



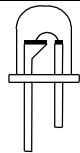
東楠科技股份有限公司
Tungnan Technology Co., Ltd.

“Patented (已獲專利保護)”

TEL : 886-2- 22783733
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DC APPLICATION
SYNC RGB LED IC

用於 DC 應用
同步三色燈 LED IC

LED FLASH	
M1359L/E	

FEATURES 功能敘述

* M1359L

- Pairs with M1359E controller.
- Operation mode : 16 modes.
- Constant sink current 15mA (Typ.) per LED outputs.
- Outputs directly drive LED.
- Supply hot plugging.
- Automatic synchronous a LEDs.
- 2 pin LED Lamp — suffix - lamp

APPLICATION 產品應用

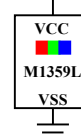
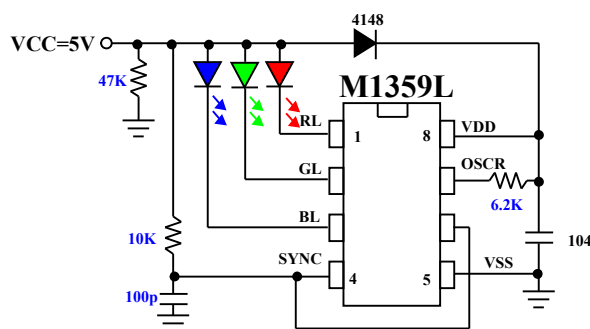
- LED color mixer lamp etc...

ELECTRICAL CHARACTERISTICS 電氣規格

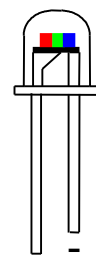
(@V_{DD}=5V unless otherwise specified)

Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
工作電壓 Operating Voltage	V _{DD}	2.4	5	5.5	V	
工作電流 Operating Current	I _{OP}	—	1	—	mA	No load
推動電流 Driving Sink Current	I _{OL}	—	15	—	mA	@V _{DS} = 1.2V (RL, GL, BL)
振盪頻率 Oscillator Frequency	F _{OSC}	—	4	—	MHz	±10% TOL, R _{osc} =6.2KΩ
工作溫度 Operating Temperature	Temp.	0	25	70	°C	

APPLICATION DIAGRAM 參考電路圖



M1359L-lamp



10 φ Lamp

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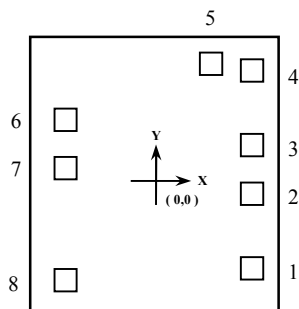
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PAD ASSIGNMENT & POSITION



UNIT : μm			
No.	NAME	X	Y
1	RL	440.3	-440.6
2	GL	440.3	-113.0
3	BL	440.3	-110.2
4	SYNC	440.3	437.8
5	VSS	254.9	472.6
6	TCK	-399.8	233.8
7	OSCR	-399.8	-1.8
8	VDD	-399.8	-490.5

* CHIP SIZE $\sim 1.12 \times 1.23 \text{ mm}^2$

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

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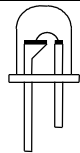
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FEATURES 功能敘述

* M1359E

• TG/DIN Key :

TG : ON/OFF, Mode sequence trigger key , Push switch $\geq 2\text{sec}$ power off

DIN : Serial information input pin from an RF or an IR receiver, Pairs with M3162/M3162-IR & M3172.

• Hour : timer select ; “VSS”= 8 hours ON, 16 hours OFF

• SEL : Function select ; ”VSS”= 8 functions(Mode 1~8), “open” = 16 functions(Mode 1~16). Refer to table 1.

• PLUG : Link the more LED lighting network synchronous input pin, hot plugging, Active Low.

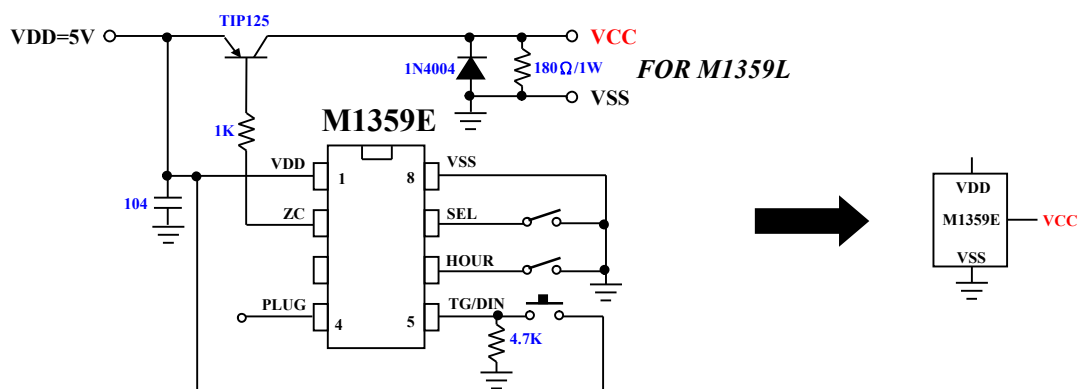
• LED Flashing pattern programming by M1359E controller.

ELECTRICAL CHARACTERISTICS 電氣規格

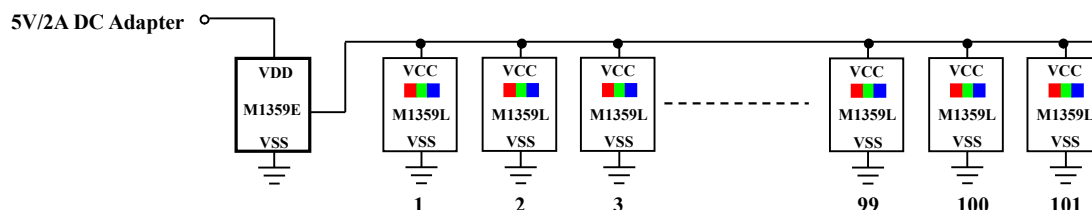
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Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
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工作電流 Operating Current	I _{OP}	—	1	—	mA	No load
推動電流 Driving Sink Current	I _{OL}	15	—	—	mA	@V _{DS} = 1.2V
推動電流 Driving Source Current	I _{OH}	20	—	—	mA	@V _{SD} = 1.2V
振盪頻率 Oscillator Frequency	F _{OSC}	—	4	—	MHz	$\pm 20\%$ TOL. Built-in Rosc
工作溫度 Operating Temperature	Temp.	0	25	70	°C	

APPLICATION DIAGRAM 參考電路圖



Pairs with 101 pcs M1359L application diagram



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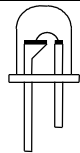
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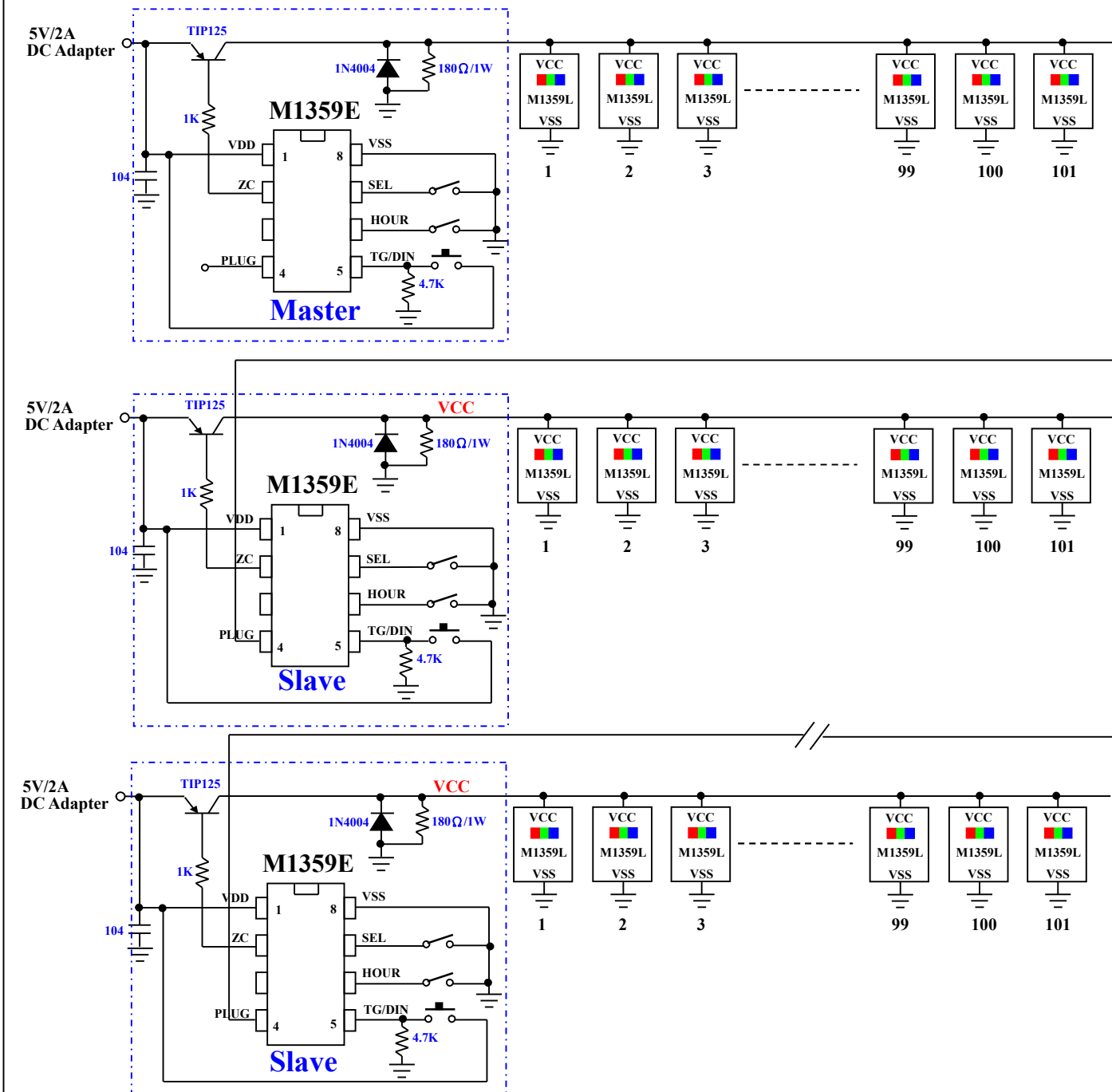
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Up to more LED lighting network synchronous application diagram



Note : The PLUG pin is an input pin to a peer-to-peer master controller clock synchronization.

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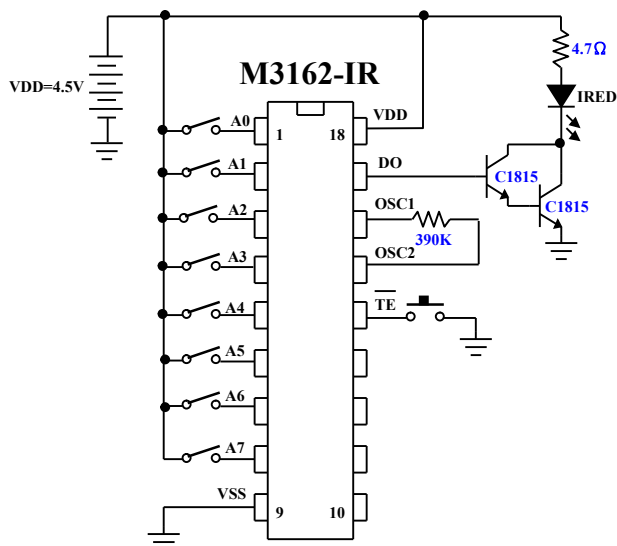
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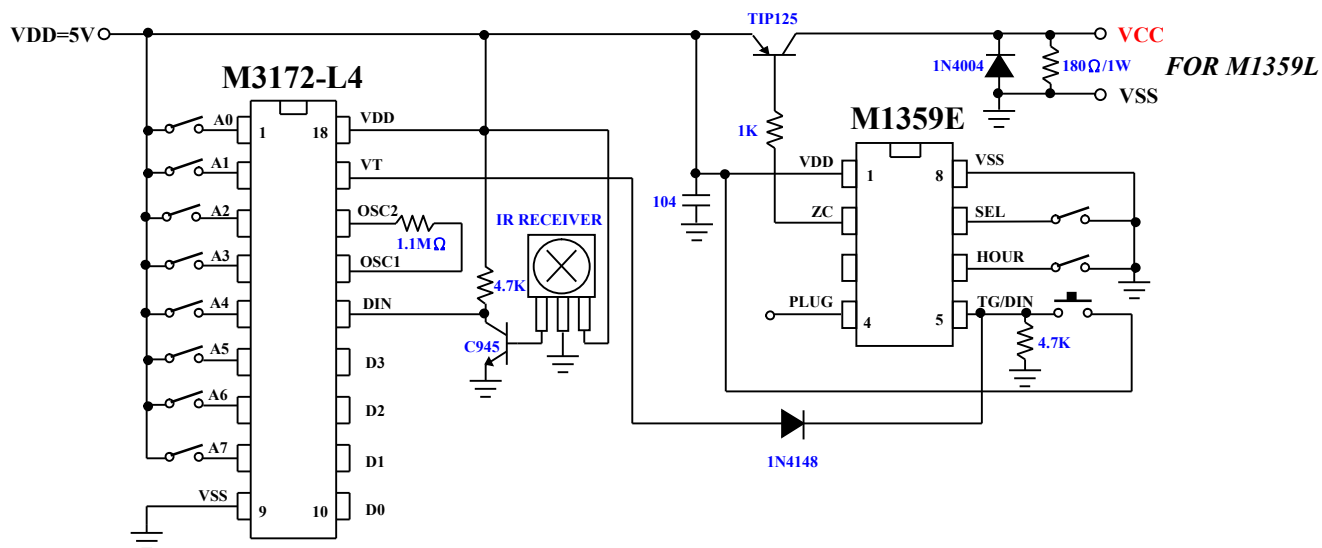
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REMOTE CONTROLLER

Infrared Transfer Application Circuit



Receiver Application Circuit



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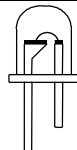
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M1359E MODE FORMAT (Table 1)

MODE	FUNCTIONS	功能
1	Combination mode from 2 to 8	第 2 段到第 8 段自動連續變換各段
2	Multi-color flashing stars	多色星星閃爍
3	8-color flash; 2 speed	8 色跳依序閃; 2 種速度
4	8- color gradually darkening; 2 speed	8 色漸明漸暗; 2 種速度
5	8 colors flash+ gradually darkening ; 2 speed	8 色跳依序閃 + 8 色漸明漸暗; 2 種速度
6	White light gradually→ Gradually eliminate the Green→ Gradually eliminate the blue→ Gradually eliminate red	白色漸亮後→綠色漸減→藍色漸減→紅色漸減 循環
7	Red light gradually→ Green light gradually→ Blue light gradually→ White out gradually	紅色漸亮→綠色漸亮→藍色漸亮→白色漸減 循環
8	White, blue flashing alternately, The speed of change (fast →middle→slow→middle→fast)	白、藍色交替閃，速度變化（快→中→慢→中→快）
9	Combination mode from 10 to 15	第 10 段到第 15 段自動連續變換各段
10	Purple, blue, orange flash alternately , The speed of change (fast →middle→slow→middle→fast)	紫、藍、橙色交替閃速度變化（快→中→慢→中→快）
11	flashing stars + White and blue flash alternately	星星閃爍+白、藍色交替閃
12	(Red, green)flash alternately +(purple, blue) flash alternately	(紅、綠) 交替跳閃 後接 (紫、藍) 色交替跳閃
13	(White, Red)flash alternately +(green, purple) flash alternately	(白、紅) 交替跳閃 後接 (綠、紫) 色交替跳閃
14	Orange and blue)flash alternately→ 8-color flash→ (Yellow, indigo) flash alternately	(橙、藍)交替跳閃後接 8 色跳閃接(黃、靛)交替跳閃
15	(Blue, green, red and white) were gradually bright colors followed by gradually eliminate, the speed of change (fast →middle→slow→middle→fast)	(藍、綠、紅、白) 色依序漸亮後接漸減，速度變化 (快→中→慢→中→快)
16	LED OFF	LED 全滅

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