

FUNCTIONS

The DL82319 ICs are CMOS quartz analog clock circuits that drive a stepping motor precisely if a 32768 Hz quartz crystal is properly connected.

FEATURES

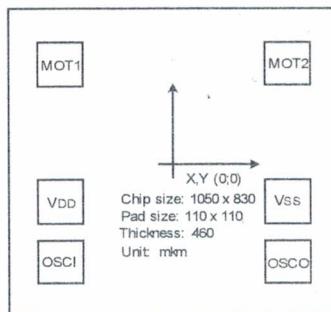
- Single 1.5 Volt battery operation with low current consumption.
- Quartz-crystal-controlled oscillator for 32768 Hz 0ppm quartz crystal.
- 8 Hz stepping motor driven with **62 ms** pulse width.
- Bell motor noise immunity.
- ESD protection up to 3000 V.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Supply Voltage	$V_{DD}-V_{SS}$	-0,3 to +5,0	V
Input Voltage	V_{IN}	$V_{SS}-0,3 < V_{IN} < V_{DD}+0,3$	V
Operating Temperature	T_{OPR}	0 to 70	°C
Storage Temperature	T_{STG}	-55 to +150	°C

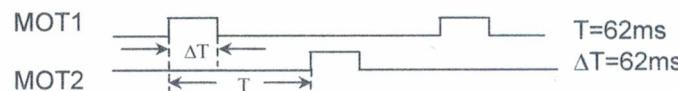
ELECTRICAL CHARACTERISTICS $V_{DD}-V_{SS}=1,5V$, $T_A=25^0C$, $F_{OSC}=32,768$ Hz, XTAL $R_S=25\text{ K}\Omega / 12.5\text{ pF}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating Voltage	V_{DD}	-	1,1	1,5	1,8	V
Operating Current	I_{DD}	No Load	-	0,9	2,0	μA
Saturation Resistance MOT1-2	R_{SAT}	$V_{DD}=1,2V R_L=200\Omega$	-	45	60	Ω
Stability $\Delta f/f$		$\Delta V_{DD}=0,1V$	-	0,1	0,2	ppm
Oscillator Start	T_{OST}	$V_{DD}=1,2V$	-	-	2	s

PAD DESCRIPTION AND BONDING PAD DIAGRAM

Pad	Function description	X (mkm)	Y (mkm)
MOT1	Motor driving output 1	-385	271
MOT2	Motor driving output 2	385	271
OSCI	Crystal oscillator input	-385	-272
OSCO	Crystal oscillator output	385	-272
V_{SS}	Negative power supply	385	-112
V_{DD}	Positive power supply	-385	-112

Substrate of chip is connected to V_{SS}

TIMING WAVEFORM**APPLICATION CIRCUIT**