



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

單 鍵 OR 兩 鍵  
ON/OFF , 暫 停  
三 色 燈 LED IC

LED FLASH	
M1351	

### FEATURES 功能敘述

- 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  $\geq 2$ 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- <b>C1</b>	1/2 Phase.	X	X
2	M1351X- <b>C2</b>	七彩主色變化	VDD	X
3	M1351X- <b>C3</b>	七彩變化	X	VDD
4	M1351X- <b>C4</b>	七彩交錯漸明漸暗	VDD	VDD

\* Suffix “X” = N  $\rightarrow$  Sink output

= P  $\rightarrow$  Source output

### APPLICATION 產品應用

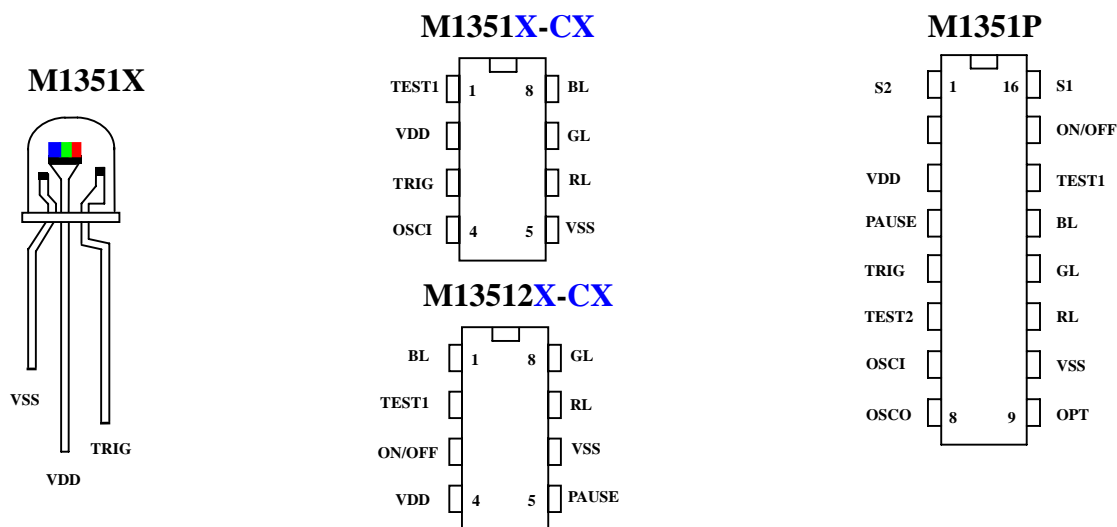
- Blinking LED, Function indicator, R.G.B Mix etc..

### ELECTRICAL CHARACTERISTICS 電氣規格

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

Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
工作電壓 Operating Voltage	$V_{DD}$	3.6	4.5	5.0	V	
工作電流 Operating Current	$I_{OP}$	—	0.1	0.5	mA	No load
靜態電流 Quiescent Current	$I_{SB}$	—	1	5	$\mu A$	
推動電流 Driving Current	$I_{OL}$	20	—	—	mA	@ $V_{DS} = 1.2 V$
振盪頻率 Oscillator Frequency	$F_{osc}$	—	128	—	KHz	$\pm 30\%$ TOL.
工作溫度 Operating Temperature	Temp.	-10	25	70	$^{\circ}C$	

### APPLICATION DIAGRAM 參考電路圖



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

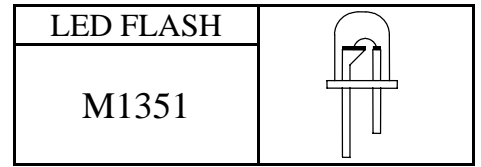
Suffix **CX**—C1=1/2 Phase , C2=七彩主色變化

C3=七彩變化 , C4=七彩交錯漸明漸暗

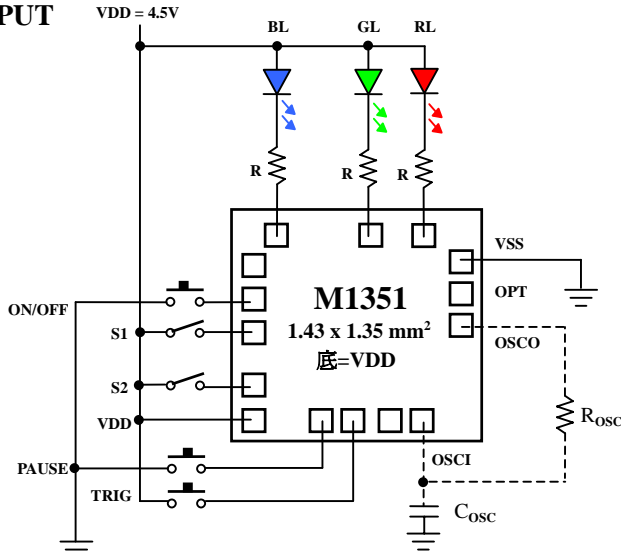


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(A) SINK OUTPUT

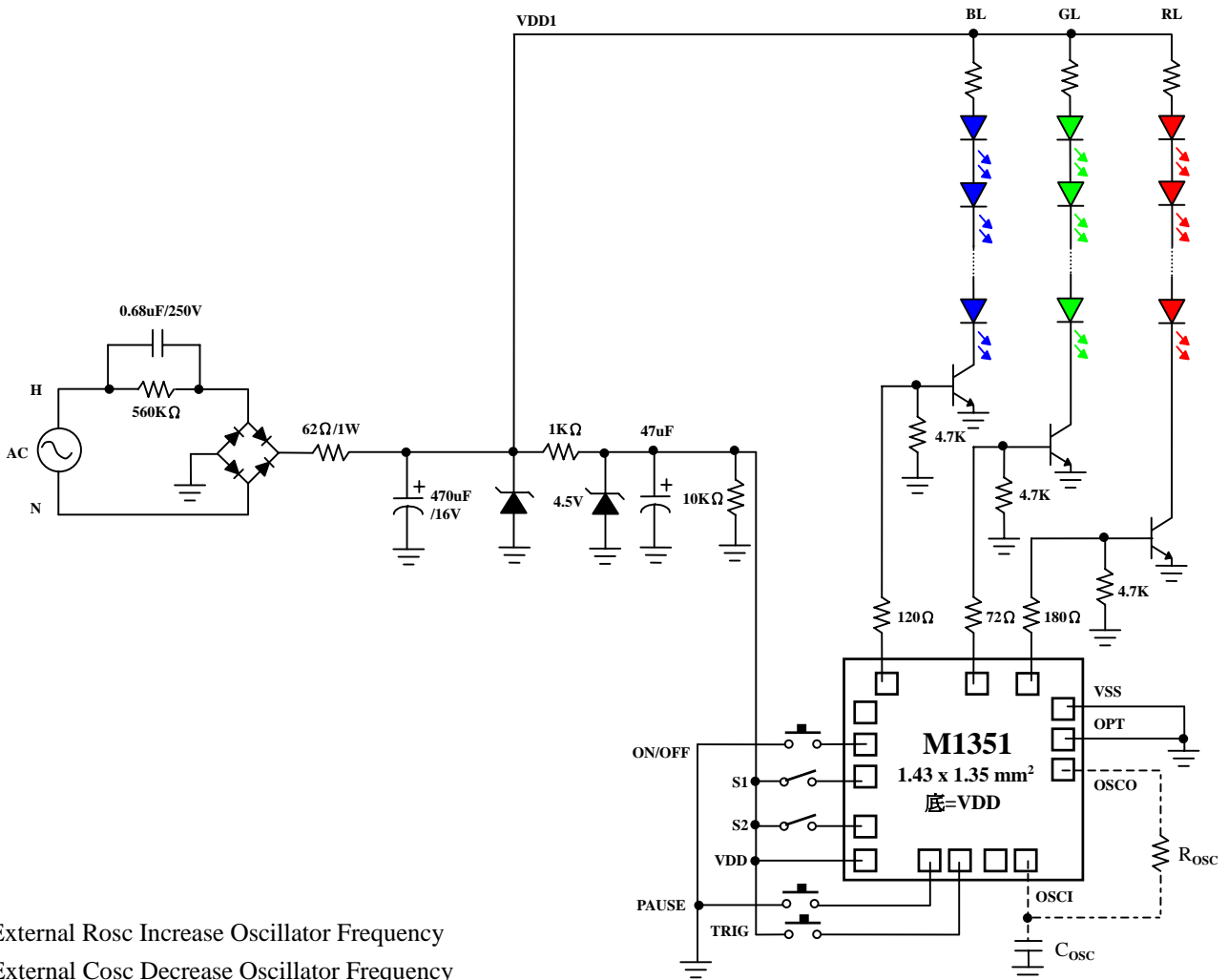


SECTION 1 R、C 調整表

@ VDD=4.5V			
R (KΩ)	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. ± 20%

(B) SOURCE OUTPUT



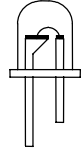
\* External R<sub>osc</sub> Increase Oscillator Frequency

\* External C<sub>osc</sub> Decrease Oscillator Frequency

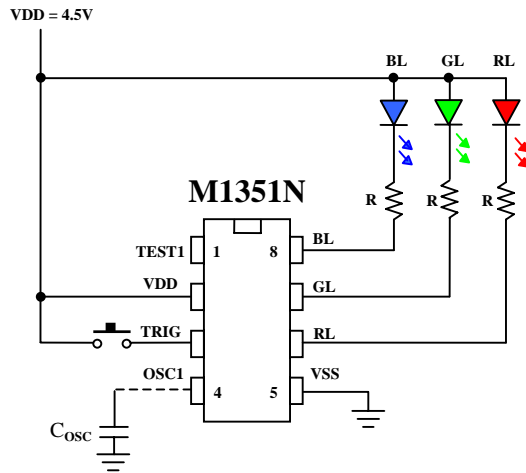


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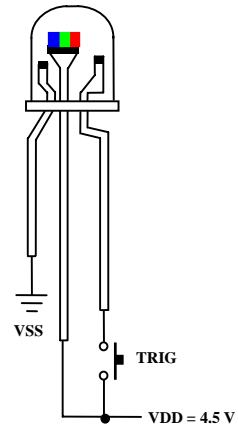
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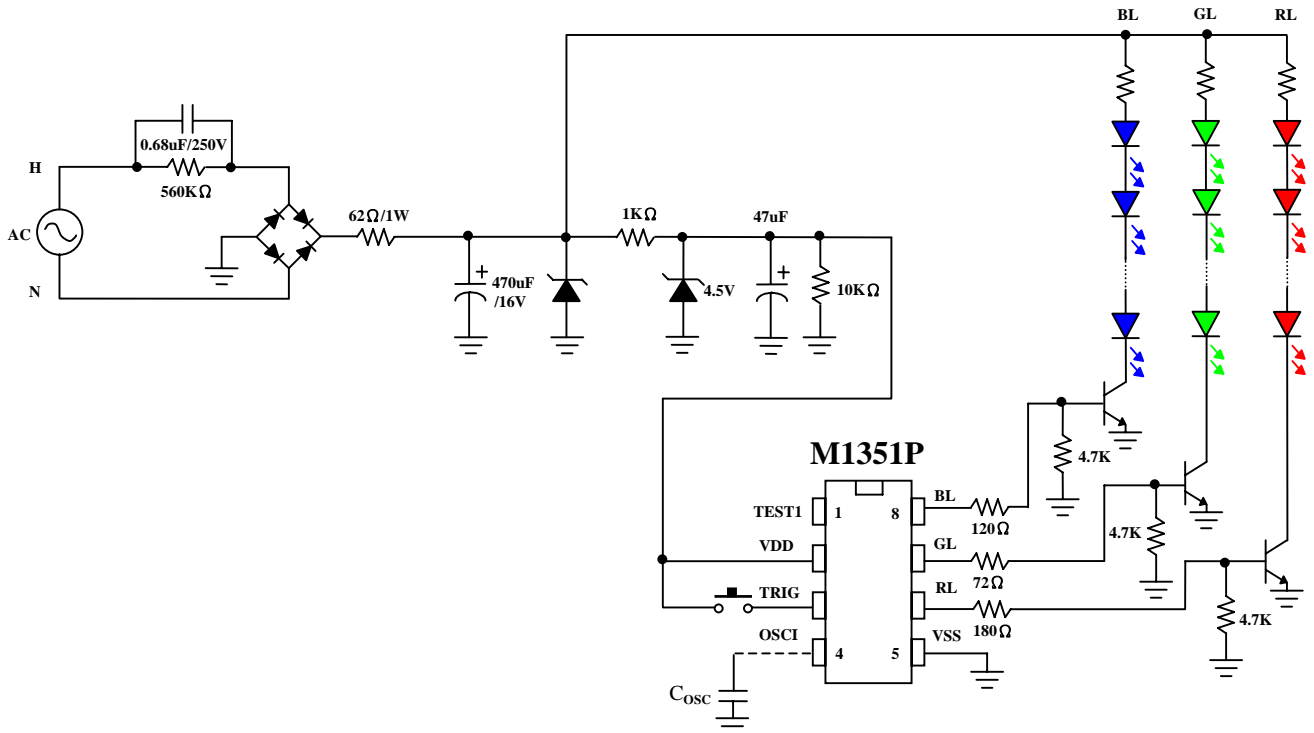
(C) SINK OUTPUT



M13511 ~ M13514



(D) SOURCE OUTPUT

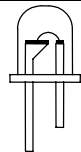


\* External Cosc Decrease Oscillator Frequency

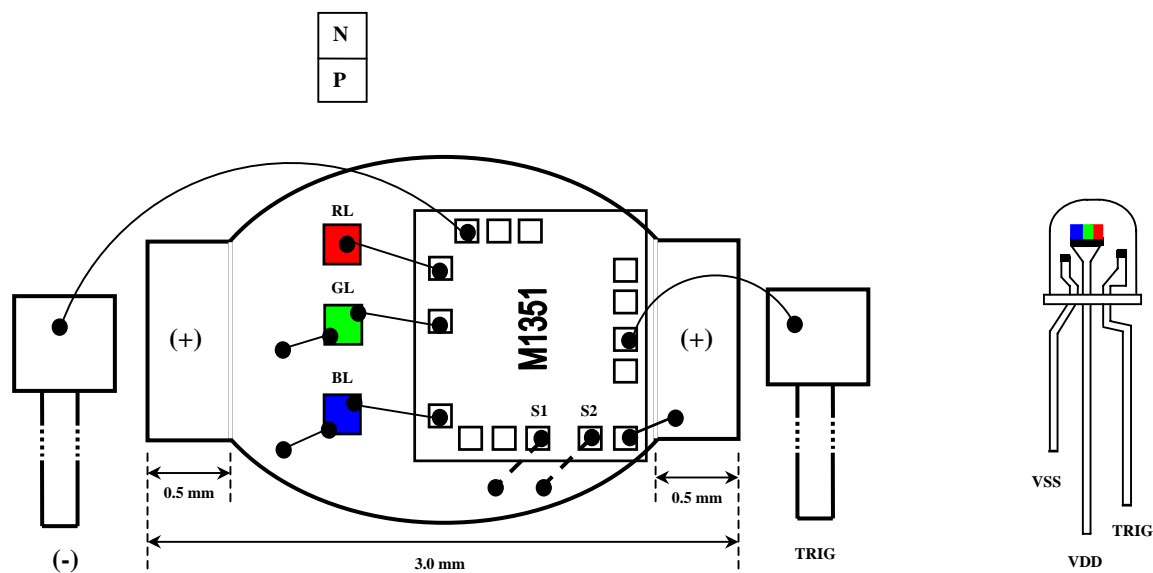


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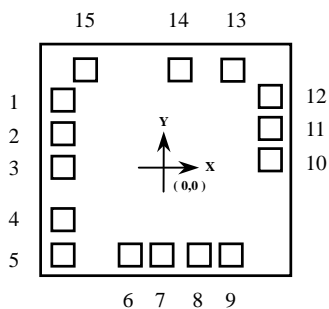
### 3 PIN LED LAMP BONDING DIAGRAM



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

### PAD ASSIGNMENT & POSITION

UNIT: um



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

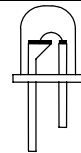
\* CHIP SIZE ~ 1.43 X 1.35 mm<sup>2</sup>

\* IC substrate should be connected to VDD in PCB (PCB 上 IC 必須接 VDD)



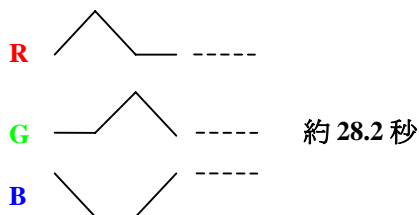
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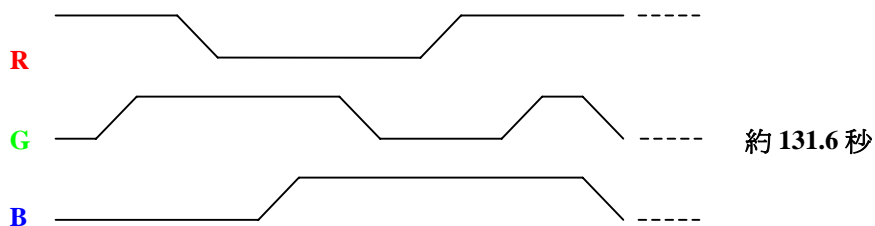
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**PATTERN (變化示意圖)**

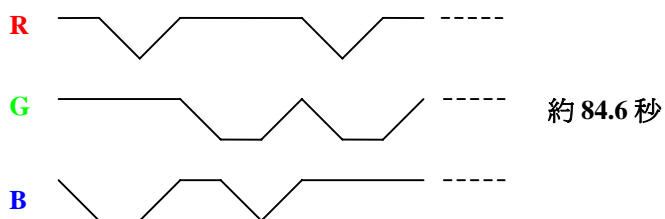
**\* SECTION 1 : 1/2 PHASE**



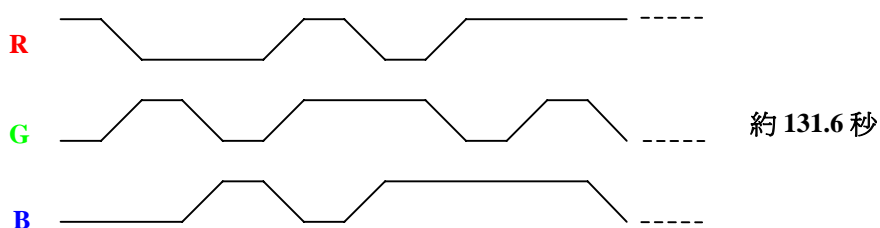
**\* SECTION 2 : 七彩主色變化**



**\* SECTION 3 : 七彩變化**



**\* SECTION 4 : 七彩交錯漸明漸暗**



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

( 以上電路及規格僅供參考,本公司得逕行修正 )