

ABSOLUTE MAXIMUM RATINGS*

Voltage on Vcc Supply Relative to Vss	-0.5V to +7V
IT	-40°C+85°C
AT	-40°C+125°C
Storage Temperature (Plastic)	-55°C to +150°C
Power Dissipation	1W
Short Circuit Output Current	50mA
Voltage on any pin relative to Vss	-1V to Vcc +1V

*Stresses greater than 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 any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

RECOMMENDED DC OPERATING CONDITIONS AND DC ELECTRICAL CHARACTERISTICS

(-40°C ≤ T_A ≤ 85°C; -40°C ≤ T_A ≤ 125°C; Vcc = 5V ±10%)

DESCRIPTION	SYMBOL	MIN	MAX	UNITS	NOTES
Supply Voltage	Vcc	4.5	5.5	V	1
Input High (Logic 1) Voltage, All Inputs	V _{IH}	2.2	Vcc+1	V	1
Input Low (Logic 0) Voltage, All Inputs	V _{IL}	-0.5	0.8	V	1, 2

DESCRIPTION	CONDITIONS	SYMBOL	MAX			UNITS	NOTES
			-20	-25	-35		
Power Supply Current: Operating	W, R ≤ V _{IL} ; Vcc = MAX f = MAX = 1/'RC Outputs Open	I _{CC}	160	150	140	mA	3
Power Supply Current: Standby	W, R ≥ V _{IH} ; Vcc = MAX f = MAX = 1/'RC Outputs Open	I _{SB1}	20	20	20	mA	
	W, R ≥ Vcc -0.2; Vcc = MAX V _{IN} ≤ Vss +0.2 or V _{IN} ≥ Vcc -0.2; f = 0	I _{SB2}	7	7	7	mA	

DESCRIPTION	CONDITIONS	SYMBOL	MIN	MAX	UNITS	NOTES
Input Leakage Current	0V ≤ V _{IN} ≤ Vcc	I _{LI}	-10	10	μA	
Output Leakage Current	Output(s) Disabled 0V ≤ V _{OUT} ≤ Vcc	I _{LO}	-10	10	μA	
Output High Voltage	I _{OH} = -2.0mA	V _{OH}	2.4		V	1
Output Low Voltage	I _{OL} = 8.0mA	V _{OL}		0.4	V	1

CAPACITANCE

DESCRIPTION	CONDITIONS	SYMBOL	MAX	UNITS	NOTES
Input Capacitance	T _A = 25°C; f = 1 MHz Vcc = 5V	C _I	8	pF	4
Output Capacitance		C _O	8	pF	4

NEW
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ELECTRICAL CHARACTERISTICS AND RECOMMENDED AC OPERATING CONDITIONS

 (-40°C ≤ T_A ≤ 85°C; -40°C ≤ T_A ≤ 125°C; V_{CC} = 5V ±10%)

AC CHARACTERISTICS	PARAMETER	SYMBOL	-20		-25		-35		UNITS	NOTES
			MIN	MAX	MIN	MAX	MIN	MAX		
Shift frequency	F _s			33.3		28.5		22.2	MHz	
Access time	t _A			20		25		35	ns	
READ cycle time	t _{RC}		30		35		45		ns	
READ recovery time	t _{RR}		10		10		10		ns	
READ pulse width	t _{RPW}		20		25		35		ns	6
READ LOW to Low-Z	t _{RLZ}		3		3		3		ns	
READ HIGH to High-Z	t _{RHZ}			15		18		20	ns	
Data hold from \bar{R} HIGH	t _{OH}		5		5		5		ns	
WRITE cycle time	t _{WC}		30		35		45		ns	
WRITE pulse width	t _{WPW}		20		25		35		ns	6
WRITE recovery time	t _{WR}		10		10		10		ns	
WRITE HIGH to Low-Z	t _{WLZ}		5		5		5		ns	5
Data setup time	t _{DS}		12		15		18		ns	
Data hold time	t _{DH}		0		0		0		ns	
RESET cycle time	t _{RSC}		30		35		45		ns	
RESET pulse width	t _{RSP}		20		25		35		ns	6
RESET recovery time	t _{RSR}		10		10		10		ns	
READ HIGH to RESET HIGH	t _{RRS}		20		25		35		ns	
WRITE HIGH to RESET HIGH	t _{WRS}		20		25		35		ns	
RETRANSMIT cycle time	t _{RTC}		30		35		45		ns	
RETRANSMIT pulse width	t _{RT}		20		25		35		ns	
RETRANSMIT recovery time	t _{RTR}		10		10		12		ns	
RETRANSMIT setup time	t _{RTS}		20		25		35		ns	
RESET to $\bar{A}E\bar{F}$, $\bar{E}F$ LOW	t _{EFL}			30		35		45	ns	
RESET to $\bar{A}E\bar{F}$, $\bar{H}F$, $\bar{F}F$ HIGH	t _{HFH} , t _{FFH}			30		35		45	ns	
READ LOW to $\bar{E}F$ LOW	t _{REF}			20		25		30	ns	
READ HIGH to $\bar{F}F$ HIGH	t _{RFF}			20		25		30	ns	
WRITE LOW to $\bar{F}F$ LOW	t _{WFF}			20		25		30	ns	
WRITE HIGH to $\bar{E}F$ HIGH	t _{WEF}			20		25		30	ns	
WRITE LOW to $\bar{H}F$ LOW	t _{WHF}			30		35		45	ns	
READ HIGH to $\bar{H}F$ HIGH	t _{RHF}			30		35		45	ns	
READ HIGH after $\bar{E}F$ HIGH	t _{RPE}		20		25		35		ns	5
WRITE HIGH after $\bar{F}F$ HIGH	t _{WPF}		20		25		35		ns	5
READ/WRITE to $\bar{X}O$ LOW	t _{XOL}			20		25		35	ns	
READ/WRITE to $\bar{X}O$ HIGH	t _{XOH}			20		25		35	ns	
$\bar{X}I$ pulse width	t _{XIP}		20		25		35		ns	
$\bar{X}I$ setup time	t _{XIS}		12		15		15		ns	
$\bar{X}I$ recovery time	t _{XIR}		10		10		10		ns	

NOTES

- All voltages referenced to V_{SS} (GND).
- 3V for pulse width < t_{RC}/2.
- I_{CC} is dependent on output loading and cycle rates.
- This parameter is sampled.
- Data flow-through mode only.
- Pulse widths less than minimum are not allowed.