■Description

M3096V is a low voltage 6/12-LED controller IC specially design for lotto game.

The IC requires minimal external components.

■Application Example

seconds

● 12 lamps lotto game
● 6 lamps dice game
● 10 lamps bingo game LED.
● 5 lamps bingo game
● 2 lamps big or small game
● 10+2 lamps big or small game
● Other lotto games

■Feature

● CMOS technology
● Operating voltage：1.35~5.00V DC
● Low standby current < 5μA (@3VDC)
● Maximum 12 LED can be connected as：
 — 12 or 6 LED, LCN as center LED, IC will automatically stop after 6

 — 10 or 5 or 2 LED, use power on/off LED will chase sequentially for a few cycles and randomly stop at one

● IC directly drives piezo buzzer and generates sound effect which changes with LED chasing speed
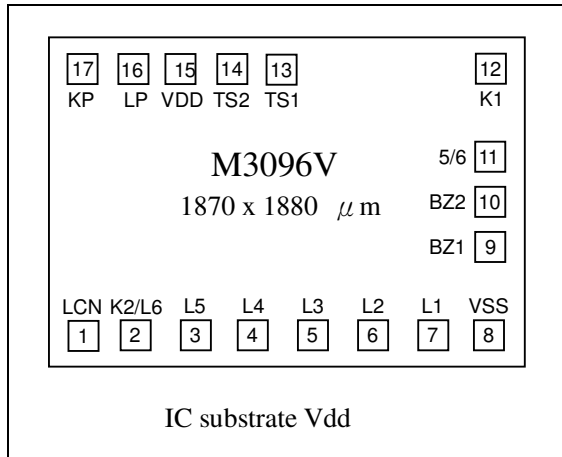● Single trigger input (High Level)

■Product type

Part number	Package type
M3096V	Chip form
3906P	16 pin DIP

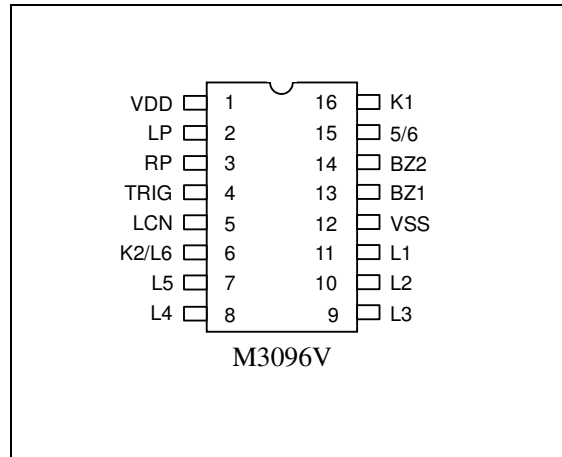## ■Explanation (reference to P.3 application circuits)

1. 12 or 6 LED + 1 LED (center LCN LED,auto chasing)

   (1) Holding SW, 12 LED start to flash sequentially. LCN LED flashes indepently.

   (2) After released SW, 10 and LCN LED start to slow down flashing speed

   (3) When it stops at one LED, LCN LED keeps flashing.

   (4) After 10 seconds, all LED turn off. IC enters standby mode. Retriggering SW will re-start the above sequence.

   (5) IC can be connected as 12 or 6 LED application.

2. 10 or 5 LED + 2 LED (two center LCN LED, for big or small)

   (1) Holding SW1,10 LED start to flash sequentially. Two LCN LED do not flash.

   (2) After released SW1, 10 LED start to slow down flashing speed.

   (3) When it stops at one LED. Press SW2, LCN(11st and 12nd) LED will flash and stop at one.

   (4) IC can be connected as 5, 10, 2 LED.

   (5) Using only 11st and 12nd LED is for 2-LED application.

■ **IC bonding pad diagram**

```
17  16  15  14  13              12
KP  LP  VDD TS2 TS1             K1

        M3096V              5/6 11

      1870 x 1880  μm       BZ2 10

                            BZ1  9

LCN K2/L6 L5  L4  L3  L2  L1  VSS
 1   2   3   4   5   6   7   8
```

IC substrate Vdd

■ **16 pin DIP package**

```
VDD ⊏ 1        16 ⊐ K1
 LP ⊏ 2        15 ⊐ 5/6
 RP ⊏ 3        14 ⊐ BZ2
TRIG ⊏ 4       13 ⊐ BZ1
 LCN ⊏ 5       12 ⊐ VSS
K2/L6 ⊏ 6      11 ⊐ L1
 L5 ⊏ 7        10 ⊐ L2
 L4 ⊏ 8         9 ⊐ L3
```

M3096V

■ **Pin description**

Pad	DIP	Symbol	Function
1	5	LCN	Center LED output
2	6	K2/L6	SW2 key input or LED6/LED12 output
3	7	L5	LED5/LED11 output
4	8	L4	LED4/LED10 output
5	9	L3	LED3/LED9 output
6	10	L2	LED2/LED8 output
7	11	L1	LED1/LED7 output
8	12	Vss	Negative power supply
9	13	BZ1	Buzzer output port 1
10	14	BZ2	Buzzer output port 2
11	15	5/6	5(10)/6(12) LED output selection pin
12	16	K1	SW1 key input
13	--	TEST1	Test pin (internal use)
14	--	TEST2	Test pin (internal use)
15	1	Vdd	Positive power supply
16	2	LP	Left output
17	3	RP	Right output

■ Application Circuit

A. Auto power off (lotto game)

(1) 6 LED + 1 LED

(2) 12 LED + 1 LED

Attention to ★
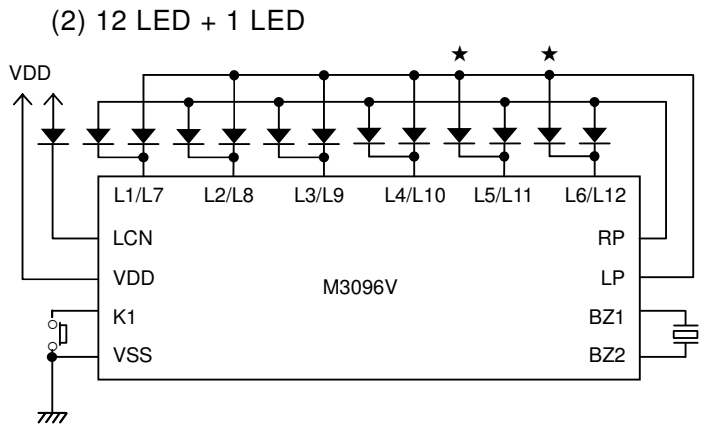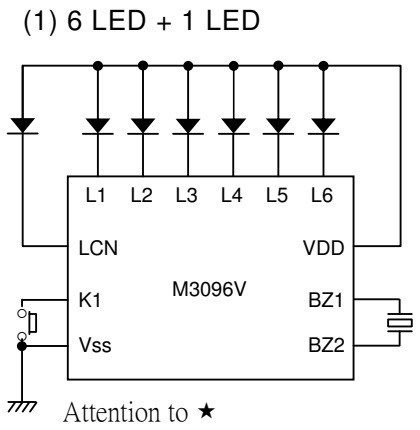
B. Power will not turn off automatically (bingo game)

(1) 5 LED + 2 LED

(2) 10 LED + 2 LED

SW1 controls L1~L5
SW2 controls LR，RP