

## 12 Digit 6 Function LCD Alarm Watch with EL Backlight (3.0V)

**Description**

1292B is a CMOS digital 6-function watch integrated circuit with alarm and chronograph function; designed for a 12-digit triplexed liquid crystal display. The 1292B generates alarm, chime and touch-tone signals on the ALA output to drive a buzzer and provides special signal on the ALB output to initiate a melody chips.

**Features**

- ◆ Single-chip CMOS construction
- ◆ low power dissipation
- ◆ 3.0V battery operation
- ◆ 12 Digit Watch
- ◆ Clock with Month, Date, Hour, Minute, Second, Weekday
- ◆ 12H / 24H cycle Selectable
- ◆ 60 Second Alarm & Hourly chime
- ◆ 4 year calendar
- ◆ 8-Digit Chronograph
- ◆ 32768 Hz crystal controlled operation
- ◆ Built-in EL Backlight driver
- ◆ Debounce circuit on switch input
- ◆ Touch-tone
- ◆ 4 switch sequential operation
- ◆ Protection against static discharge

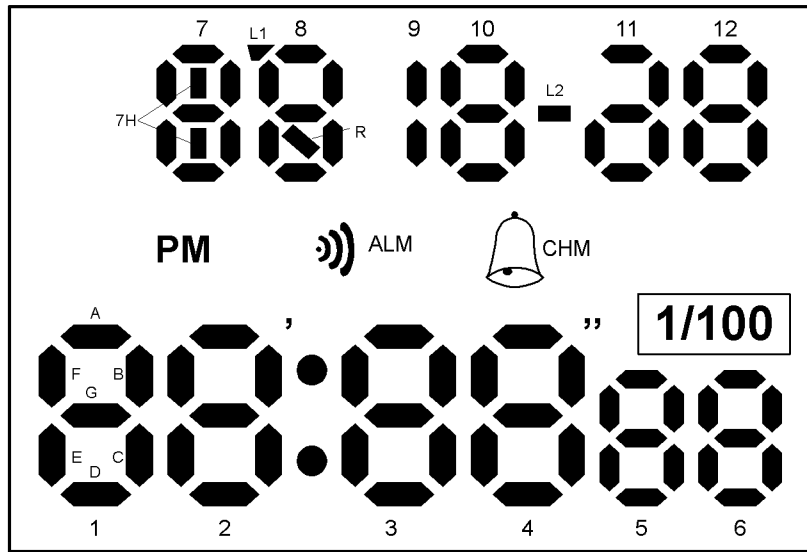
**特點**

- ◆ 單芯片 CMOS 結構
- ◆ 低功耗
- ◆ 3.0V 電池工作
- ◆ 12 位電子錶
- ◆ 可顯示月、日、時、分、秒、星期
- ◆ 可選 12 / 24 小時制
- ◆ 60 秒響鬧、整點響鬧功能
- ◆ 4 年日曆
- ◆ 8 位秒錶計時
- ◆ 32768 Hz 晶振
- ◆ 內置 EL 背光驅動
- ◆ 開關輸入防彈跳
- ◆ 有按鍵音
- ◆ 4 鍵操作
- ◆ 帶靜電保護

**ELECTRICAL CHARACTERISTICS 電特性**

Characteristics		Sym	Min	Typ	Max	Unit	Remarks
Operating Voltage	工作電壓	V <sub>DD</sub>	2.4	3.0	3.6	V	-
Supply Current	供應電流	I <sub>DD</sub>	-	1.2	2.5	uA	No Load
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	-
Oscillator Start Voltage	起振電壓	V <sub>OSC</sub>			1.45	V	
Oscillator Stop Voltage	停振電壓	V <sub>OSP</sub>			1.15	V	
Oscillation Frequency	振蕩頻率	F <sub>OSC</sub>	-	32768	-	Hz	-
Oscillation Input Capacitor		C <sub>IN</sub>		25		pF	
Oscillation Output Capacitor		C <sub>OUT</sub>		25		pF	
Time Stability	時間穩定度	T <sub>STB</sub>	-	1	3	ppm	V <sub>SS1</sub> =1.3~1.7V
Switch Debouncing Time		T <sub>DEB</sub>			31.25	mSec	

LCD Format



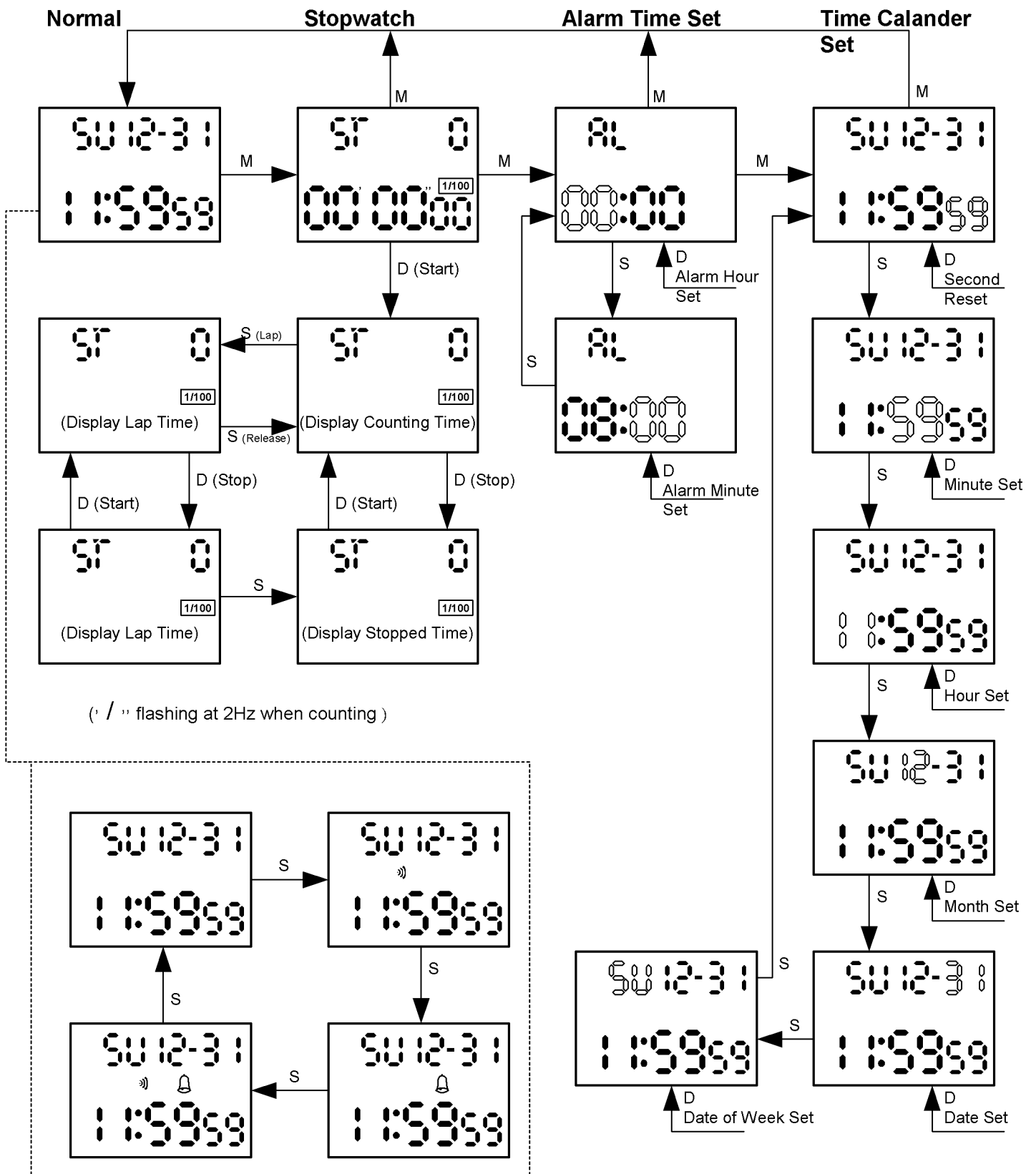
(3.0V<sub>LCD</sub>, 1/3 Duty, 1/2 Bias)

	COM1	COM2	COM3
SEG1	F1	E1	AD1
SEG2	B1	G1	C1
SEG3	F2	E2	D2
SEG4	A2	G2	C2
SEG5	B2	COL1	E3
SEG6	F3	G3	AD3
SEG7	B3	C3	E4
SEG8	F4	G4	D4
SEG9	A4	B4	C4
SEG10	F5	E5	D5
SEG11	A5	G5	C5
SEG12	B5	F6	E6
SEG13	A6	G6	D6
SEG14	D12	B6	C6

	COM1	COM2	COM3
SEG15	C12	G12	B12
SEG16	E12	F12	A12
SEG17	D10	C11	B11
SEG18	C10	E11	ADG11
SEG19	L2	B10	A10
SEG20	E10	G10	F10
SEG21	D8	C8	BC9
SEG22	R8	G8	B8
SEG23	’,”,1/100	EF8	A8
SEG24	D7	C7	L1
SEG25	G7	B7	A7
SEG26	E7	H7	F7
SEG27	CHM	PM	ALM



### Setting Sequential and Switch Operation

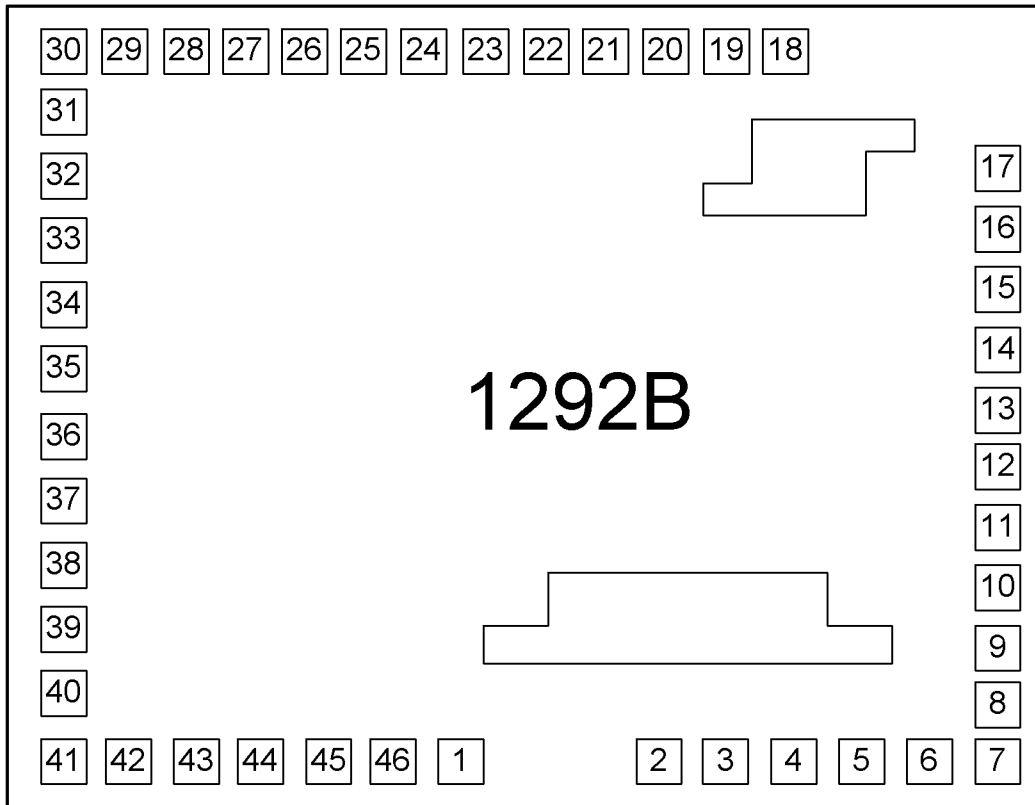


註：1. 同時按“M”、“S”及“D”鍵，LCD 字段全顯  
 2. 調較小時位時選 12 / 24 小時模式



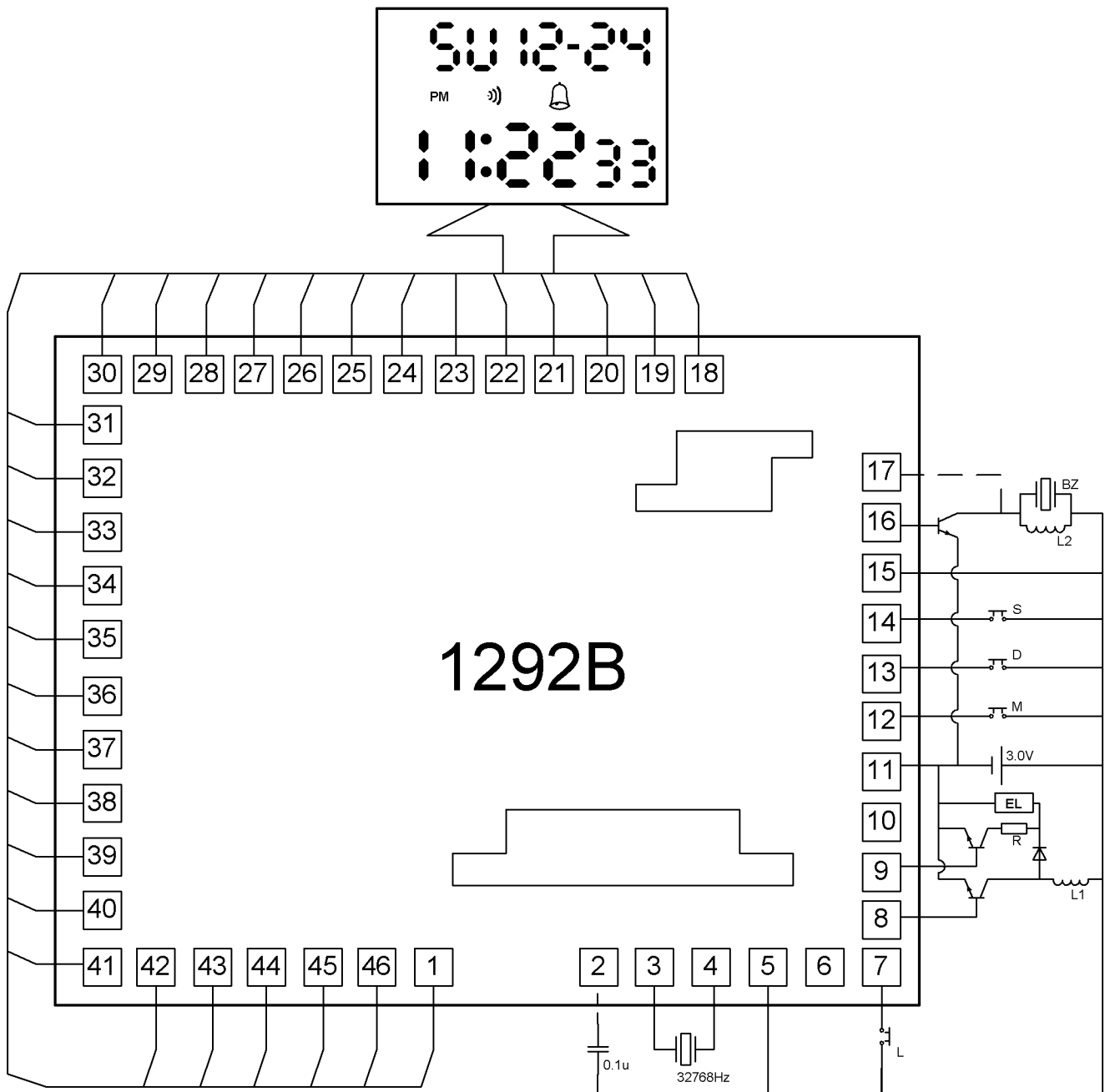
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**Pad Diagram and Location**



PAD NO.	PAD name	PAD NO.	PAD name	PAD NO.	PAD name	PAD NO.	PAD name	PAD NO.	PAD name
1	COM1	11	VSS	21	SEG3	31	SEG13	41	SEG23
2	GND	12	M	22	SEG4	32	SEG14	42	SEG24
3	XO	13	D	23	SEG5	33	SEG15	43	SEG25
4	XI	14	S	24	SEG6	34	SEG16	44	SEG26
5	VDD1	15	VDD	25	SEG7	35	SEG17	45	SEG27
6	AC	16	ALA	26	SEG8	36	SEG18	46	COM2
7	L	17	ALB	27	SEG9	37	SEG19		
8	IND	18	COM3	28	SEG10	38	SEG20		
9	DIS	19	SEG1	29	SEG11	39	SEG21		
10	T3	20	SEG2	30	SEG12	40	SEG22		

**Application Circuit**



註：1. IC 底部接 VDD

2. L1：1.8~2.0mH / 17~12ohm，根據冷光片之電容值選擇；R：10kohm

3. L2：約 15~30mH

4. VDD Pad：只需在 Pad 5 及 Pad 15 選接 1 個

5. PAD17 為內置三極管聲音輸出口

6. PAD2 內置電容，如對時間精度要求不高，可省掉外置 0.1uF 穩壓電容。



## PAD 坐标

	PAD 名称	PAD 坐标		PAD 名称	PAD 坐标
1	AC	224,1473	24	SEG11	1746,76
2	VDD	350,1473	25	SEG10	1632,76
3	XI	476,1473	26	SEG9	1520,76
4	XO	602,1473	27	SEG8	1407,76
5	GND	728,1473	28	SEG7	1295,76
6	COM1	1106,1473	29	SEG6	1182,76
7	COM2	1232,1473	30	SEG5	1069,76
8	SEG27	1358,1473	31	SEG4	957,76
9	SEG26	1484,1473	32	SEG3	844,76
10	SEG25	1610,1473	33	SEG2	732,76
11	SEG24	1736,1473	34	SEG1	619,76
12	SEG23	1867,1473	35	COM3	507,76
13	SEG22	1867,1342	36	ALB	73,286
14	SEG21	1867,1216	37	ALA	73,424
15	SEG20	1867,1090	38	VDD	73,536
16	SEG19	1867,964	39	S	73,681
17	SEG18	1867,838	40	D	73,794
18	SEG17	1867,712	41	M	73,906
19	SEG16	1867,586	42	GND	73,1019
20	SEG15	1867,460	43	T3	73,1123
21	SEG14	1867,334	44	DIS	73,1228
22	SEG13	1867,208	45	IND	73,1340
23	SEG12	1864,79	46	L	73,1473

\*坐标以 IC 左下角为原点, PAD 位置及顺序对应后面应用图;

\*IC 尺寸为 1940um X 1550um。