

54F/74F319

64-Bit Random Access Memory
(With Open-Collector Outputs)

Description

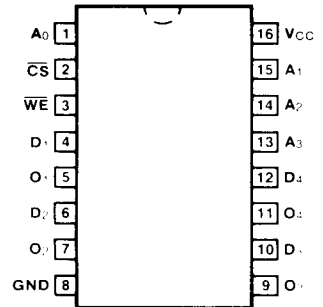
The 'F319 is a high-speed 64-bit RAM organized as a 16-word by 4-bit array. Address inputs are buffered to minimize loading, and addresses are fully decoded on-chip. Outputs are open-collector type and are in the OFF (HIGH) state whenever the Chip Select (\overline{CS}) input is HIGH. The outputs are active only in the Read mode. This device is similar to the 'F289 but features non-inverting, rather than inverting, data outputs.

- **Open-collector Outputs for Wired-AND Applications**
- **Buffered Inputs Minimize Loading**
- **Address Decoding On-chip**
- **Diode Clamped Inputs Minimize Ringing**

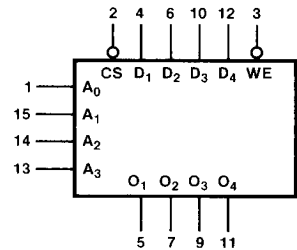
Ordering Code: See Section 6

Pkgs	Commercial Grade	Military Grade	Pkg Type
	$V_{CC} = +5.0\text{ V} \pm 5\%$, $T_A = 0^\circ\text{ C to } +70^\circ\text{ C}$	$V_{CC} = +5.0\text{ V} \pm 10\%$, $T_A = -55^\circ\text{ C to } +125^\circ\text{ C}$	
Plastic DIP (P)	74F319PC		9B
Ceramic DIP (D)	74F319DC	54F319DM	6B
Flatpak (F)		54F319FM	4L

Connection Diagram



Logic Symbol



V_{CC} = Pin 16
GND = Pin 8

Input Loading/Fan-Out: See Section 3 for U.L. definitions

Pin Names	Description	54F/74F (U.L.) HIGH/LOW
$A_0 - A_3$	Address Inputs	0.5/0.375
\overline{CS}	Chip Select Input (Active LOW)	0.5/0.75
\overline{WE}	Write Enable Input (Active LOW)	0.5/0.75
$D_1 - D_4$	Data Inputs	0.5/0.375
$O_1 - O_4$	Data Outputs	OC*/12.5

*OC - Open Collector

Function Table

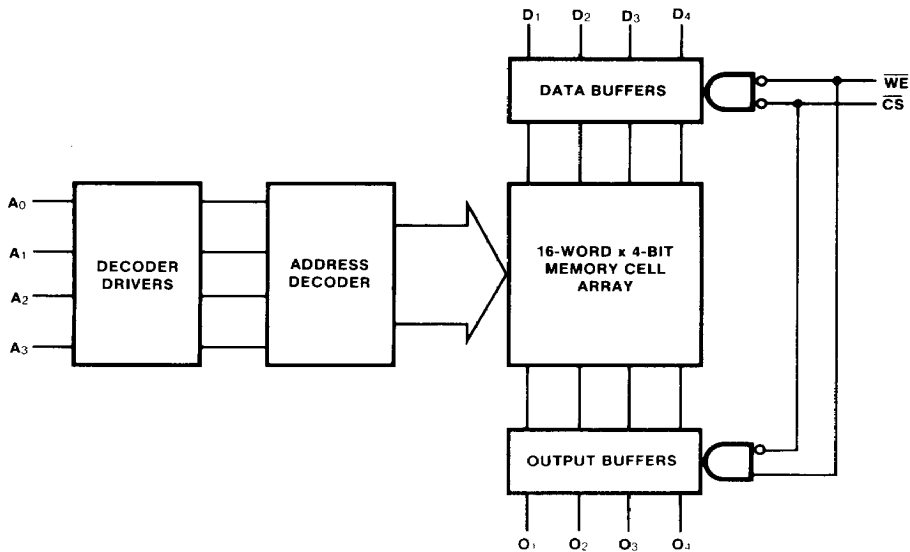
INPUTS		OPERATION	CONDITION OF OUTPUTS
\overline{CS}	\overline{WE}		
L	L	Write	Off (HIGH)
L	H	Read	Complement of Stored Data
H	X	Inhibit	Off (HIGH)

H = HIGH Voltage Level

L = LOW Voltage Level

X = Immaterial

Logic Diagram



DC Characteristics over Operating Temperature Range (unless otherwise specified)

Symbol	Parameter	54F/74F			Units	Conditions
		Min	Typ	Max		
I _{CC}	Power Supply Current		37	55	mA	V _{CC} = Max; \overline{WE} , \overline{CS} = Gnd

AC Characteristics: See Section 3 for waveforms and load configurations

Symbol	Parameter	54F/74F			54F		74F		Units	Fig. No.
		T _A = +25°C, V _{CC} = +5.0 V C _L = 50 pF			T _A , V _{CC} = Mil C _L = 50 pF		T _A , V _{CC} = Com C _L = 50 pF			
		Min	Typ	Max	Min	Max	Min	Max		
t _{PLH} t _{PHL}	Access Time, HIGH or LOW A _n to O _n	11 8.0	18 14	25 20				ns	3-1 3-10	
t _{PHL}	Access Time CS to O _n	4.5	8.0	11				ns	3-1 3-4	
t _{PLH}	Disable Time CS to O _n	6.0	10.2	14						
t _{PHL}	Write Recovery Time \overline{WE} to O _n	8.0	13.5	19				ns	3-1 3-3	
t _{PLH}	Disable Time \overline{WE} to O _n	8.0	13.5	19						

AC Operating Requirements: See Section 3 for waveforms

Symbol	Parameter	54F/74F			54F		74F		Units	Fig. No.
		T _A = +25°C, V _{CC} = +5.0 V			T _A , V _{CC} = Mil		T _A , V _{CC} = Com			
		Min	Typ	Max	Min	Max	Min	Max		
t _s (H) t _s (L)	Setup Time, HIGH or LOW A _n to \overline{WE}	0 0						ns	3-16	
t _h (H) t _h (L)	Hold Time, HIGH or LOW A _n to \overline{WE}	0 0								
t _s (H) t _s (L)	Setup Time, HIGH or LOW D _n to \overline{WE}	10 10						ns	3-14	
t _h (H) t _h (L)	Hold Time, HIGH or LOW D _n to \overline{WE}	0 0								
t _s (L)	Setup Time LOW CS to \overline{WE}	6.0						ns	3-14	
t _h (L)	Hold Time LOW CS to \overline{WE}	0								
t _w (L)	\overline{WE} Pulse Width LOW	6.0						ns	3-16	

☐ Test limits in screened columns are preliminary.