

GR881

.....23rd April 1999



DESCRIPTION

The GR881 is a 8192 word by 8 bits (8K x 8) non-volatile CMOS Static Ram, fabricated from advanced silicon gate CMOS technology and a high reliability lithium power cell. The pin-out of the GR881 conforms to the JEDEC standards and is fully compatible with normal static RAM. The power down circuit is fully automatic and is referenced at 4.5 volts. At this point the GR881 is write protected by an internal inhibit function for Data Protection and the memory contents are retained by the lithium power source. Power down is very fast, this being essential for data integrity, taking a maximum of 15 μ S (15 microseconds) to power down from 5 volts to 0 volts. This is much faster than system power failure conditions. Therefore there are no special conditions required when installing the GR881. The GR881 can, without external power, retain data almost indefinitely. The limiting factor will be the shelf life of the lithium cell, which is typically ten years. It is possible that this figure may be extended in view of the extremely light duty imposed upon the cell.

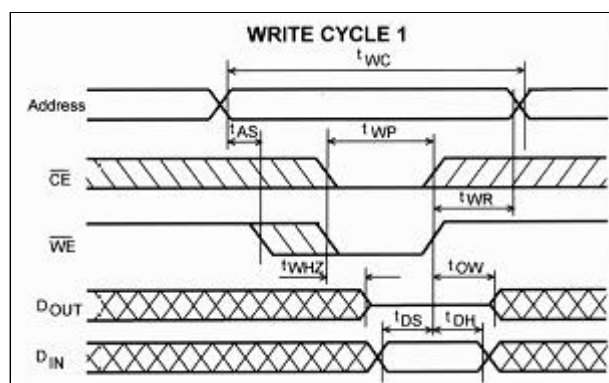
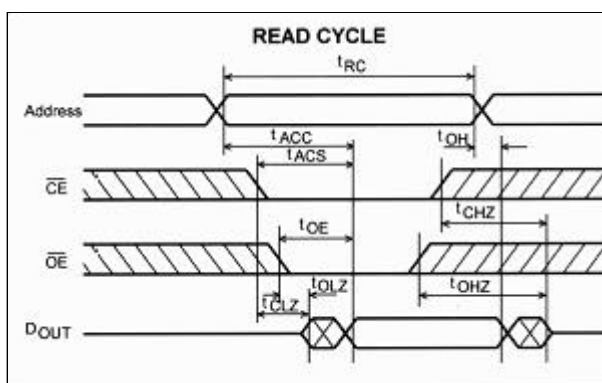
TECHNICAL DATA

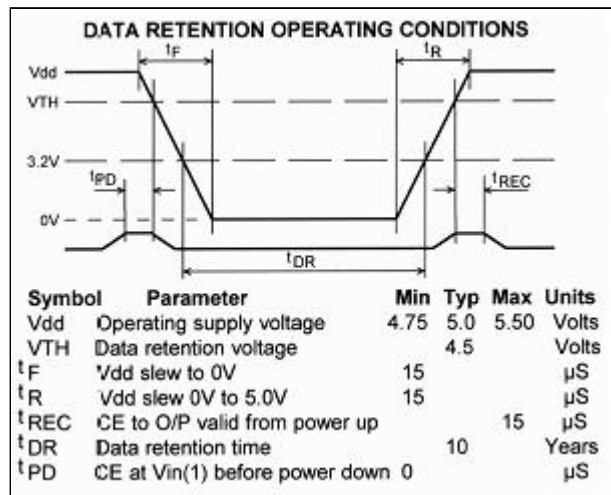
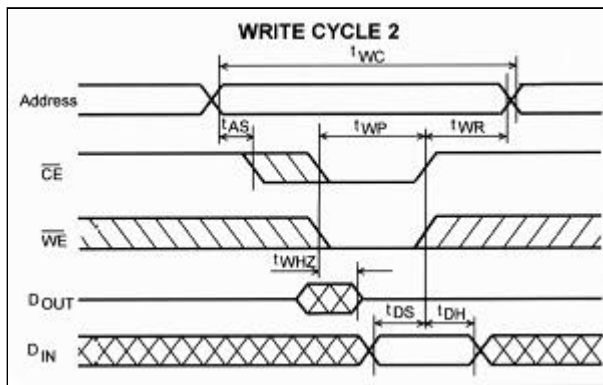
ABSOLUTE MAXIMUM RATINGS			
Symbol	Min	Max	Units
Vdd	- 0.3	7.0	Volts
Vi/o	- 0.3	Vdd + 0.3	Volts
Temp	- 20	+70	deg. C

OPERATING MODE					
CE	OE	WR	MODE	OUTPUT	Idd
H	X	X	Unsel.	Hi-Z	Standby
L	H	H	Unsel.	Hi-Z	Active
L	L	H	Read	Dout	Active
L	X	L	Write	Din	Active

PIN CONNECTIONS			PIN DESIGNATIONS	
NC	1	28	Vdd	
A12	2	27	WR	
A7	3	26	CE ₂	
A6	4	25	A8	
A5	5	24	A9	
A4	6	23	A11	Address I/P's
A3	7	22	OE	Data in/out
A2	8	21	A10	OE
A1	9	20	CE ₁	Output Enable
A0	10	19	D7	CE ₁ CE ₂ Chip Enable
D0	11	18	D6	WR
D1	12	17	D5	Vdd
D2	13	16	D4	+5Volt Power
GND	14	15	D3	GND
				Ground

OPERATING CONDITIONS				
Symbol	Min	Typ	Max	Unit
Vdd	4.75	5.0	5.5	Volts
Vin (*)	2.2		Vdd+0.3	Volts
Vin (0)	- 0.3		0.8	Volts
Iin (any other pin)	- 1.0		+1.0	μ A
Vout (1)(Iout = -1mA)	2.4			Volts
Vout (0)(Iout = +2mA)			0.4	Volts
Idd (Active)		30		mA
Idd (Deselected)		1.0		mA
Tcycle			100	nS
Cin (any pin)		10		pF





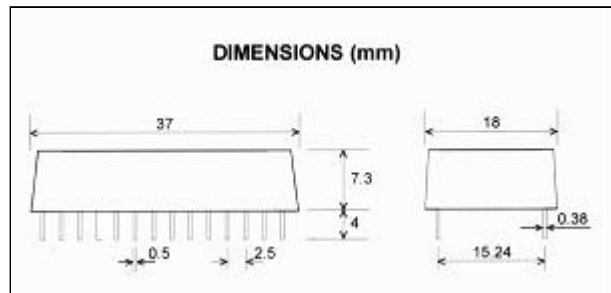
TIMING (nS-nano seconds)

Read Cycle		100nS	
Symbol	Parameter	Min	Max
t_{RC}	Read cycle time	100	
t_{ACC}	Access time		100
t_{ACS}	CE to output valid		100
t_{OE}	\overline{OE} to output valid		40
t_{CLZ}	\overline{CE} to output active	10	
t_{OLZ}	\overline{OE} to output active	5	
t_{OH}	Output hold time	10	
t_{CHZ}	\overline{CE} to output disable		30
t_{OHZ}	\overline{OE} to output disable		20

Write Cycle		100nS	
Symbol	Parameter	Min	Max
t_{WC}	Write cycle time	100	
t_{WP}	Write pulse width	60	
t_{AS}	Address setup time	0	
t_{WR}	Write recovery time	0	
t_{WHZ}	\overline{WR} to output disable		30
t_{OW}	Output active from \overline{WR}	10	
t_{DS}	Data setup time	40	
t_{DH}	Data HOLD TIME	0	

Notes

- \overline{WE} must be high during address transitions.
- A Write occurs during the overlap of active \overline{CE} and a low \overline{WE} .
- $\overline{CE} = \overline{CE1}$ and $\overline{CE2}$.
- \overline{WE} is high for a read cycle.



APPLICATION

When powered down, the GR881 is transportable and data can be moved from system to system, this makes it ideal for programme development, data collection in data loggers, programme changes in process control, automation and robotics and user definable lookup tables, etc.

Additional information available through our technical services department.

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