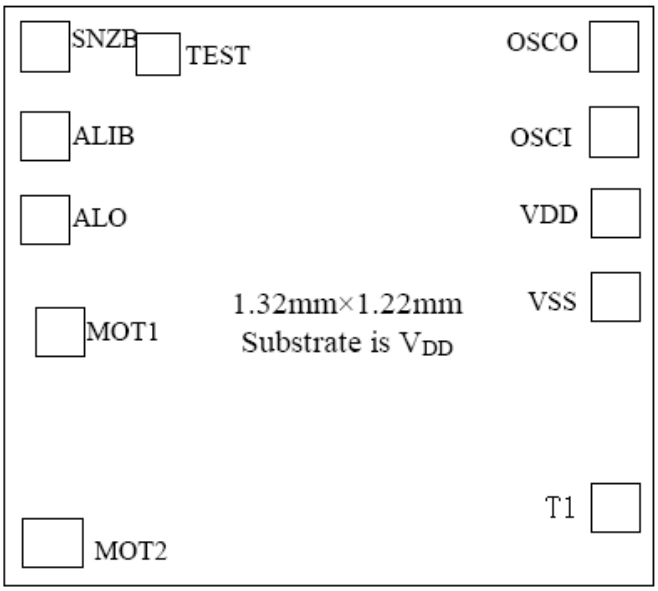
Analog alarm clock with snooze

TheSDL1024 series are analog clock ICs that derive their timing form a 32KHz oscillator element. They feature alarm output snooze function and alarm auto-stop function. They can be configured to match a wide variety of clock specifications, alarm functions outputs.

Features

Single 1.5V battery operation
32,768 Hz crystal frequency
Low power dissipation
Built-in trim capacitor
Output for 1Hz or 16Hz stepper motor with selectable pulse width
256 second snooze interval
128 second alarm output auto-stop function (Mask Option)
Alarm outputs compatible with both electronic sound alarms
ALIB and SNZB use different pins
Built-in debounce circuit (ALIB/SNZB pin)
Fast test functions
Power-on-clear function

PAD LAYOUT

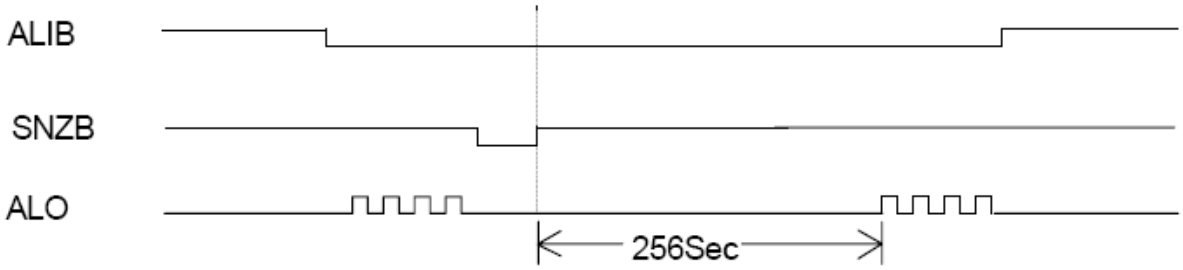


PAD No.	PAD Name.	X	Y
1	SNZB	75	1075
2	ALIB	75	911
3	ALO	75	760
4	MOT1	105	553
5	MOT2	93	75
6	T1	1175	186
7	VSS	1175	628
8	VDD	1175	778
9	OSCI	1175	923
10	OSCO	1175	1075
11	TEST	249	1065

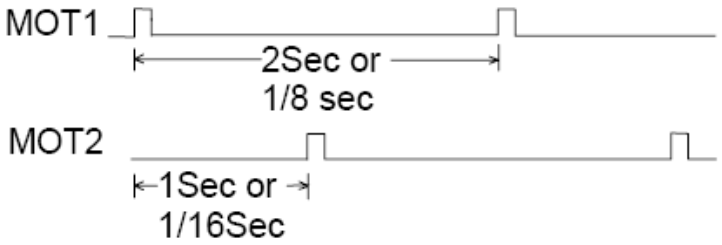
TYPE LIST

TYPE	ALO	MOT frequency	MOT pulse width
SDL1024	SINGLE	1Hz	46.875ms

Snooze Waveform



Motor Output Driving



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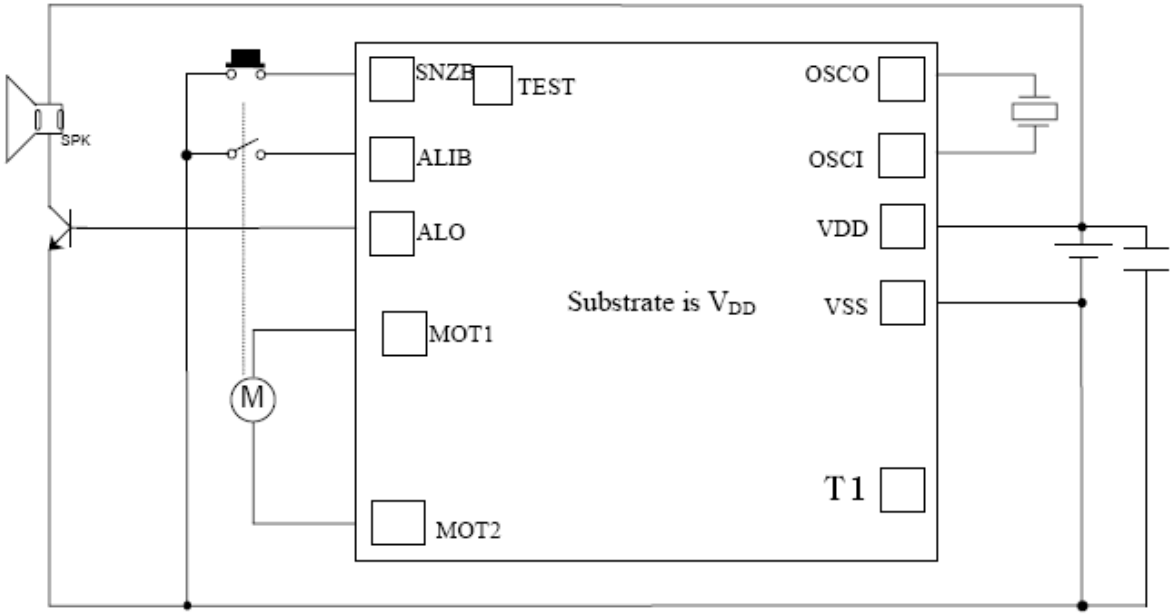
Application Diagram

Speaker application



DC Characteristics

(V_{DD}=1.5V, V_{SS}=0V, Fosc=32768Hz Ta=25℃ unless specified otherwise)

Item	Symb.	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}		1.1		1.8	V
Operating Current	I_{DD}	No Load		1.2	2.0	μA
Output Current		V_{DD}=1.2V				
Motor	I_M	RL=200Ω	4.5			mA
Alarm high	I_{OHA}	V_{OHA}=0.7V	0.1	0.25	0.35	mA
Alarm low	I_{OLA}	V_{OLA}=0.5V	0.1	0.25	0.35	mA
OSC. Start time		V_{DD}=1.2V			2	sec
OSC. Stability	△f/f	△V_{DD}=0.1V		0.5	1	ppm
Internal Cap.	Cd			25		pF
Internal Cap.	Cg	Mask Option	5		25	pF