

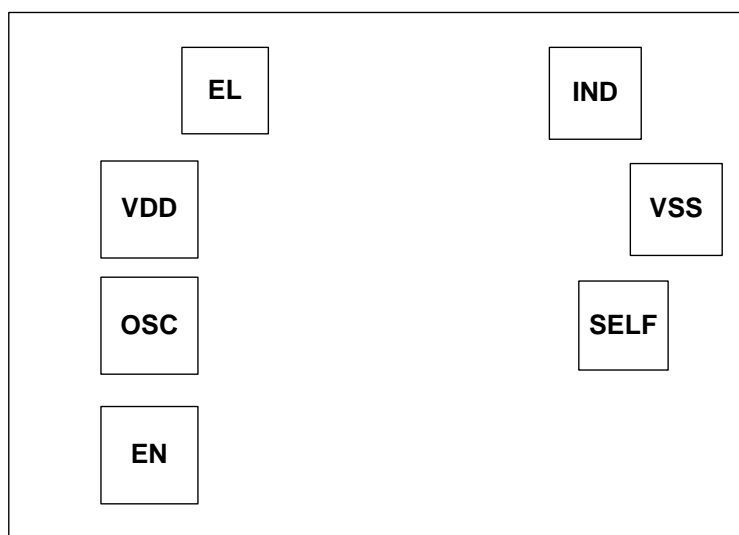
MA88V11B EL DRIVER

Line-up & Specification

V1.0

MosArt
SEMICONDUCTOR CORP.

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 **BONDING DIAGRAM**

Chip size : 808um * 665um

Pad size : 90um * 90um

 **FEATURES**

- 3V battery operation
- No external R-C required for oscillation
- Two EL driving frequency can be selected to change the colors of EL lights
- 3 seconds delay after EN released

 **OVERVIEW**

The MA88V11B is designed for driving EL on watch's back light. The operating voltage is 3V. An inductor is used to generate the high voltage, and one diode, 2 transistors and a resistor are necessary. The EL deriving frequency can be selected for changing the color of EL lights. MA88V11B can be selected for normal trigger or delay 3 seconds.

PIN DESCRIPTION

| Pin | Pin name | Pin description |
|-----|----------|---|
| 1 | EL | Output for EL charge |
| 2 | VDD | Chip Power positive |
| 3 | OSC | Oscillator pin |
| 4 | EN | Enable pin, High enable. (*note1) |
| 5 | SELF | EL driving frequency selection(*note1) |
| 6 | VSS | Chip power ground |
| 7 | IND | Output for EL discharge |

*Note1 : Built in pull down resistor

OPERATION DESCRIPTION

1) EL driving frequency selection

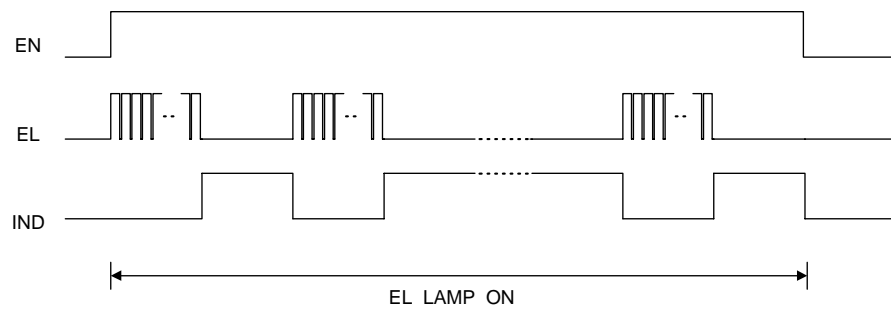
| SELF | EL driving frequency | Color of EL lights |
|----------|----------------------|--------------------|
| Floating | 500Hz | Green |
| 1 | 1000Hz | Blue |

2) Trigger mode

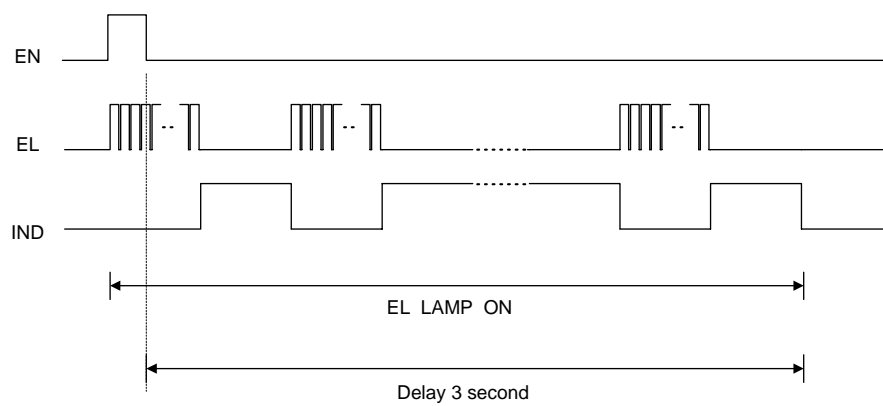
| EN | Trigger mode |
|-----------------------------------|--------------|
| No connect | Normal |
| EN pin connect a capacitor to VDD | 3 sec. delay |

Operation in 3V use 0.1uf capacitor.

(i) Normal mode

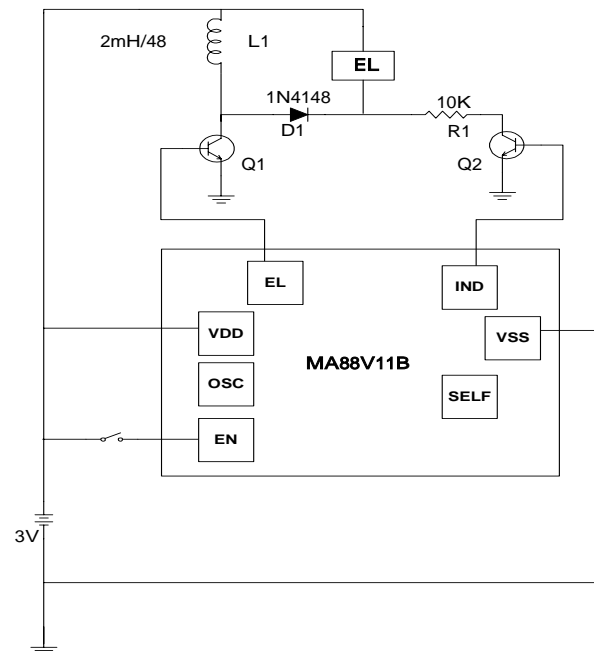


(ii) Delay mode (EN pin connect a capacitor to VDD)

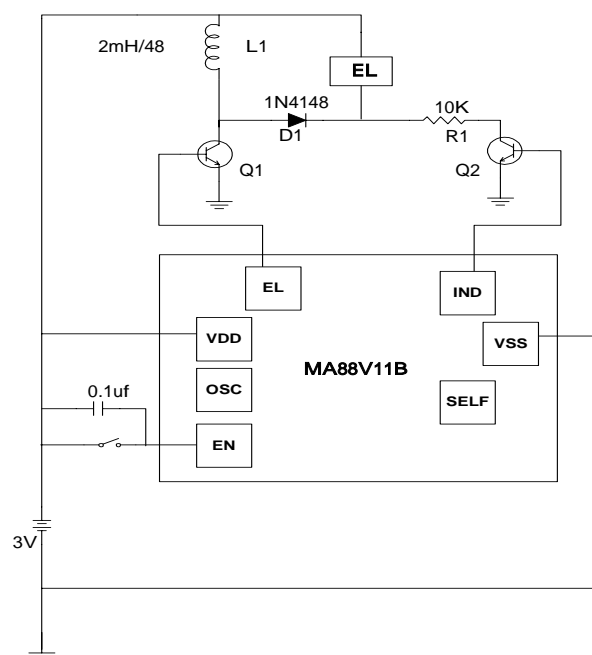


APPLICATION CIRCUIT

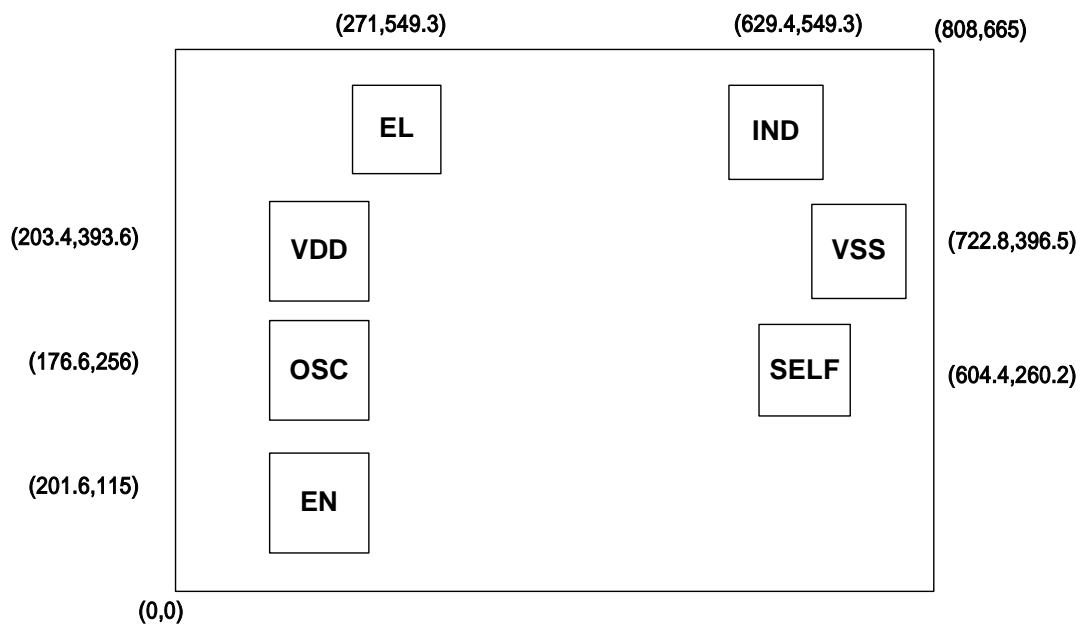
(1) Operation voltage 3V, normal trigger mode



(2) Operation voltage 3V, delay 3 seconds mode



PAD DIAGRAM



Chip size : 808um x 665um

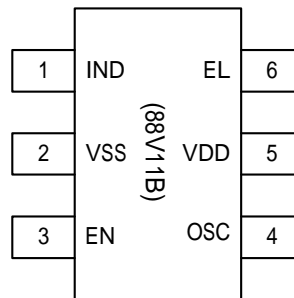
Pad size : 90um x 90um

Substrate connect to VSS

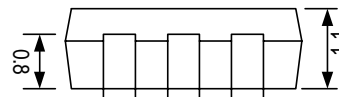
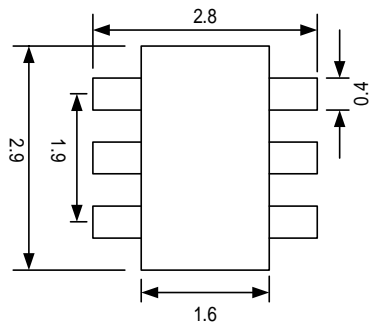
| NO | NAME | X | Y |
|----|------|-------|-------|
| 1 | EL | 271 | 549.3 |
| 2 | VDD | 203.4 | 393.6 |
| 3 | OSC | 176.6 | 256 |
| 4 | EN | 201.6 | 115 |
| 5 | SELF | 604.4 | 260.2 |
| 6 | VSS | 722.8 | 396.5 |
| 7 | IND | 629.4 | 549.3 |

PACKAGE

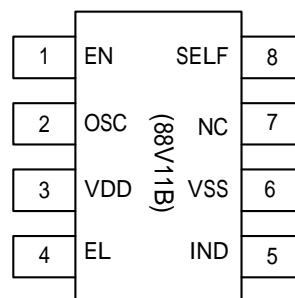
(a) SOT26



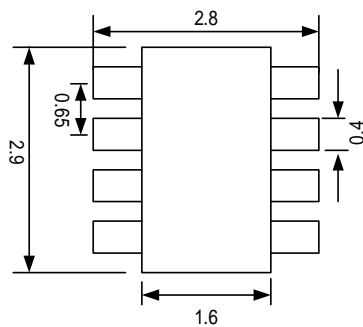
Unit : mm



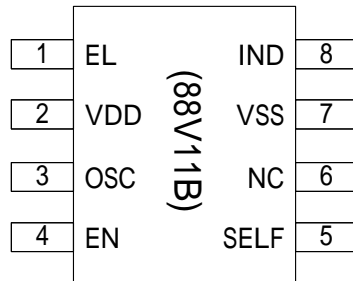
(b) SOT28



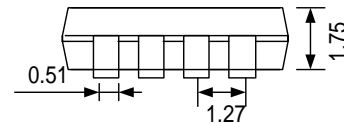
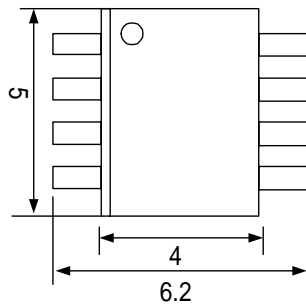
Unit : mm



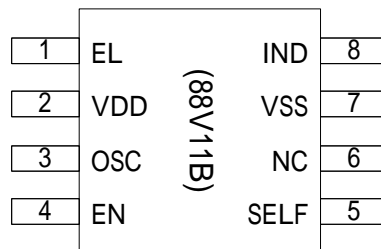
(c) SOP



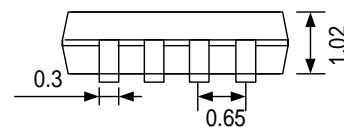
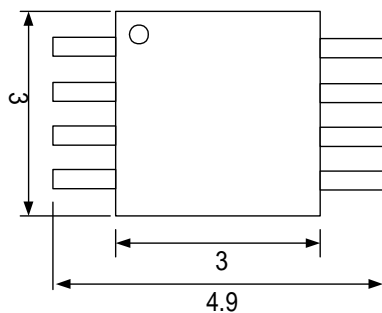
Unit : mm



(d) MSOP



Unit : mm



 DC CHARACTERISTICS

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|------------------------------|--------|-------------------------|---------|------|---------|------|
| Oscillation frequency | Fosc | Build-in RC oscillation | | 1050 | | KHz |
| Operating voltage | VDD | | 1.5 | 3.0 | 3.3V | V |
| Standby current | Istb | VDD=3V | | 0 | 0.1 | uA |
| Operating current (3.0V) | Iop | EN=VDD(3V) | | 889 | | uA |
| High level input voltage | Vih | SELF, EN | 0.8*Vdd | | Vdd | V |
| Low level input voltage | Vil | SELF, EN | 0 | | 0.2*Vdd | V |
| High level input current (1) | Iih1 | SELF | 0 | | 0.1 | uA |
| High level input current (2) | Iih2 | EN | | 0.1 | | uA |
| Low level input current | Iil | SELV, SELF, EN | 0 | | 0.2 | uA |
| Output drive current (3.0V) | Ioh | EL, IND Voh=2.2V | | 225 | | uA |
| Output sink current (3.0V) | Iol | EL, IND Vol=0.8V | | 11.2 | | mA |