

# 深圳市丽晶微电子科技有限公司

## SHEN ZHEN ELITE CHIP MICROCUIT CO.,LTD

### F18F-77FB 循环定时植物灯

1. 输入电压 DC12V 输出 DC12V，一个拨动开关控制输入电源。
2. 一路 LED 输出，常亮，电流 1.25A，用 MOS 管推动。
3. 上电工作，三档开关控制工作模式。 **18H--24H--12H**。  
 当 **18H** 脚接通 GND，18H 工作 6H 停，循环定时。  
 当 **12H** 脚接通 GND，12H 工作 12H 停，循环定时。  
 当两脚悬空，24 小时工作。
4. 计时外接 32.768KHZ 晶体，上电检测，无晶振，输出 1Hz 闪烁。

#### 5. 极限参数

##### ABSOLUTE MAXIMUM RATING

Supply voltage (Vdd) .....	- 0.3V ~ 6.0V
Input in voltage (Vin) .....	Vss - 0.2V ~ Vdd + 0.2V
Operating ambient temperature (Topr)	
EC2501DS, .....	-20°C ~ + 85°C
Storage ambient temperature (Tstor) .....	- 40°C ~ + 125°C

#### 6. 电气参数

(All of voltages refer to Vss, Vdd = 5.0V, Fosc = 4MHz, Fcpu=1MHz, ambient temperature is 25°C unless otherwise note.)

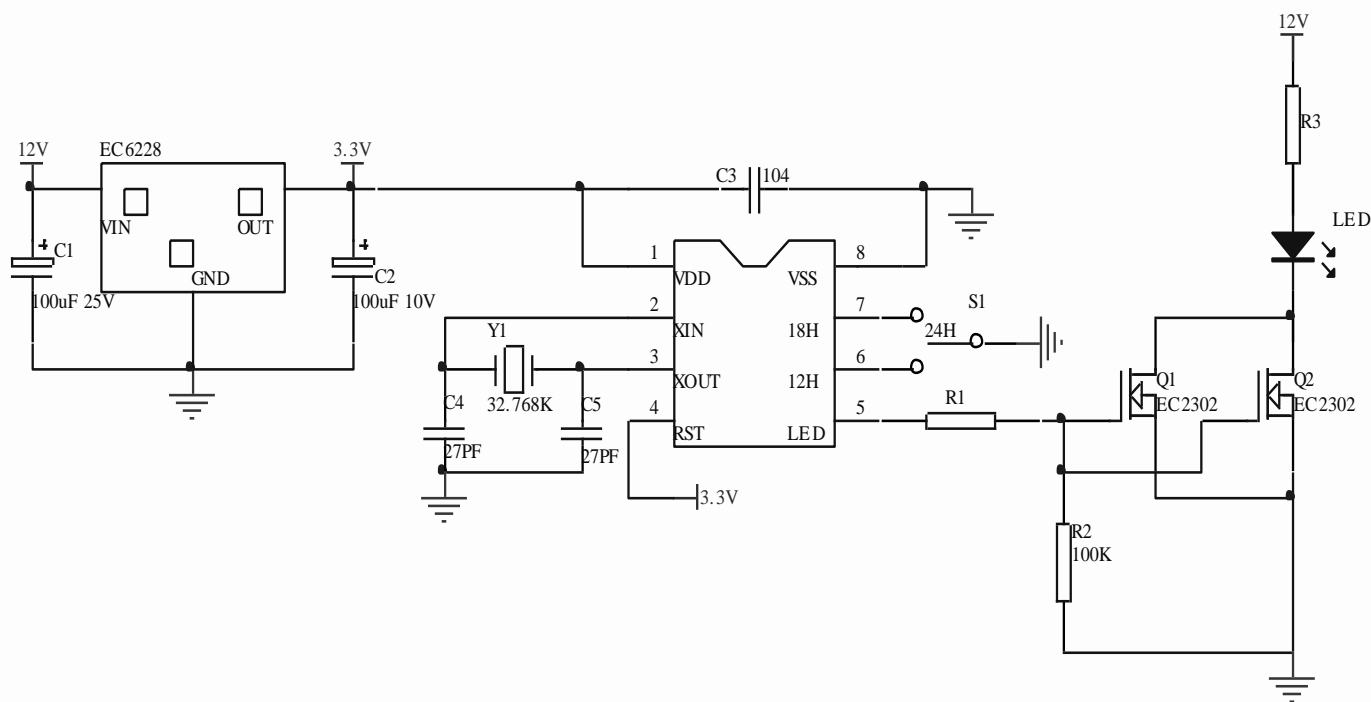
PARAMETER	SYM.	DESCRIPTION	MIN.	TYP.	MAX.	UNIT	
Operating voltage	Vdd	Normal mode, Vpp = Vdd, 25°C, Fcpu = 1MHz	2.2	-	5.5	V	
RAM Data Retention voltage	Vdr		1.5	-	-	V	
*Vdd rise rate	Vpor	Vdd rise rate to ensure internal power-on reset	0.05	-	-	V/ms	
Input Low Voltage	ViL1	All input ports	Vss	-	0.3Vdd	V	
	ViL2	Reset pin	Vss	-	0.2Vdd	V	
Input High Voltage	ViH1	All input ports	0.7Vdd	-	Vdd	V	
	ViH2	Reset pin	0.8Vdd	-	Vdd	V	
Reset pin leakage current	Ilekg	Vin = Vdd, 25°C	-	-	2	uA	
I/O port input leakage current	Ilekg	Pull-up resistor disable, Vin = Vdd	-	-	2	uA	
I/O port pull-up resistor	Rup	Vin = Vss, Vdd = 3V	100	200	300	KΩ	
		Vin = Vss, Vdd = 5V	50	100	180		
I/O output source current sink current	IoH	Vop = Vdd - 0.5V	8	15	-	mA	
	IoL	Vop = Vss + 0.5V	8	15	-		
*INTn trigger pulse width	Tint0	INT0 interrupt request pulse width	2/fcpu	-	-	cycle	
Supply Current	Idd1	Run Mode (No loading, Fcpu = Fosc/4)	Vdd= 5V, 4Mhz	-	3	5	mA
		Vdd= 3V, 4Mhz	-	1.5	2	mA	
	Idd2	Slow Mode (Internal low RC, Stop high clock)	Vdd=5V, ILRC 32Khz	-	20	40	uA
			Vdd=3V, ILRC 16Khz	-	5	10	uA
	Idd3	Sleep Mode	Vdd= 5V, 25°C	-	0.8	1.6	uA
			Vdd= 3V, 25°C	-	0.7	1.4	uA
Idd4	Green Mode (No loading, Fcpu = Fosc/4, Watchdog Disable)	Vdd= 5V, 4Mhz	-	0.6	1.2	mA	
		Vdd= 3V, 4Mhz	-	0.25	0.5	mA	
		Vdd=5V, ILRC 32Khz Vdd=3V, ILRC 16Khz	-	15	30	uA	
Internal High Oscillator Freq.	Fihrc	Internal High RC (IHRC) 25°C, Vdd= 5V,Fcpu = 1MHz	15.68	16	16.32	Mhz	
LVD Voltage	Vdet0	Low voltage reset level, -20°C ~ + 85°C	1.6	2.0	2.2	V	
	Vdet1	Low voltage reset/indicator level. Fcpu = 1 MHz, -20°C ~ + 85°C	1.8	2.4	3	V	
	Vdet2	Low voltage reset/indicator level. Fcpu = 1 MHz, -20°C ~ + 85°C	2.5	3.6	4.5	V	
External oscillator (32KHz) match capacitor	C32K	Capacitor selection for crystal oscillator in 32KHz	20	27	33	pF	

“.” These parameters are for design reference, not tested.

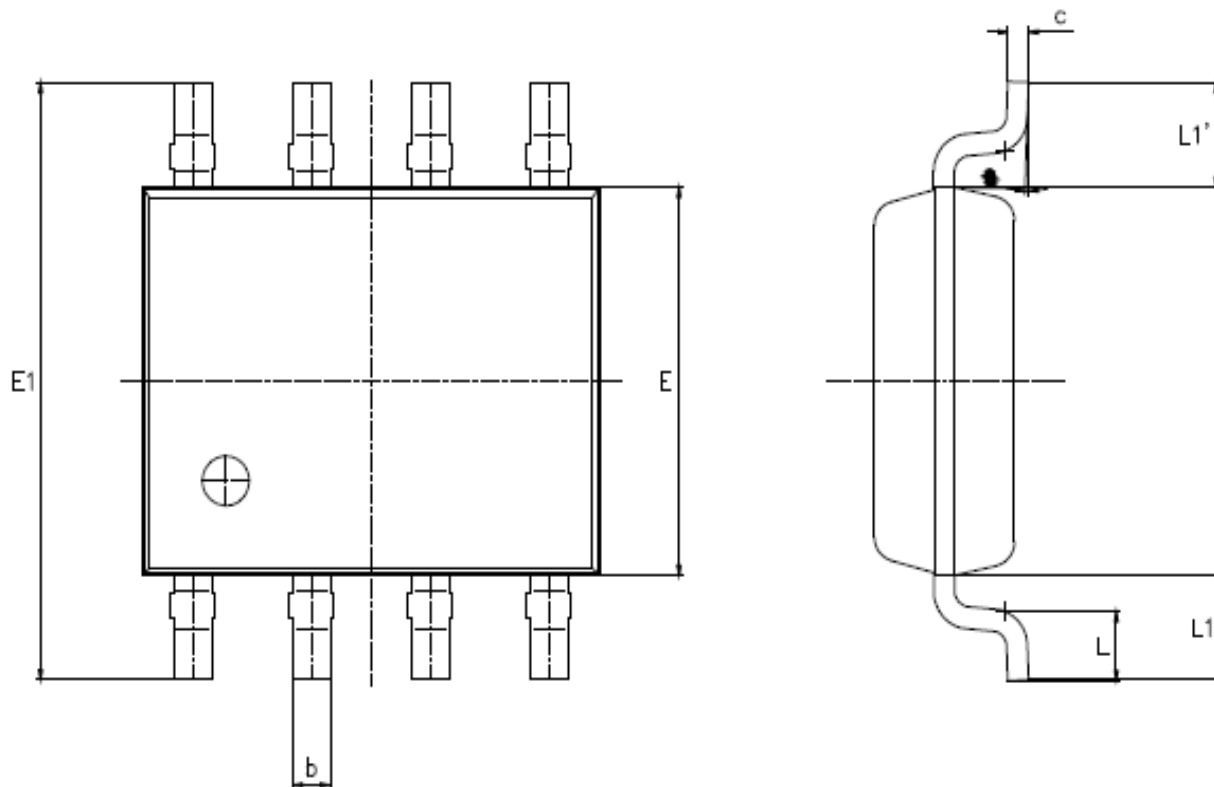
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## 7. 参考电路图:

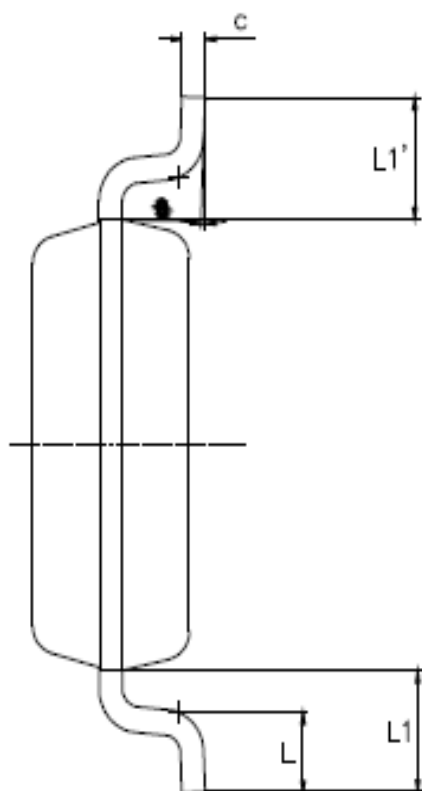


## 8. 芯片封装尺寸图:



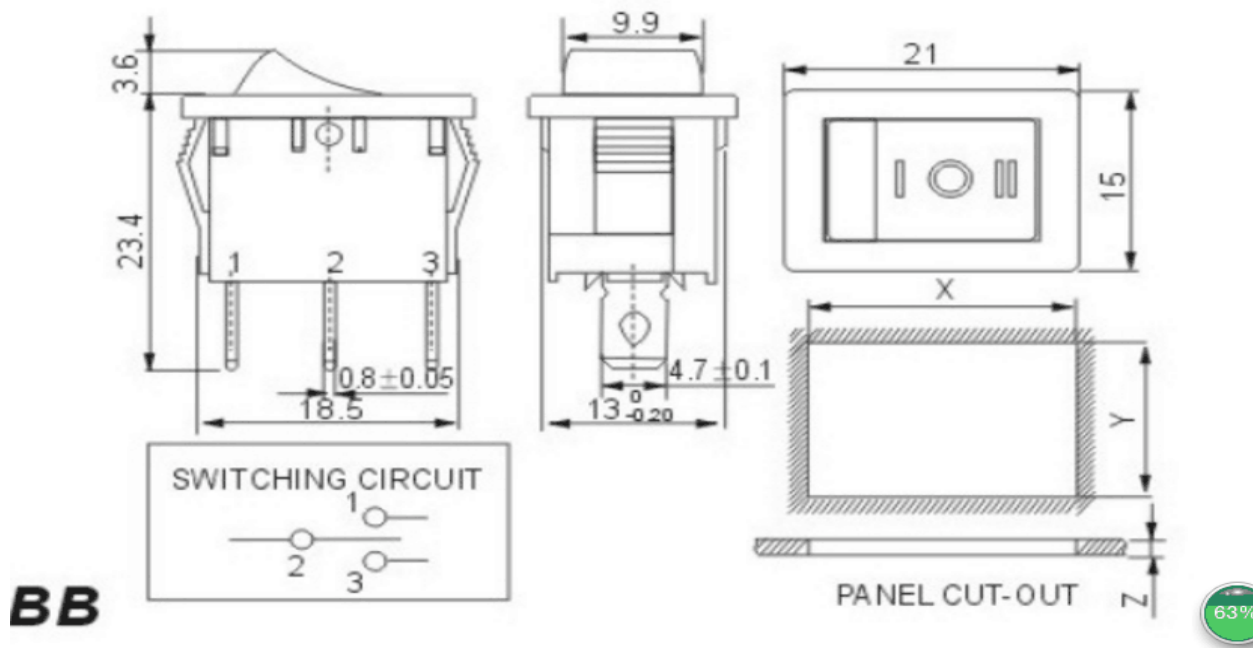
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Symbol	Dimensions in millimeters		Dimensions in inches	
	min	max	min	max
A	1.4000	1.7000	0.0550	0.0670
A1	0.0500	0.1500	0.0020	0.0060
A2	1.3500	1.5500	0.0530	0.0610
b	0.3060	0.5060	0.0150	0.0170
c	0.1700	0.2500	0.0070	0.0100
D	4.7000	5.1000	0.1850	0.2000
E	3.8750	3.9250	0.1530	0.1550
E1	5.8000	6.2000	0.2280	0.2440
e	1.2700±0.13		0.0500±0.005	
L	0.6150	0.7650	0.0240	0.0300
L1	1.0250±0.2		0.0404±0.007	
L1-L1'	-	0.12	-	0.005
$\theta$	0°	8°	0°	8°

## 9. 船形开关规格:



2018-05-16