

# 1024 BIT READ/WRITE STATIC MOS RAM (1024X1) 21L02/21L02-1/21L02-2/21L02-3

21L02-F,I,N • 21L02-1-F,I,N • 21L02-2-F,I,N • 21L02-3-F,I,N

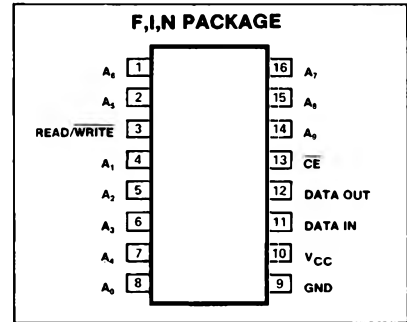
## DESCRIPTION

The 21L02, 21L02-1, 21L02-2, and 21L02-3 are low power static random access read/write memories fabricated with low threshold n-channel silicon gate technology.

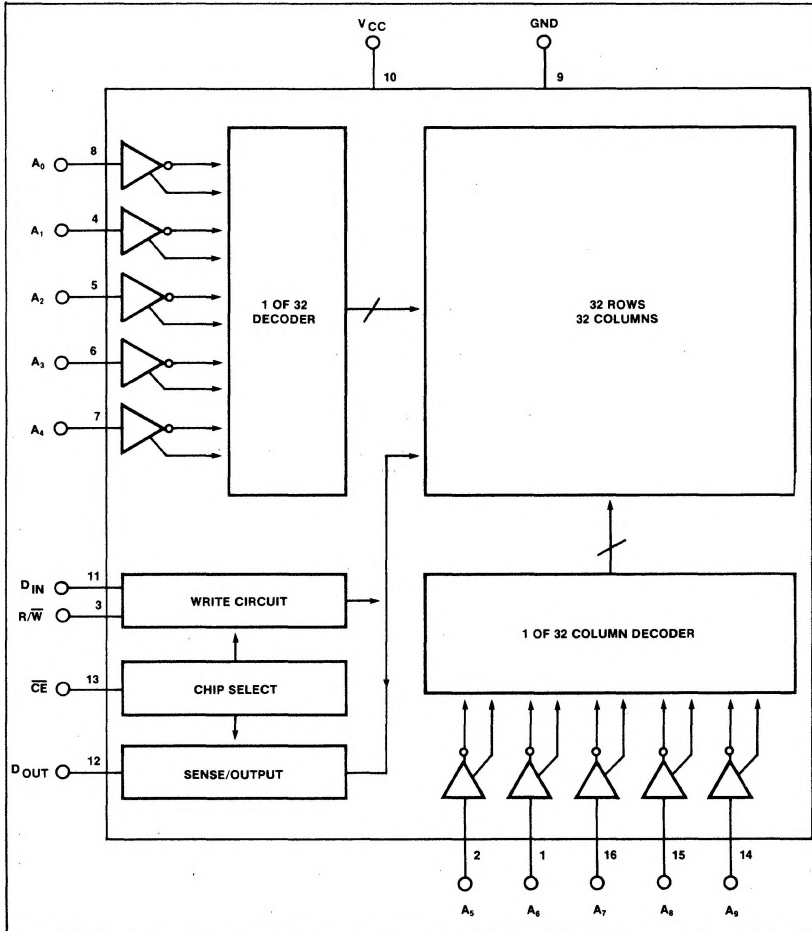
## FEATURES

- Fully static
- Requires no clocks
- Completely DTL/TTL compatible
- Single 5V power supply
- Three-state output for OR-tie capability

## PIN CONFIGURATION



## BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

PARAMETER	RATING	UNIT
T <sub>STG</sub>	Temperature range	°C
	Storage	
P <sub>D</sub>	Power dissipation <sup>2</sup>	
	N package	640
	F package	1
	I package	1
	All input, output and supply voltages with respect to ground	-0.5 to 7
		mW
		W
		W
		V

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## DC ELECTRICAL CHARACTERISTICS T<sub>A</sub> = 0°C to 70°C, V<sub>CC</sub> = 5V ± 5% unless otherwise specified.

PARAMETER	TEST CONDITIONS	LIMITS			UNIT	
		Min	Typ <sup>3</sup>	Max		
V <sub>IL</sub> V <sub>IH</sub>	Input voltage Low High	-0.5 2.2		0.65 V <sub>CC</sub>	V	
V <sub>OL</sub> V <sub>OH</sub>	Output voltage Low High			0.45	V	
I <sub>LI</sub>	Input load current (All input pins)	V <sub>IN</sub> = 0 to 5.25V			10	μA
I <sub>LOH</sub> I <sub>LOL</sub>	Output leakage current	CE = 2.2V V <sub>OUT</sub> = 4.0V V <sub>OUT</sub> = 0.45V			10 -100	μA
I <sub>CC1</sub> I <sub>CC2</sub>	Supply current	All inputs = 5.25V, Data out open T <sub>A</sub> = 25°C T <sub>A</sub> = 0°C			30 40 40	mA

## AC ELECTRICAL CHARACTERISTICS T<sub>A</sub> = 0°C to 70°C, V<sub>CC</sub> = 5V ± 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<sub>L</sub> = 100pF

PARAMETER	TO	FROM	21L02			21L02-1			21L02-2			21L02-3			UNIT
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
t <sub>RC</sub> t <sub>A</sub> t <sub>CO</sub>	Output time	Chip enable	1,000			500			650			400			ns
						1,000			500			650			400
t <sub>OH1</sub> t <sub>OH2</sub>			50 0			50 0			50 0			50 0			ns
t <sub>WC</sub> t <sub>WP</sub> T <sub>WR</sub>			1,000 750 50			500 300 50			650 400 50			400 250 50			ns ns ns
t <sub>AW</sub> t <sub>DW</sub> t <sub>DH</sub> t <sub>CW</sub>	Setup and hold time	Write Rise of R/W Change of data in Write	200 800 100 900			150 330 100 400			200 450 100 550			100 300 50 300			ns

### NOTES

1. 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 of these or any other condition above those indicated in the operation sections of this specification is not implied.
2. For operating at elevated temperatures the device must be derated based on +150°C maximum junction temperature and a thermal resistance of 150°C/W junction to ambient (B package).
3. Typical values are at +25°C and typical supply voltages.
4. All inputs protected against static charge.
5. Parameter valid over operating temperature range unless otherwise specified.
6. All voltage measurements are referenced to ground.
7. Manufacturer reserves the right to make design and process changes and improvements.

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## TIMING DIAGRAMS

