

DESCRIPTION

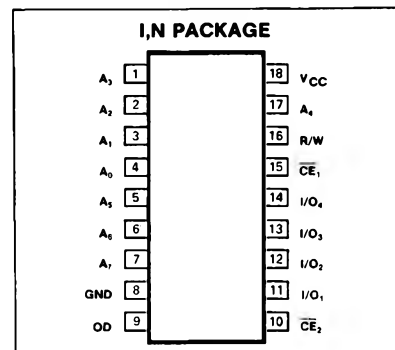
The 2111 series is a high-performance, low-power static read/write RAM.

The 2111 series is fabricated with n-channel silicon gate technology which allows the design of high performance easy to use MOS circuits and provides a high functional density on a given monolithic chip.

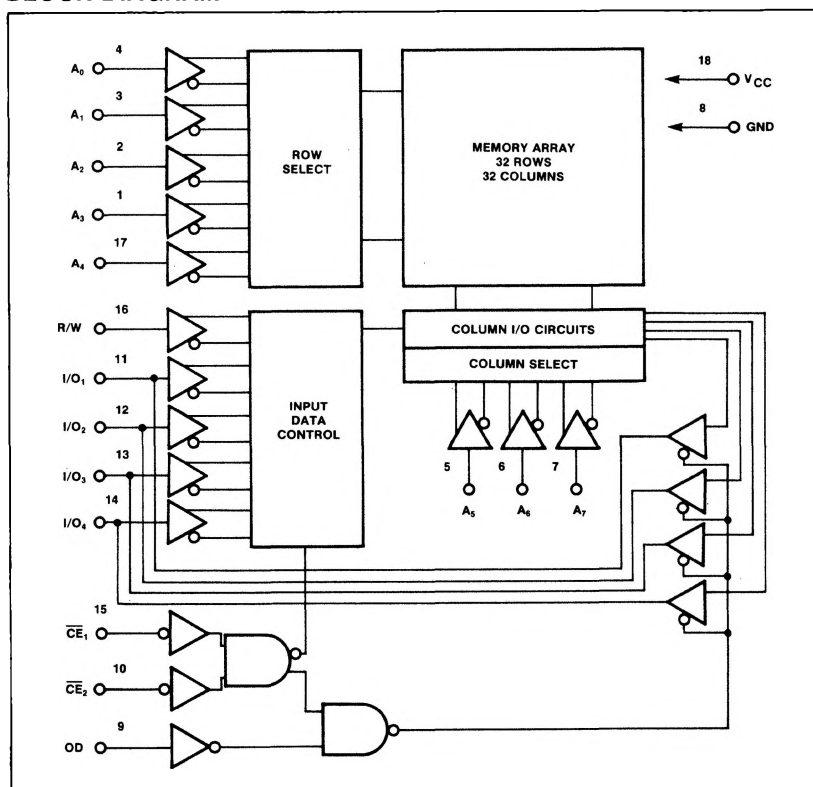
FEATURES

- Fully static
- Requires no refresh operations, sense amps or clocks
- Completely TTL compatible
- Only one 5V power supply required

PIN CONFIGURATION



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS¹

PARAMETER		RATING	UNIT
	Temperature range		°C
T _A	Operating under bias	0 to 70	
T _{STG}	Storage	-65 to 150	
P _D	Power dissipation	1	W
	Voltage on any pin with respect to ground	-0.5 to 7	V

DC ELECTRICAL CHARACTERISTICS $T_A = 0^\circ\text{C}$ to 70°C , $V_{CC} = 5V \pm 5\%$, unless otherwise specified.

PARAMETER	TEST CONDITIONS	LIMITS			UNIT
		Min	Typ ²	Max	
V_{IL} V_{IH}	Input voltage Low High	-0.5 2.2		0.65 V_{CC}	V
V_{OL} V_{OH}	Output voltage Low High			0.45	V
I_{LI}	Input load current			10	μA
I_{LOH} I_{LOL}	I/O leakage current			15 -50	μA
I_{CC1} I_{CC2}	Supply current		30	60 70	mA
C_{IN} $C_{I/O}$	Capacitance ³ Input I/O		4 10	8 15	pF

AC ELECTRICAL CHARACTERISTICS $T_A = 0^\circ\text{C}$ to 70°C , $V_{CC} = 5V \pm 5\%$, unless otherwise specified.
Input pulse levels = 0.65V to 2.2V, Input pulse rise and fall times = 20ns,
Timing measurement reference level = 1.5V,
Output load = 1 TTL gate and $C_L = 100\text{pF}$

PARAMETER	TO	FROM	2111			2111-1			2111-2			UNIT
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
READ CYCLE												
t_{RC}	Read cycle		1,000			500			650			ns
t_A	Access time				1,000			500			650	ns
t_{CC}		Output			800			350			400	ns
t_{OD}		Output			700			300			350	ns
t_{DF3}		High Z state	0		200	0		150	0		150	ns
t_{OH}	Previous read data valid after change of address	Data output	40			40			40			ns
WRITE CYCLE												
t_{WC}	Write cycle		1,000			500			650			ns
t_{AW}	Write delay		150			100			150			ns
t_{CW}		Write	900			400			550			ns
		Chip enable										
	Setup and hold time											ns
t_{DW}	Setup time	R/W	700			280			400			
t_{DH}	Hold time	Data	100			100			100			
t_{DS}	Setup time	Output	200			150			150			
t_{WP}	Write pulse		750			300			400			ns
t_{WR}	Write recovery		50			50			50			ns

NOTES

- 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 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 affect device reliability.
- Typical values for $T_A = 25^\circ\text{C}$ and supply voltage.
- This parameter is periodically sampled and is not 100% tested.

TIMING DIAGRAMS

