



一華半導體股份有限公司
MOSDESIGN SEMICONDUCTOR CORP.

TAIPEI : TEL : 886-2- 22783733

FAX : 886-2- 22783633

H.K. : TEL : 852- 27569109

FAX : 852- 27566961

1 OR 2 KEY

ON/OFF & PAUSE

RGB LED IC

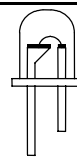
单键 OR 两键

ON/OFF , 暂停

三色灯 LED IC

LED FLASH

M1351



FEATURES 功能叙述

- Built-in oscillator, adjustable oscillator frequency via external R,C.
- ON/OFF: ON/OFF trigger.
- PAUSE: Pause the color and brightness.
- TRIG: ON/OFF & PAUSE trigger, Push switch $\geq 2\text{sec}$ power off.
- S1,S2: 4 section pattern select.
- OPT: " OPEN " = Sink output, " VSS " = Source output.
- DIP,SOP Package 16, 8 pin & 3 pin LED Lamp easy for use.

Section	Suffix	Function	S1	S2
1	M1351X- C1	1/2 Phase.	X	X
2	M1351X- C2	七彩主色变化	VDD	X
3	M1351X- C3	七彩变化	X	VDD
4	M1351X- C4	七彩交错渐明渐暗	VDD	VDD

* Suffix "X" = N $\rightarrow$ Sink output

= P $\rightarrow$ Source output

APPLICATION 产品应用

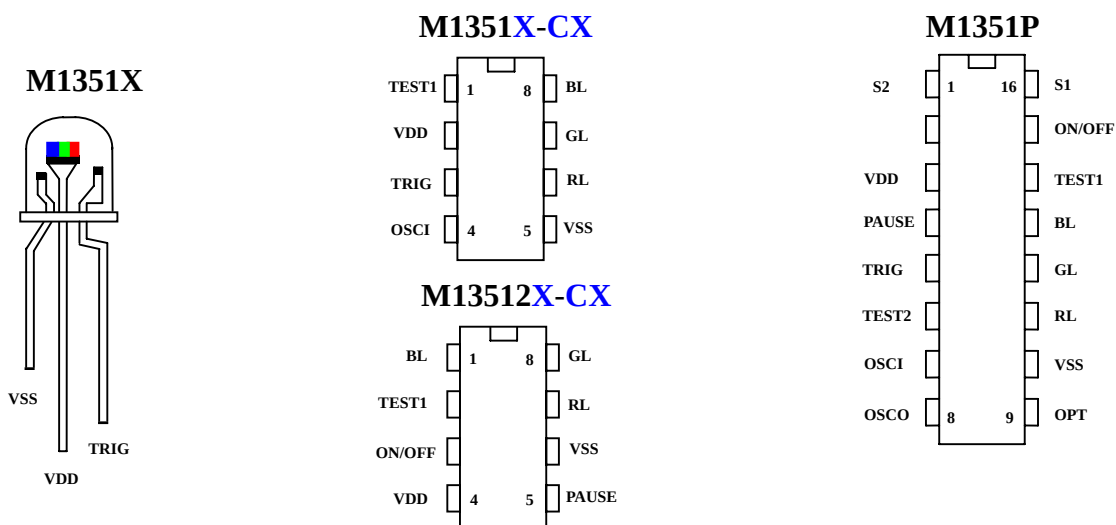
- Blinking LED, Function indicator, R.G.B Mix etc..

ELECTRICAL CHARACTERISTICS 电气规格

(@V_{DD}=4.5V unless otherwise specified)

Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
工作电压 Operating Voltage	V _{DD}	3.6	4.5	5.0	V	
工作电流 Operating Current	I _{OP}	—	0.1	0.5	mA	No load
静态电流 Quiescent Current	I _{SB}	—	1	5	μA	
推动电流 Driving Current	I _{OL}	20	—	—	mA	@V _{DS} = 1.2 V
振荡频率 Oscillator Frequency	F _{osc}	—	128	—	KHz	$\pm 30\%$ TOL.
工作温度 Operating Temperature	Temp.	-10	25	70	$^{\circ}\text{C}$	

APPLICATION DIAGRAM 参考电路图



Suffix **X**—N =Sink output , P= Source output

Suffix **CX**—C1=1/2 Phase , C2=七彩主色变化

C3=七彩变化, C4=七彩交错渐明渐暗



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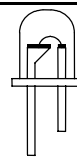
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1 OR 2 KEY
ON/OFF & PAUSE
RGB LED IC

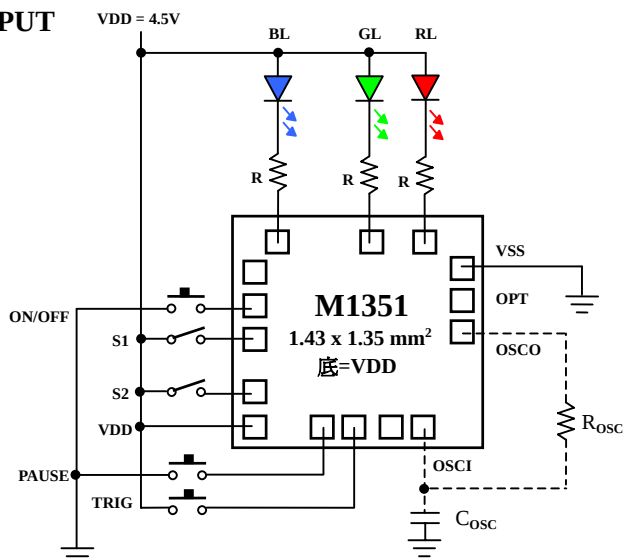
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(A) SINK OUTPUT



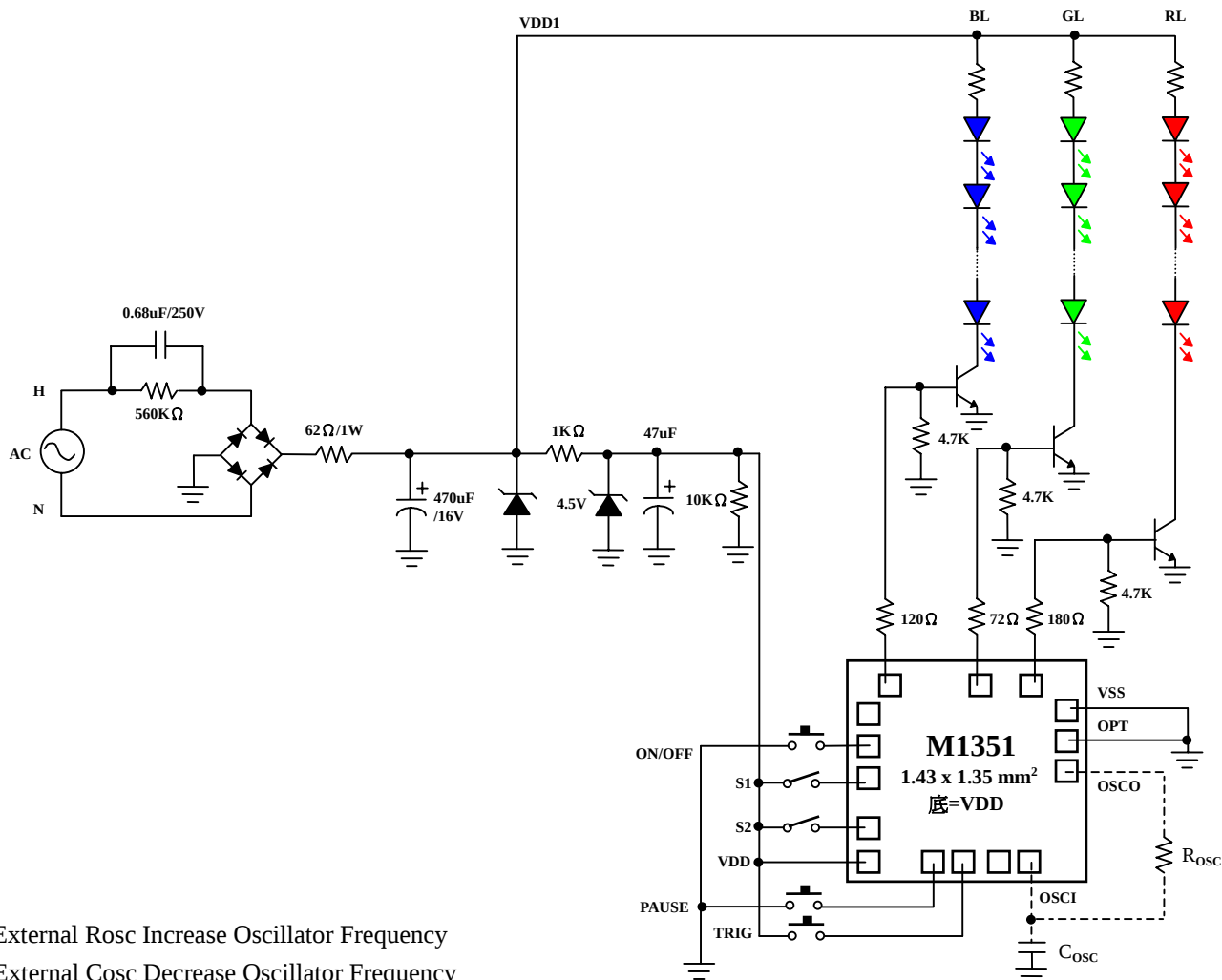
SECTION 1 R、C 调整表

@VDD=4.5V

R (K Ω)	TIME (Sec.)	C (pF)	TIME (Sec.)
20	3	1	28
47	6	82	42
68	8	180	49
120	10	330	53
240	14	500	57
470	20	680	62
910	25		

* Typical : 28.2 Sec. $\pm$ 20%

(B) SOURCE OUTPUT



* External R_{osc} Increase Oscillator Frequency

* External C_{osc} Decrease Oscillator Frequency



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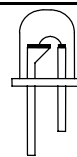
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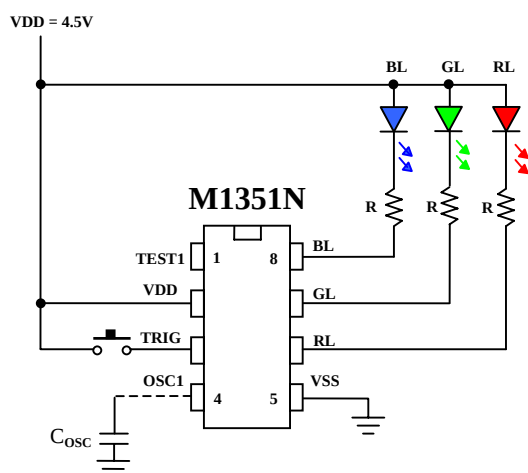
三色灯 LED IC

LED FLASH

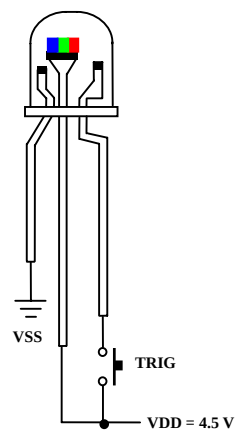
M1351



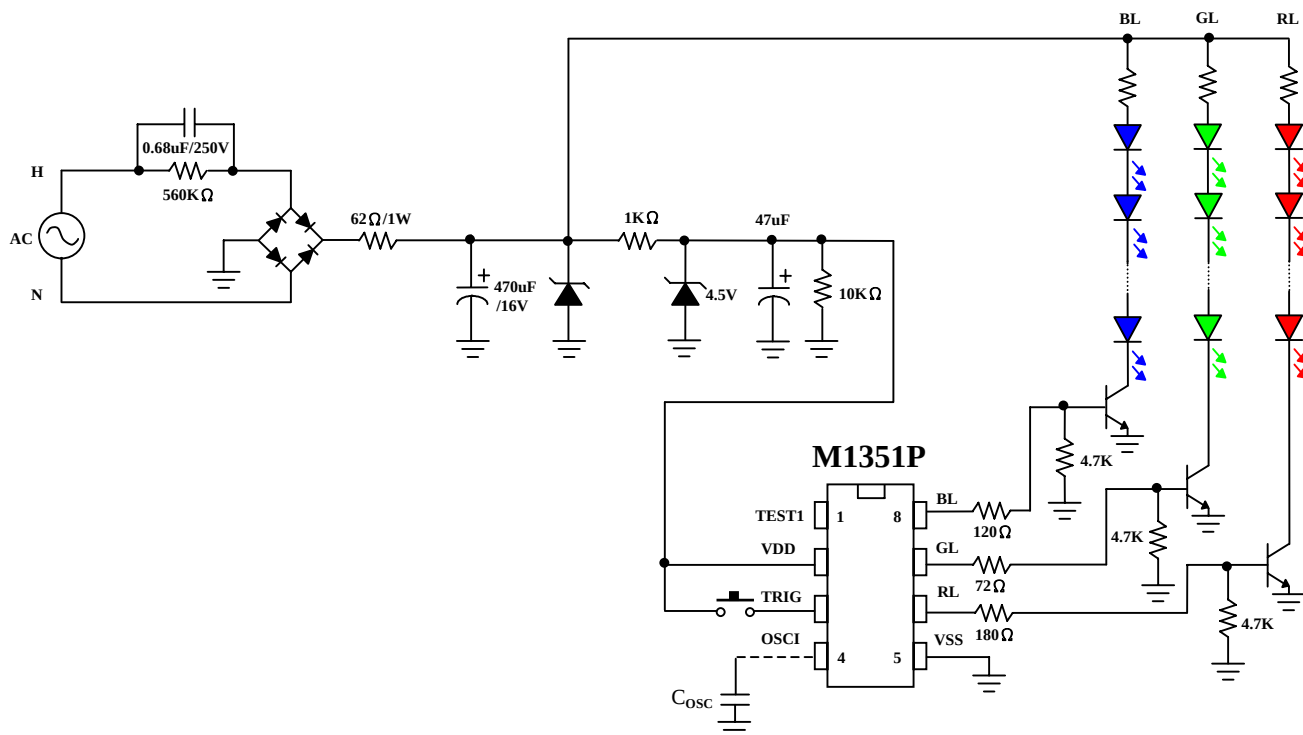
(C) SINK OUTPUT



M13511 ~ M13514



(D) SOURCE OUTPUT



* External Cosc Decrease Oscillator Frequency



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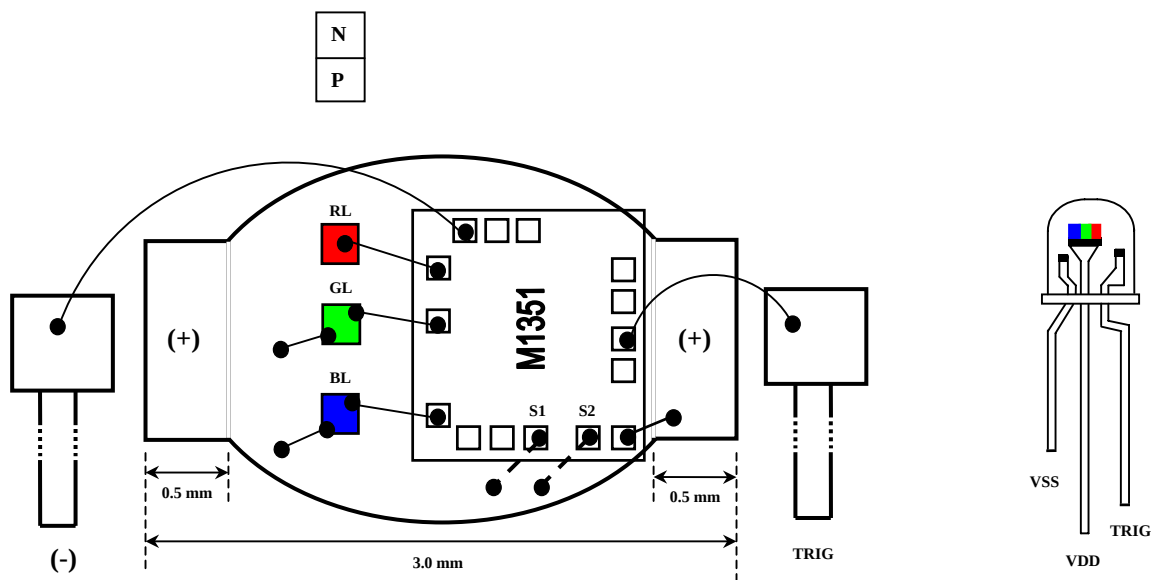
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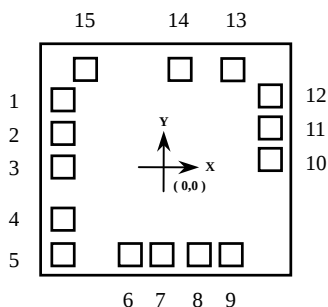
3 PIN LED LAMP BONDING DIAGRAM



Secio	LAMP--Suffix	S1	S2
1	M13511	X	X
2	M13512	VDD	X
3	M13513	X	VDD
4	M13514	VDD	VDD

PAD ASSIGNMENT & POSITION

UNIT : μm



No.	NAME	X	Y
1	TEST1	-594.40	320.50
2	ON/OFF	-589.40	138.50
3	S1	-589.40	-49.60
4	S2	-589.40	-356.60
5	VDD	-589.40	-552.00
6	PAUSE	-199.00	-552.00
7	TRIG	-12.00	-552.00
8	TEST2	198.30	-552.00
9	OSCI	385.30	-552.00
10	OSCO	589.40	-1.20
11	OPT	594.40	168.50
12	VSS	589.40	343.50
13	RL	369.30	494.70
14	GL	73.10	494.70
15	BL	-481.70	494.70

* CHIP SIZE $\sim 1.43 \times 1.35 \text{ mm}^2$

* IC substrate should be connected to VDD in PCB (PCB 上 IC 必须接 VDD)



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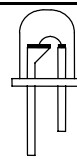
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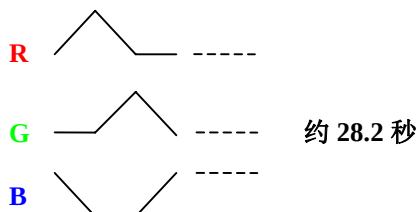
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M1351

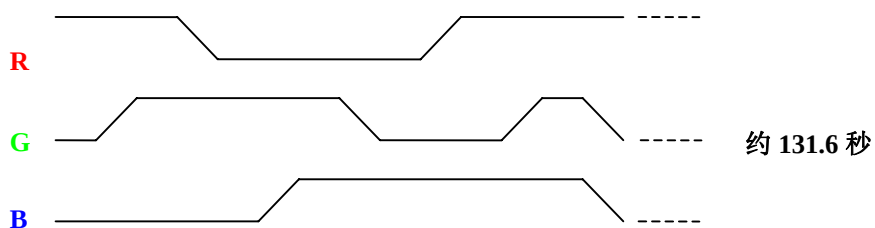


PATTERN (变化示意图)

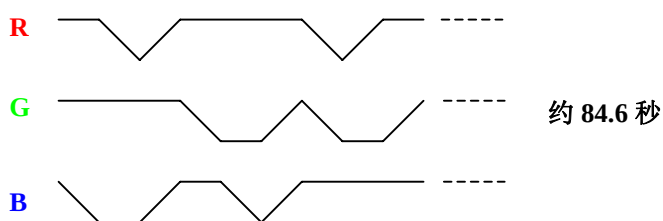
* SECTION 1 : 1/2 PHASE



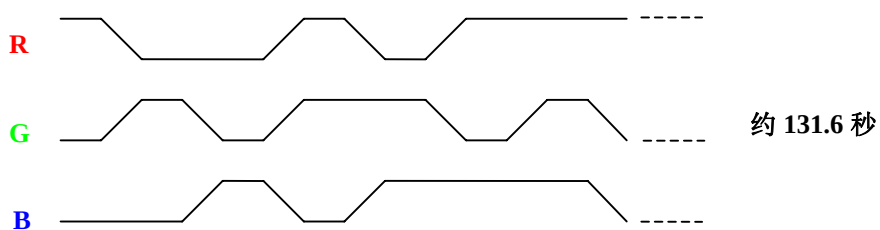
* SECTION 2 : 七彩主色变化



* SECTION 3 : 七彩变化



* SECTION 4 : 七彩交错渐明渐暗



*All specs and applications shown above subject to change without prior notice.

(以上电路及规格仅供参考,本公司得径行修正)