

## DESCRIPTION

SUNSTAR 单片机专用电路 <http://www.icasic.com/> TEL: 0755-83387030 FAX: 0755-83376182 E-MAIL: szss20@163.com  
is a CMOS 5-function watch integrated circuit that provides to drive a 5.5 digit triplexes liquid crystal display with colon and PM mark.

## FUNCTION

- 5 function : Month, Date, Hour, Minute, Second
- Selectable display for hour, minute, second / month, date
- 12-Hour format
- 4-year calendar
- One-touch correction of time error within 30 seconds
- 2 switch sequential operation
- LCD test

## FEATURE

- Single-chip CMOS construction
- Low power dissipation
- Single 1.5V battery operation
- Drive 5.5-Digit LCD
- Colon and PM Display
- 32768 Hz crystal frequency
- Built-in crystal oscillator input capacitor
- Trimmer capacitor included
- Protection against static discharge

## 功能

- 五種功能：月、日、時、分、秒
- 可選擇時間或日期顯示
- 12 小時模式
- 4 年日曆
- 按鍵一次校正 30 秒內誤差
- 2 鍵操作
- LCD 測試

## 特點

- 單芯片 CMOS 結構
- 低功耗
- 1.5V 電池工作
- 5.5 位 LCD 顯示
- 冒號及下午標誌顯示
- 32768 晶振頻率
- 內置晶振輸入電容
- 內置微調電容
- 輸入靜電保護

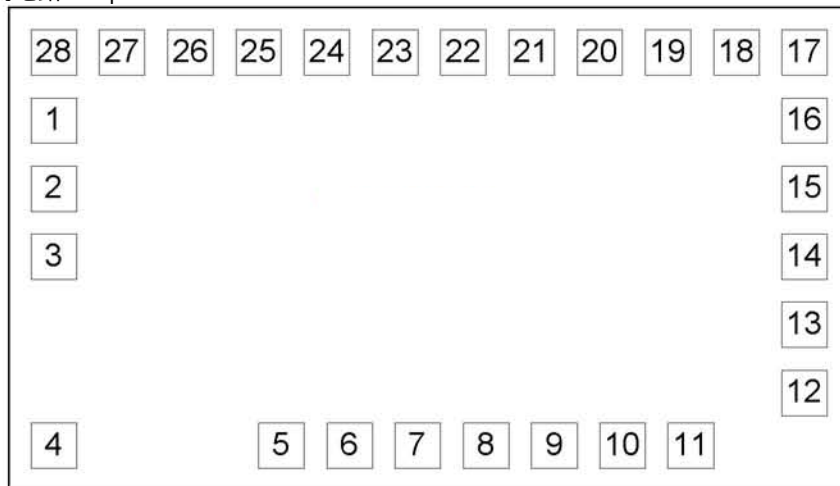
## ELECTRICAL CHARACTERISTICS 電特性

( $T_a = 25^{\circ}\text{C}$ ,  $V_{SS}=0\text{V}$ ,  $V_{DD}=1.5\text{V}$ , UNLESS OTHERWISE SPECIFIED)

Characteristic		Symbol	Test Conditions	Min	Type	Max	Unit
Operating Voltage 1	工作電壓 1	$V_{DD}$		1.2	1.5	2.0	V
Operating Voltage 2	工作電壓 2	$V_{SS2}$		-1.2	-1.5	-2.0	V
Quiescent Current	靜態電流	$I_{SB}$	Without Load	–	0.8	1.5	uA
Operating Current	工作電流	$I_{OP}$		–	–	9.0	uA
Input Low Voltage	輸入低電壓	$V_{IL}$		$V_{SS}$	–	$V_{SS}+0.3$	V
Input High Voltage	輸入高電壓	$V_{IH}$		$V_{DD}-0.3$	–	$V_{DD}$	V
Oscillator Start Voltage	起振電壓	$V_{OST}$	Within 5 sec	–	–	1.45	V
Oscillator Stop Voltage	停振電壓	$V_{OSP}$		–	–	1.15	V
Oscillator Input Capacitor	振蕩輸入電容	CI		–	20	–	pF
Oscillator Output Capacitor	振蕩輸出電容	CO		–	20	–	pF
Oscillator Frequency	振蕩頻率	$F_{OSC}$		–	32,786	–	Hz
LCD Frequency	LCD 頻率	$F_D$		–	32	–	Hz
Switch Debouncing Time	開關動作時間	$T_D$		–	–	62.5	ms

# APPLICATION INFORMATION 應用資料

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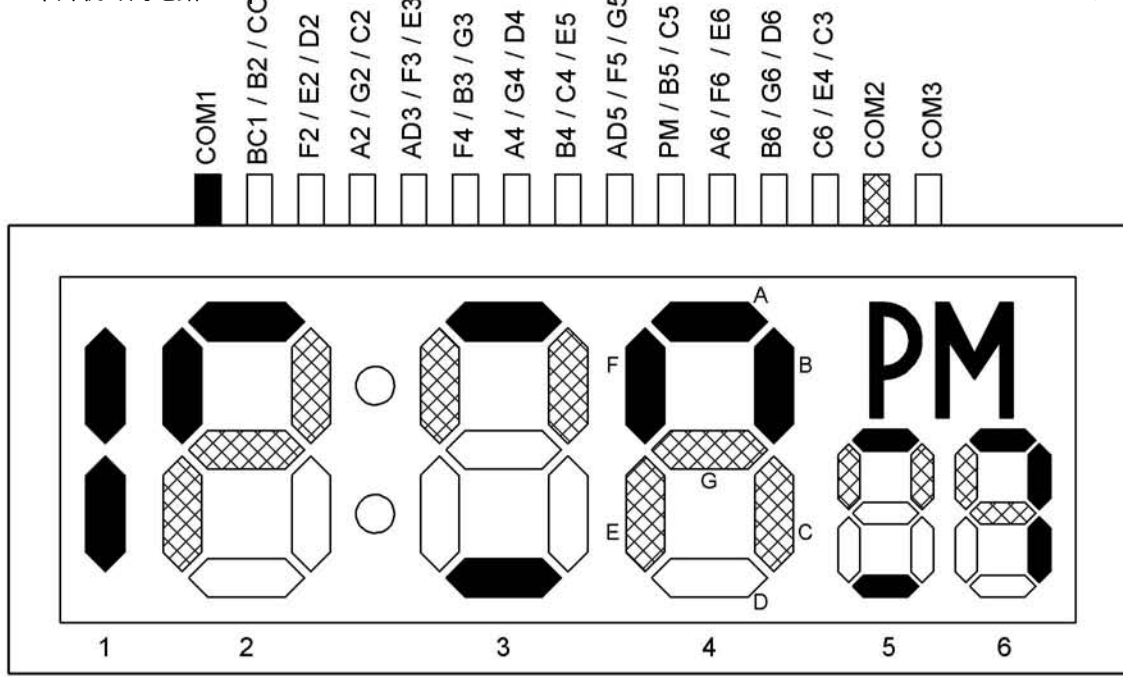
註：IC 面積 1.62 x 1.00 (mm)  
IC 底部接 VDD

Pad No	Name	X	Y
1	COM1	75	714
2	OSCO	75	572
3	OSCI	75	432
4	T1	75	75
5	CAP1	563	75
6	CAP2	704	75
7	VSS1	844	75
8	T2	984	75
9	T3	1123	75
10	VDD	1264	75
11	D	1404	75
12	S	1544	155
13	VSS2	1544	295
14	VSS1	1544	436

Pad No	Name	X	Y
15	COM3	1544	575
16	COM2	1544	685
17	C6 / E4 / C3	1544	865
18	B6 / G6 / D6	1407	865
19	A6 / F6 / E6	1275	865
20	PM / B5 / C5	1141	865
21	AD5 / F5 / G5	1008	865
22	B4 / C4 / E5	876	865
23	A4 / G4 / D4	743	865
24	F4 / B3 / G3	609	865
25	AD3 / F3 / E3	476	865
26	A2 / G2 / C2	344	865
27	F2 / E2 / D2	211	865
28	BC1 / B2 / COL	75	865

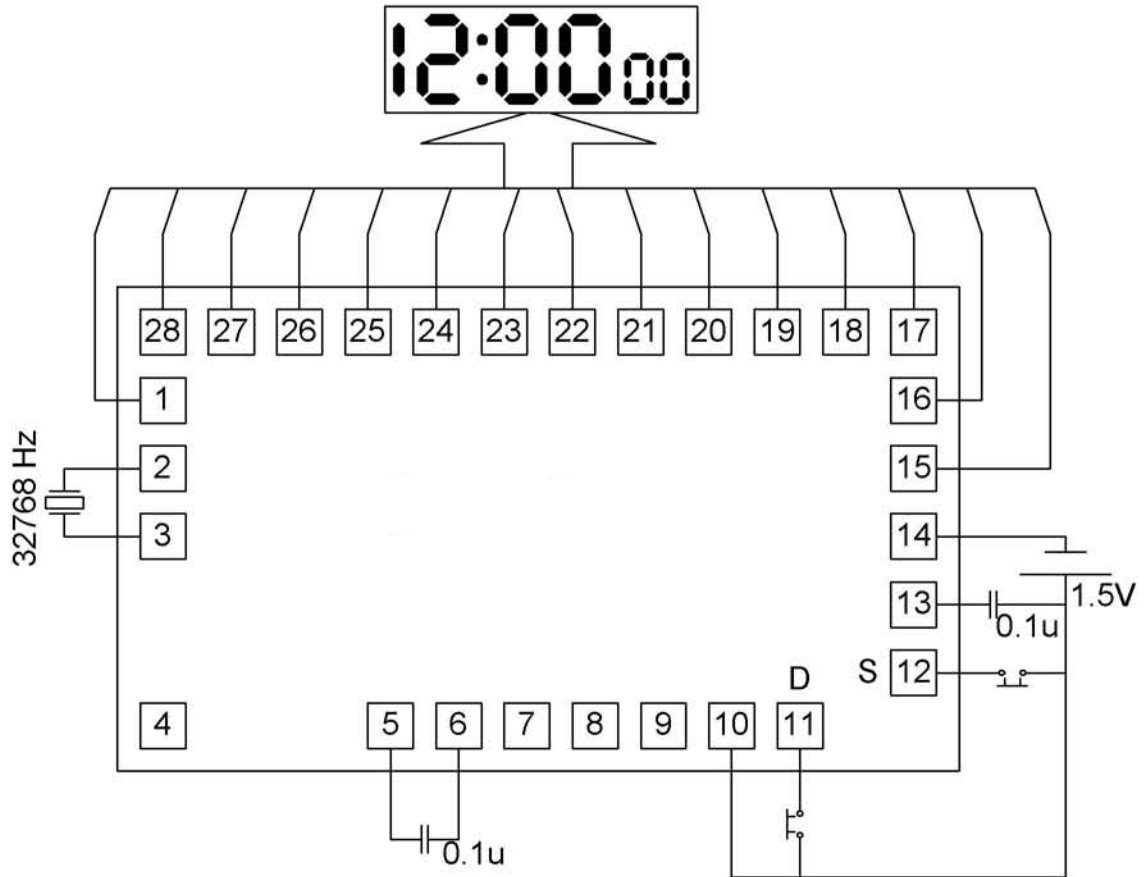
# LCD 字形顯示

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## APPLICATION DIAGRAM

## 參考電路圖



註：IC 底部接 VDD

# 按鍵操作

