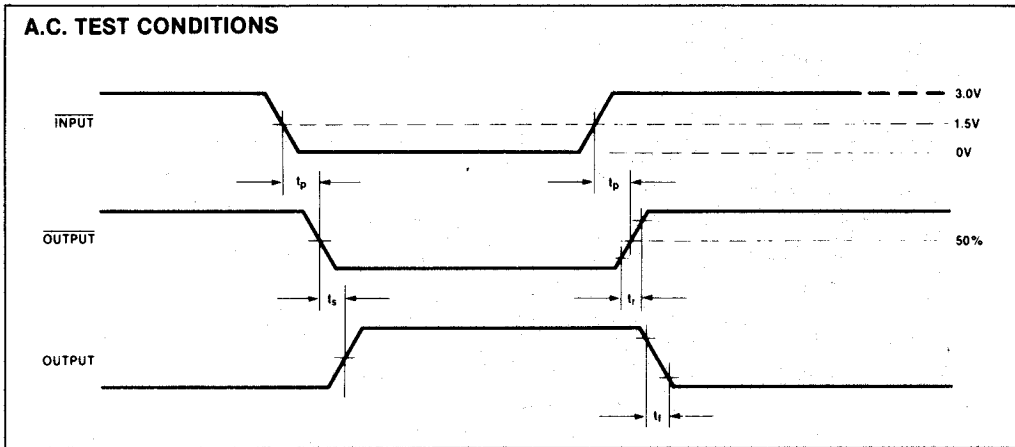
D.C. CHARACTERISTICS (T_A = see range specified on first page
 V_{DD} = 12V +5%, -10%; unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions
		Min.	Typ.	Max.		
I _{IN}	Input Current			5	μA	V _I = 0.8V
V _{IL}	Low-Level Input Voltage			0.8	V	
V _{IH}	High-Level Input Voltage	2.2			V	
V _{OL1}	Output Low Voltage			2.0	V	I _{OL} = 100 mA
V _{OL2}	Output Low Voltage			0.2	V	I _{OL} = 10 mA
V _{OH1}	Output High Voltage	V _{DD} - 2			V	I _{OH} = -100 mA
V _{OH2}	Output High Voltage	V _{DD} - 0.2			V	I _{OH} = -10 mA
I _{OL}	Output Sink Current	100			mA	V _{OL} = 2.0V
I _{OH}	Output Source Current	100			mA	V _{OH} = V _{DD} - 2.0V
I _{DD0}	Supply Current			4.5	mA	Chip Deselected: $\overline{CS} = V_{IH}$, V _{DD} = 12.6V
I _{DD1}	Supply Current			75	mA	f = 100 kHz, V _{DD} = 12.6V, Outputs Unloaded

A.C. CHARACTERISTICS (T_A = see range specified on first page
 $V_{DD} = 12V \pm 5\%$, unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
t_{p1}	Propagation Delay from $\overline{X+}$, $\overline{X-}$, $\overline{Y+}$, $\overline{Y-}$, \overline{IN}			100	ns	500 pF Load
t_{p2}	Propagation Delay from \overline{CS} or \overline{RESET}			150	ns	500 pF Load
t_r	Rise Time (10% to 90%)			45	ns	500 pF Load
t_f	Fail Time (90% to 10%)			45	ns	500 pF Load
t_s	Skew Between an Output and Its Complements			20	ns	

A.C. TEST CONDITIONS



CAPACITANCE* ($T_A = 25^\circ C$, $V_{DD} = 0V$, $V_{BIAS} = 2V$, $f = 1\text{ MHz}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
C_{IN}	Input Capacitance			10	pF	

*This parameter is periodically sampled and is not 100% tested.