

T-49-15-02

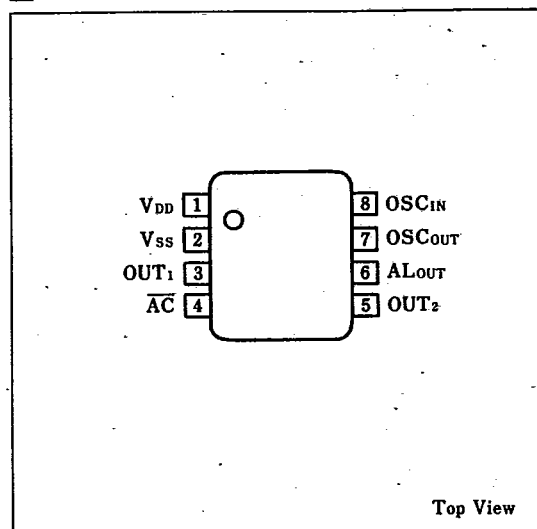
LR3468

Analog Clock Driver LSI

Description

The LR3468 is a CMOS LSI for electronic analog clocks using a 4.19MHz crystal, 23-stage frequency divider, motor drive circuit and alarm output buffer.

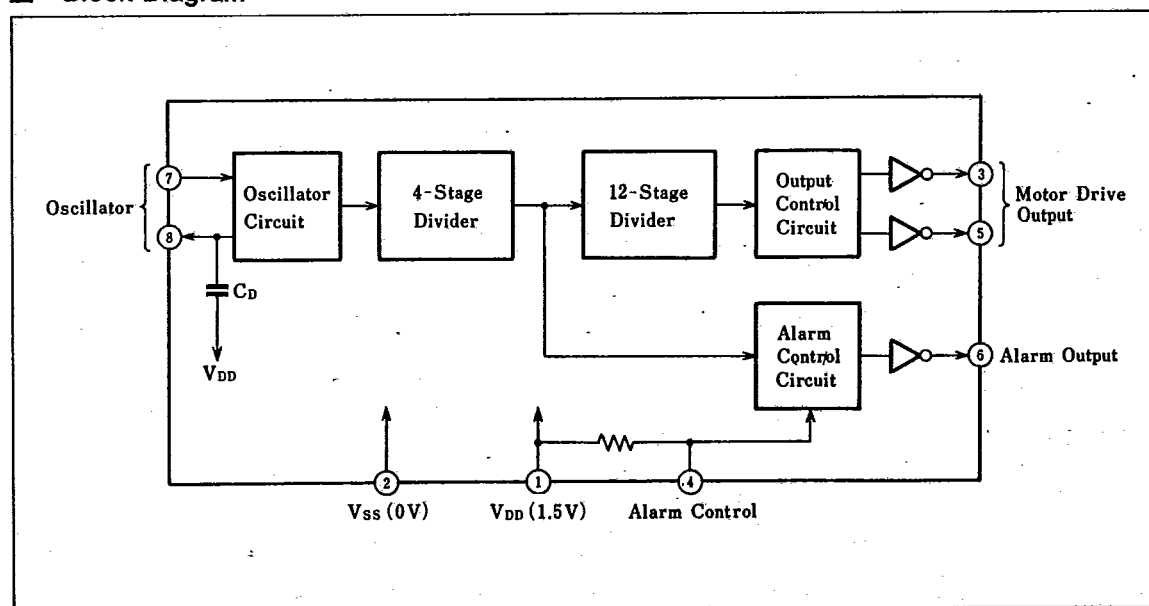
Pin Connections



Features

1. Low power consumption
2. Low impedance output buffer
3. Modulated alarm output
4. Single power supply : + 1.5V
5. 1Hz stepper motor drive
6. Included oscillator output capacitor C_D
7. 32.768kHz crystal oscillator
8. 8-pin dual-in-line package

Block Diagram


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■ Pin Functions

Pin No.	Symbol	Function
1	V _{DD}	Power supply (1.5V)
2	V _{SS}	Power supply (0V)
3	OUT ₁	0.5Hz output
4	AC	AC input
5	OUT ₂	0.5Hz output
6	AL _{OUT}	Alarm output
7	OSC _{OUT}	Oscillator output
8	OSC _{IN}	Oscillator input

■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Pin voltage*	V _{DD}	-0.3 to +3.0	V
	V _{IN}	-0.3 to V _{DD} +0.3	V
	V _{OUT}	-0.3 to V _{DD} +0.3	V
Operating temperature	T _{opr}	-10 to +60	°C
Storage temperature	T _{stg}	-55 to +150	°C

* Referenced to V_{DD}

■ Operating Conditions

(T_a=25°C)

Parameter	Symbol	Ratings	Unit
Supply voltage	V _{DD}	1.1 to 1.9	V
Oscillator frequency	f _{osc}	32.768 (TYP.)	kHz
Oscillation start voltage	V _{osc}	1.2	V

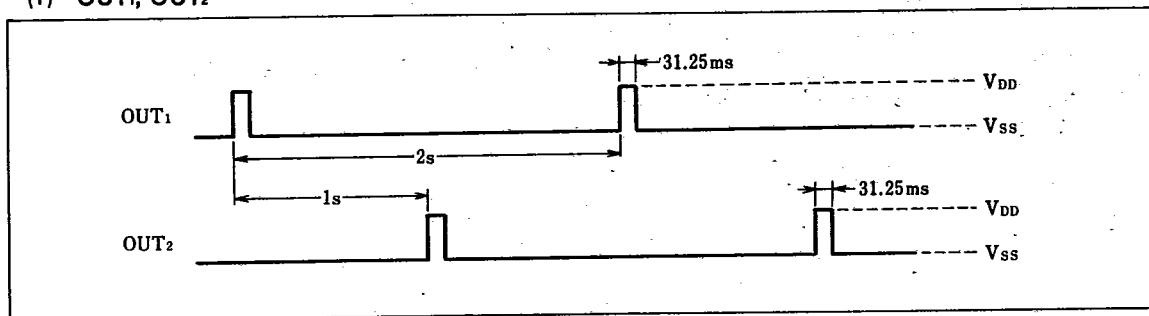
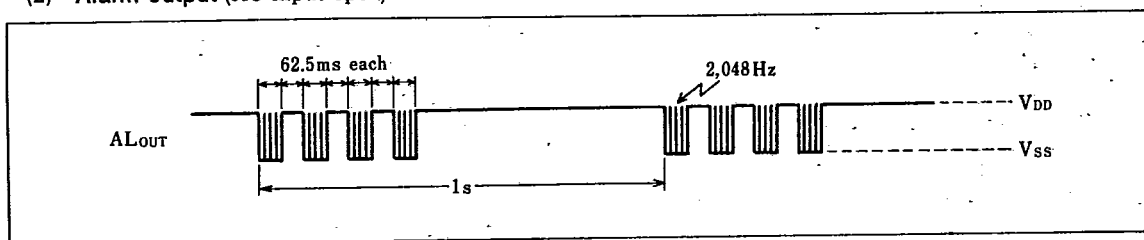
■ Electrical Characteristics

(f_{osc}=32.768kHz, C_G=22pF, C_I=20kΩ, T_a=25°C)

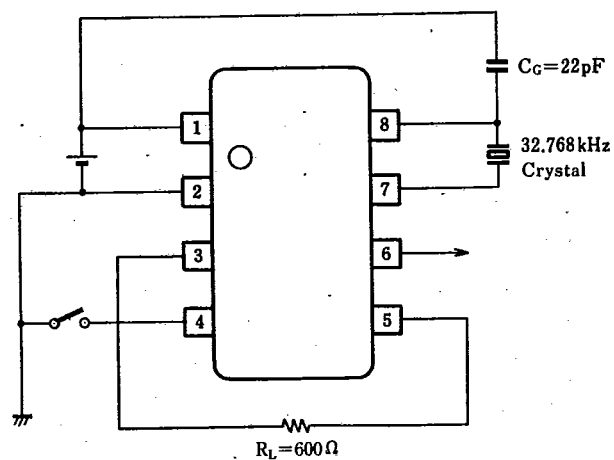
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Current consumption	I _{DD}	V _{DD} =1.5V			10	μA
Oscillation stability	Δf/ΔV _{DD}	V _{DD} =1.1 to 1.7V			2	ppm/0.1V
Output on resistance	R _{sat1} (P+N)	V _{DD} =1.2V, R _L =600Ω			120	Ω
Alarm output on resistance	R _{sat2} (P or N)	V _{DD} =1.5V, I _{OUT} =1mA		200	600	Ω
AC pin pull up resistance	R _{AC}	V _{DD} =1.5V, V _{IN} =0V		10		kΩ
Oscillation start time	T _{osc}	V _{DD} =1.5V			5	s
Oscillation circuit built-in capacitance	C _D			25		pF
AC input voltage	V _{IH}	V _{DD} =1.5V	1.4		1.5	V
	V _{IL}	V _{DD} =1.5V	0		0.1	V
Oscillation start time	T _{osc}	V _{DD} =1.5V			5	s
Oscillation start voltage	V _{osc}				1.2	V

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■ Output Waveform

(1) OUT₁, OUT₂(2) Alarm output ($\overline{AC}$ input open)

■ Test Circuit



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