

## Features

- ◆ 10 Digit AN 单片机专用电路 <http://www.icasic.com/> TEL: 0755-83387030 FAX: 0755-83376182 E-MAIL: szss20@163.com
- ◆ Clock with Month, Date, Hour, Minute, Second, Weekday
- ◆ 20 Second Alarm & Hourly chime
- ◆ Sport Timer (1/100 Sec)
- ◆ 12H / 24H cycle Selectable
- ◆ Low Power Dissipation
- ◆ 32768 Hz crystal controlled operation
- ◆ Debounce circuit on switch input
- ◆ Protection against static discharge
- ◆ Built-in EL Driver with 3 second delay function
- ◆ LCD Test

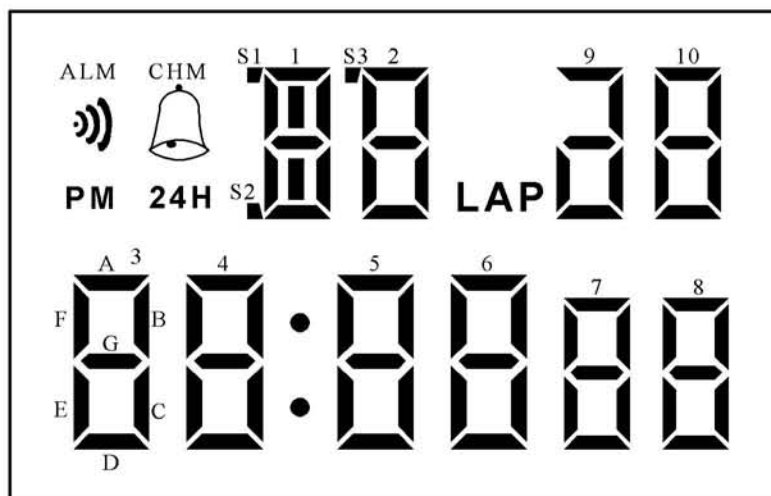
## 特點

- ◆ 可顯示月、日、時、分、秒、星期
- ◆ 20 秒響鬧、整點響鬧功能
- ◆ 秒錶計時
- ◆ 可選 12 / 24 小時制
- ◆ 低功耗
- ◆ 32768 Hz 晶振
- ◆ 開關輸入防彈跳
- ◆ 帶靜電保護
- ◆ 內建 EL 背光驅動 (3 秒延時)
- ◆ LCD 全顯功能

## ELECTRICAL CHARACTERISTICS 電特性

Characteristics		Sym	Min	Typ	Max	Unit	Remarks
Operating Voltage	工作電壓	V <sub>SS1</sub>	2.4	3.0	3.6	V	-
Quiescent Current	靜態電流	I <sub>SB</sub>	-	-	2.5	uA	No Load
Operating Current	工作電流	I <sub>OP</sub>	-	-	9	uA	
Input High Voltage	輸入高電壓	V <sub>IH</sub>	V <sub>DD</sub> -0.3	-	V <sub>DD</sub>	V	-
Input Low Voltage	輸入低電壓	V <sub>IL</sub>	V <sub>SS</sub>	-	V <sub>SS</sub> +0.3	V	-
Switch Activation Current	按鍵開關消耗電流	I <sub>SW</sub>	-	-	3	uA	V <sub>IN</sub> =V <sub>DD</sub>
Alarm Drive Current	鬧鈴驅動電流	I <sub>ALA</sub>	0.5	2.0	-	mA	V <sub>ALA</sub> =0.5V
Oscillation Frequency	振蕩頻率	F <sub>OSC</sub>	-	32768	-	Hz	-
LCD Frequency	LCD 頻率	F <sub>LCD</sub>	-	32	-	Hz	-
Time Stability	時間穩定度	T <sub>stb</sub>	-	1	3	ppm	V <sub>SS1</sub> =1.3~1.8V

## LCD 字形顯示



(1/3 Duty, 1/2 Bias, 3.0V<sub>LCD</sub>)

# LCD 字段分配

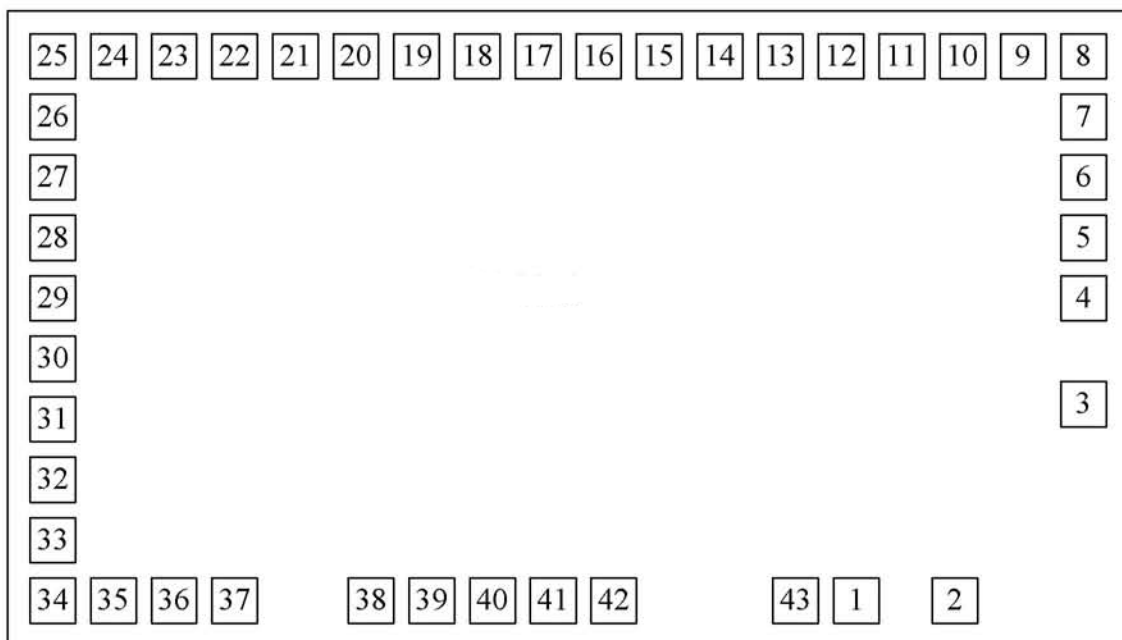
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	COM1	COM2	COM3
SEG1	--	8C	8B
SEG2	8D	8G	8A
SEG3	7C	8E	8F
SEG4	7D	7G	7B
SEG5	7E	7F	7A
SEG6	10C	10B	10A
SEG7	10D	10G	10F
SEG8	10E	9C	9B
SEG9	6C	9E	9ADG
SEG10	6D	6G	6B
SEG11	6E	6F	6A
SEG12	5D	5C	LAP
SEG13	5E	5G	5B

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	COM1	COM2	COM3
SEG14	COL	5F	5A
SEG15	2D	2BC	2A
SEG16	2G	2EF	S3
SEG17	1C	1B	1A
SEG18	1G	1H	1F
SEG19	1D	1E	S1S2
SEG20	24H	CHM	ALM
SEG21	4B	4A	PM
SEG22	4C	4G	4F
SEG23	4D	4E	3B
SEG24	3C	3G	3A
SEG25	3D	3E	3F

## Pad Diagram



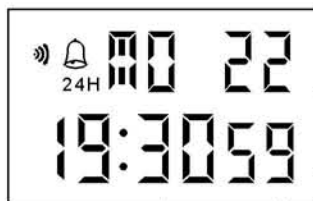
# Pad Location

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Pin No	Name	X	Y
1	OSCO	585	-585
2	OSCI	720	-585
3	VSS2	1105	-186
4	VDD	1105	55
5	COM1	1105	185
6	COM2	1105	315
7	COM3	1105	445
8	SEG1	1105	585
9	SEG2	975	585
10	SEG3	845	585
11	SEG4	715	585
12	SEG5	585	585
13	SEG6	455	585
14	SEG7	325	585
15	SEG8	195	585
16	SEG9	65	585
17	SEG10	-65	585
18	SEG11	-195	585
19	SEG12	-325	585
20	SEG13	-455	585
21	SEG14	-585	585
22	TM	-715	585
23	SEG15	-845	585
24	SEG16	-975	585
25	SEG17	-1105	585
26	SEG18	-1105	455
27	SEG19	-1105	325
28	SEG20	-1105	195
29	SEG21	-1105	65
30	SEG22	-1105	-65
31	SEG23	-1105	-195
32	SEG24	-1105	-325
33	SEG25	-1105	-455
34	AC	-1105	-585
35	DIS	-942	-585
36	IND	-807	-585
37	L	-672	-585
38	VSS1	-400	-585
39	M	-265	-585
40	S	-130	-585
41	D	5	-585
42	ALB	140	-585
43	ALA	434	-575

# 設定流程及按鍵操作

## CLOCK MODE



D:12/24hr

## ALARM MODE



D: toggle Alarm flag and Chime flag

S:set alarm-hr

S:set alarm-min

S:set alarm-min

S:set alarm-min

S:set alarm-min

S:set alarm-min

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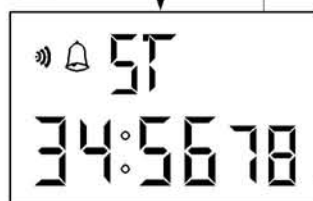
S:set alarm-min

S:set alarm-min

S:set alarm-min

S:set alarm-min

## SPORT-TIMER MODE



D:start/stop

S:Split

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

M: MODE key pressed

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## SET-CLOCK MODE



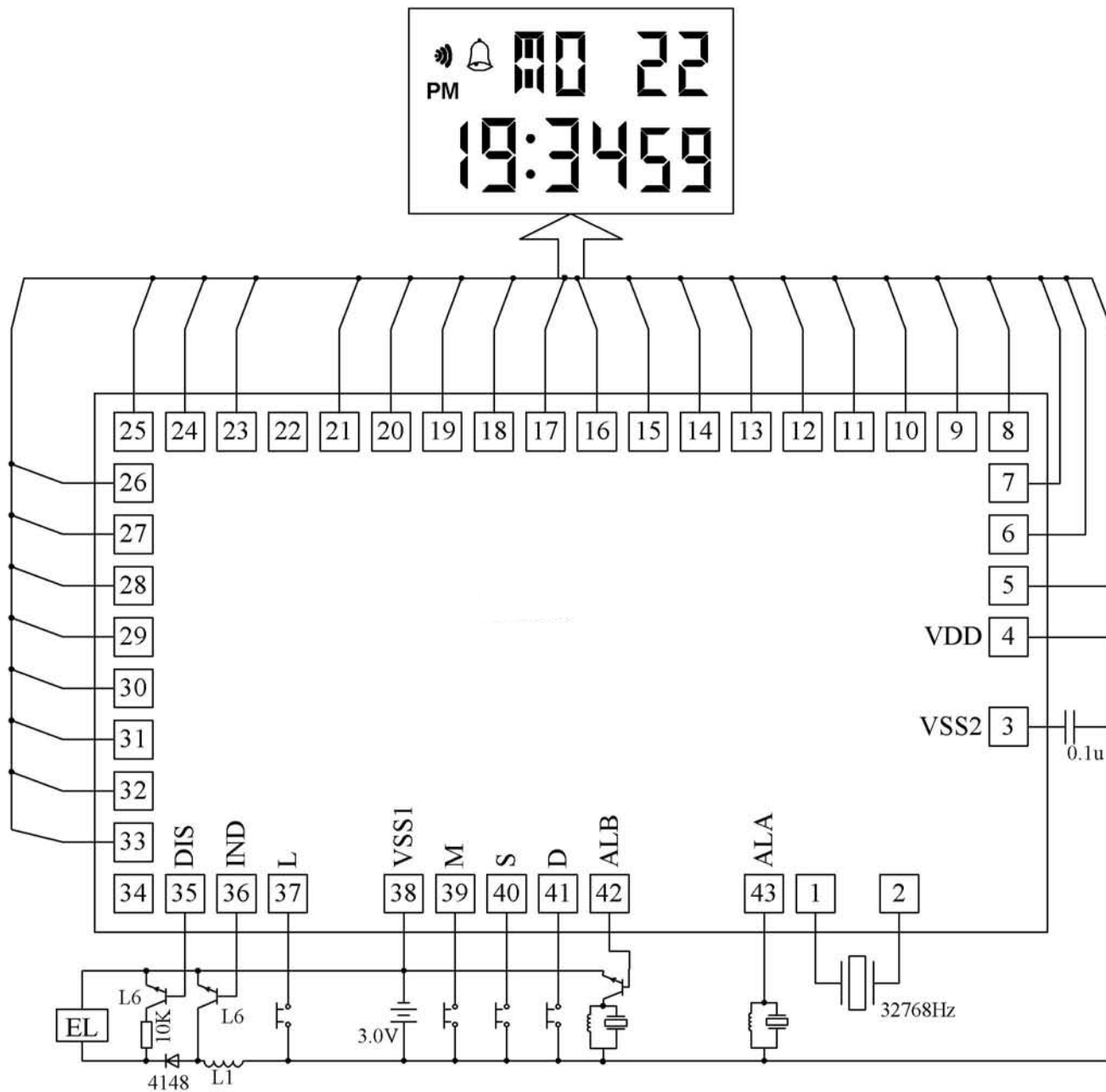
S:shift setting next 2 digits

M: MODE key pressed

D:adjust/advance setting digits

# APPLICATION DIAGRAM 參考電路圖

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- 註：
1. IC 底部接 VDD
  2. 響鬧只需選接 ALA、ALB 其中一個
  3. 聲音線圈約 30Mh
  4. L1：1.8~2.2mH / 17~12ohm，根據 EL 片面積而定