

DESCRIPTION

The 82S230 (Open Collector Outputs) and the 82S231 (Tri-State Outputs) are Bipolar 2048-Bit Read Only Memories, organized as 512 words by 4 bits per word.

The 82S230 and 82S231 are fully TTL compatible, and include on-chip decoding and one chip enable input for ease of memory expansion. They feature either Open Collector or Tri-State outputs for optimization of word expansion in bussed organizations.

Both 82S230 and 82S231 devices are available in the commercial and military temperature ranges. For the commercial temperature range (0°C to +75°C) specify N82S230/231, F. For the military temperature range (-55°C to +125°C) specify S82S230/231, F.

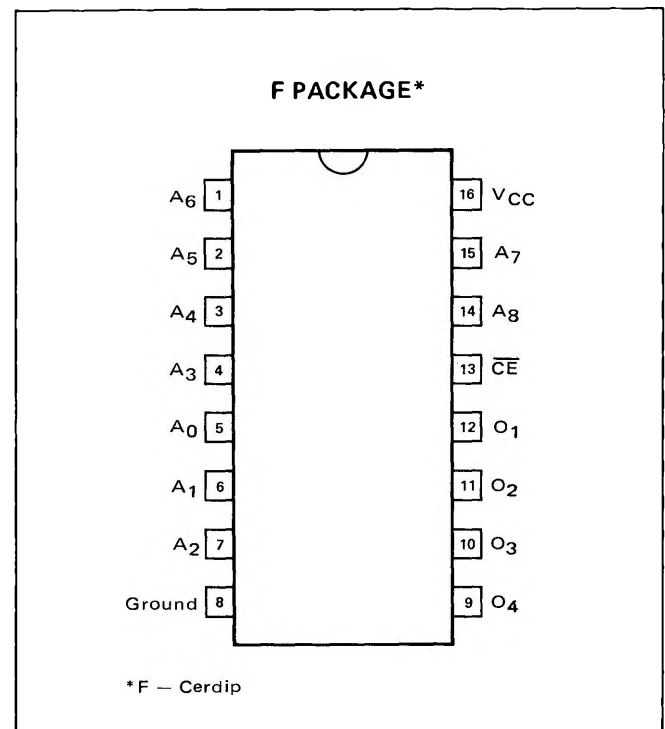
FEATURES

- ORGANIZATION — 512 X 4
- ADDRESS ACCESS TIME:
 - S82S230/231 — 70ns, MAXIMUM
 - N82S230/231 — 50ns, MAXIMUM
- POWER DISSIPATION — 0.3mW/BIT TYPICAL
- INPUT LOADING:
 - S82S230/231 — (-150μA) MAXIMUM
 - N82S230/231 — (-100μA) MAXIMUM
- ONE CHIP ENABLE INPUT
- ON-CHIP ADDRESS DECODING
- OUTPUT OPTIONS:
 - 82S230 — OPEN COLLECTOR
 - 82S231 — TRI-STATE
- FULLY COMPATIBLE WITH 82S130 AND 82S131 SIGNETICS PROMS
- 16-PIN CERAMIC DIP

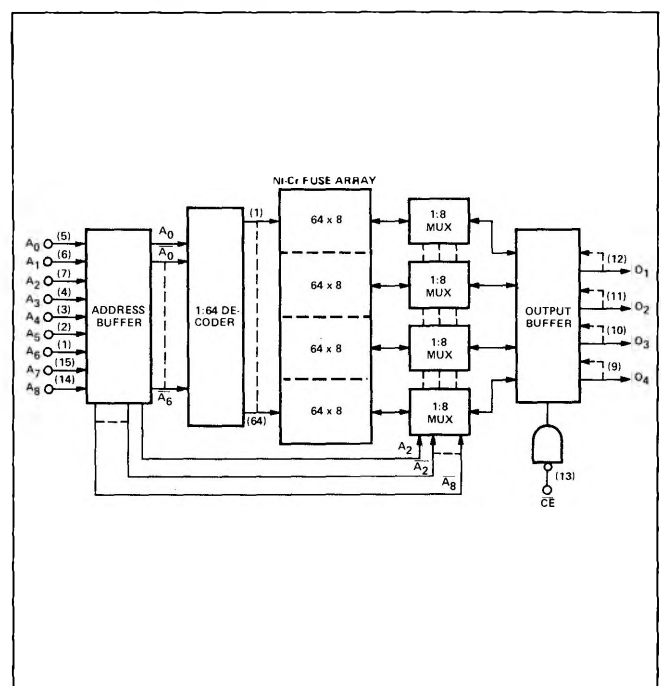
APPLICATIONS

SEQUENTIAL CONTROLLERS
MICROPROGRAMMING
HARDWIRED ALGORITHMS
CONTROL STORE
RANDOM LOGIC
CODE CONVERSION

PIN CONFIGURATION



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNIT
V_{CC} Power Supply Voltage	+7	Vdc
V_{IN} Input Voltage	+5.5	Vdc
V_{OH} High Level Output Voltage (82S230)	+5.5	Vdc
V_O Off-State Output Voltage (82S231)	+5.5	Vdc
T_A Operating Temperature Range (N82S230/231) (S82S230/231)	0° to +75° -55° to +125°	°C °C
T_{stg} Storage Temperature Range	-65° to +150°	°C

ELECTRICAL CHARACTERISTICS

 S82S230/231
 N82S230/231

 $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$, $4.5\text{V} \leq V_{CC} \leq 5.5\text{V}$
 $0^{\circ}\text{C} \leq T_A \leq +75^{\circ}\text{C}$, $4.75\text{V} \leq V_{CC} \leq 5.25\text{V}$

PARAMETER	TEST CONDITIONS ¹	S82S230/231			N82S230/231			UNIT
		MIN	TYP ²	MAX	MIN	TYP ²	MAX	
V_{OL} "0" Output Voltage	$I_{OUT} = 16\text{mA}$			0.5			0.45	V
I_{OLK} Output Leakage Current (82S130)	$\overline{CE} = "1"$, $V_{OUT} = 5.5\text{V}$			60			40	μA
$I_{O(OFF)}$ Hi-Z State Output Current (82S131)	$\overline{CE} = "1"$, $V_{OUT} = 0.5\text{V}$ $\overline{CE} = "1"$, $V_{OUT} = 5.5\text{V}$			-60 60			-40 40	μA μA
V_{OH} High Level Output Voltage (82S131)	$\overline{CE} = "0"$, $I_{OUT} = -2.4\text{mA}$, "1" STORED	2.4			2.4			V
C_{IN} Input Capacitance	$V_{IN} = 2.0\text{V}$, $V_{CC} = 5.0\text{V}$		5			5		pF
C_{OUT} Output Capacitance	$V_{OUT} = 2.0\text{V}$, $V_{CC} = 5.0\text{V}$		8			8		pF
I_{IL} "0" Input Current	$V_{IN} = 0.45\text{V}$			-150			-100	μA
I_{IH} "1" Input Current	$V_{IN} = 5.5\text{V}$			50			40	μA
V_{IL} "0" Level Input Voltage				.80			.85	V
V_{IH} "1" Level Input Voltage		2.0			2.0			V
I_{CC} V_{CC} Supply Current			120	140		120	135	mA
V_{IC} Input Clamp Voltage	$I_N = -18\text{mA}$		-0.8	-1.2		-0.8	-1.2	V
I_{OS} Output Short Circuit Current (82S231)	$V_{OUT} = 0\text{V}$	-15		-85	-20		-70	mA

SWITCHING CHARACTERISTICS

 S82S230/231
 N82S230/231

 $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$, $4.5 \leq V_{CC} \leq 5.5\text{V}$
 $0^{\circ}\text{C} \leq T_A \leq +75^{\circ}\text{C}$, $4.75 \leq V_{CC} \leq 5.25\text{V}$

PARAMETER	TEST CONDITIONS ¹	S82S230/231			N82S230/231			UNIT
		MIN	TYP ²	MAX	MIN	TYP ²	MAX	
Propagation Delay								
T _{AA} Address to Output	C _L = 30pF		40	70		40	50	ns
T _{CD} Chip Disable to Output	R ₁ = 270Ω		20	30		20	30	ns
T _{CE} Chip Enable to Output	R ₂ = 600Ω		20	30		20	30	ns

NOTES:

- Positive current is defined as into the terminal referenced.
- Typical values are at $V_{CC} = 5.0\text{V}$, $T_A = +25^{\circ}\text{C}$.

AC TEST FIGURE AND WAVEFORM

