

GR12883

.....23rd April 1999



DESCRIPTION

The GR12883 is a 131072 word by 8 bits (128K x 8) non-volatile CMOS Static Ram, fabricated from advanced silicon gate CMOS technology and a high reliability lithium power cell. The power down circuit is fully automatic and is referenced at 4.5 volts. At this point the GR12883 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 GR12883. The GR12883 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
V _{dd}	- 0.3	7.0	Volts
V _{i/o}	- 0.3	V _{dd} + 0.3	Volts
Temp	- 20	+70	deg. C

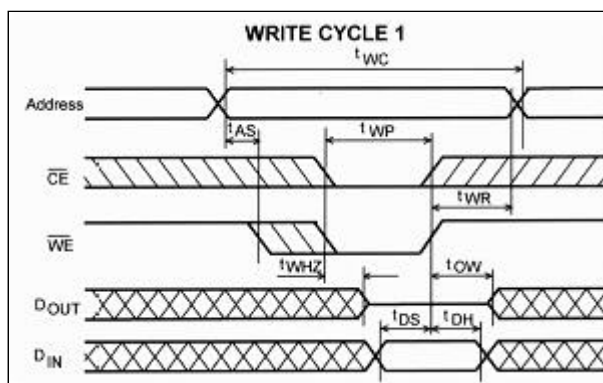
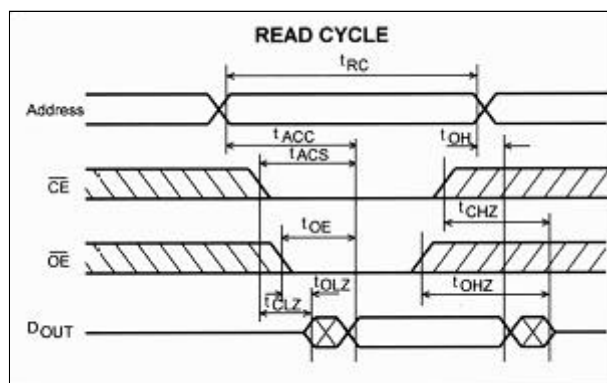
OPERATING MODE					
CE	OE	WR	MODE	OUTPUT	I _{dd}
H	X	X	Unsel.	Hi-Z	Deselected
L	H	H	Unsel.	Hi-Z	Active
L	L	H	Read	Dout	Active
L	X	L	Write	Din	Active

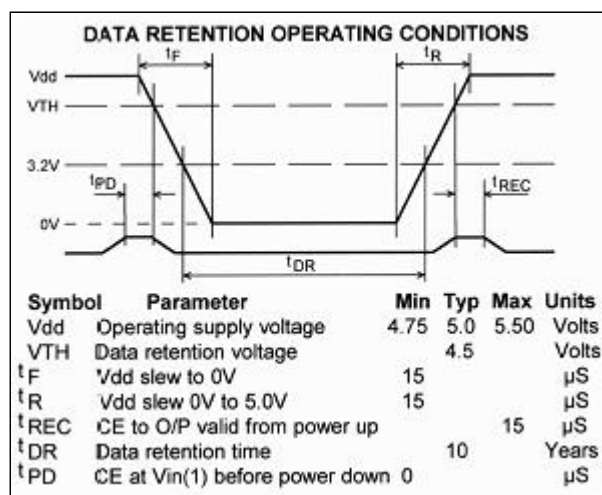
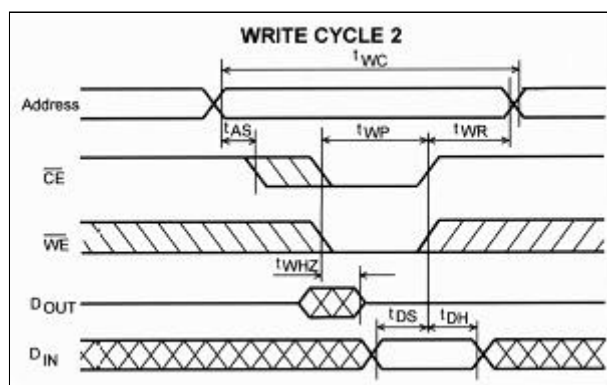
PIN CONNECTIONS			
NC	1	32	V _{dd}
A16	2	31	A15
A14	3	30	CE ₂
A12	4	29	WR
A7	5	28	A13
A6	6	27	A8
A5	7	26	A9
A4	8	25	A11
A3	9	24	OE
A2	10	23	A10
A1	11	22	CE ₁
A0	12	21	D7
D0	13	20	D6
D1	14	19	D5
D2	15	18	D4
GND	16	17	D3

PIN DESIGNATIONS

Pin	Function
A0-A16	Address I/P's
D0-D7	Data in/out
OE	Output Enable
CE ₁ CE ₂	Chip Enable
WR	Write Enable
V _{dd}	+5Volt Power
GND	Ground
NC	No Connect

OPERATING CONDITIONS				
Symbol	Min	Typ	Max	Unit
V _{dd}	4.75	5.0	5.5	Volts
V _{TH}		4.5		Volts
V _{in} (1)	2.2			Volts
V _{in} (0)			0.8	Volts
I _{in} (CE)			1.0	LSTTL Load
I _{in} (any other pin)	- 1.0		+ 1.0	μ A
V _{out} (1) (I _{out} = -1mA)	2.4			Volts
V _{out} (0) (I _{out} = +2mA)			0.4	Volts
I _{dd} (Active)		30		mA
I _{dd} (Deselected)		1.0		mA
T _{cycle}			100	nS
C _{in} (any pin)		10		pF

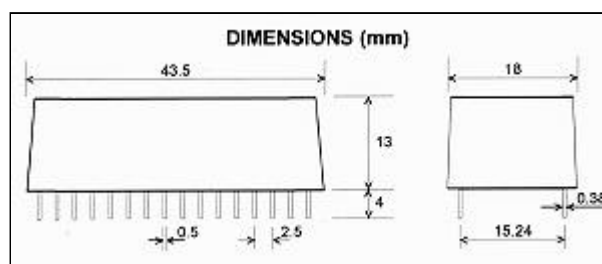




TIMING (nS-nano seconds)				
Read Cycle				
Symbol	Parameter	100nS		
		Min	Max	
tRC	Read cycle time	100		
tACC	Access time		100	
tACS	CE to output valid		100	
tOE	OE to output valid		50	
tCLZ	CE to output active	5		
tOLZ	OE to output active	5		
tOH	Output hold time	10		
tCHZ	CE to output disable		35	
tOHZ	OE to output disable		35	
Write Cycle				
Symbol	Parameter	100nS		
		Min	Max	
tWC	Write cycle time	100		
tWP	Write pulse width	75		
tAS	Address setup time	0		
tWR	Write recovery time	0		
tWHZ	WR to output disable		35	
tOW	Output active from WR	5		
tDS	Data setup time	40		
tDH	Data HOLD TIME	0		

Notes

- 1.WE must be high during address transitions.
- 2.A Write occurs during the overlap of a low CE₁, a high CE₂ and a low WE.
- 3.WE is high for a read cycle.



APPLICATION

When powered down, the GR12883 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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