

Structure Silicon Monolithic Integrated Circuit

Product name Low voltage operation video driver with LPF

Type **BH76906GU**

Outer dimensions Fig.1 VCSP85H1

Function

- Built in 6dB AMP.
- Built in standby function
- Built in LPF (8 order) (f=4.5MHz)
- No output coupling capacitor required

※ Radiation resistance is not included in the design.

■ Absolute Maximum Ratings (Ta=25°C)

| Parameter             | Symbol | Limits   | Unit |
|-----------------------|--------|----------|------|
| Supply voltage        | Vcc    | 3.55     | V    |
| Power dissipation     | Pd     | 580      | mW   |
| Operating temperature | Topr   | -40~+85  | °C   |
| Storage temperature   | Tstg   | -55~+125 | °C   |

\* In case mounting the ROHM standard application board (50mm × 58mm × 1.6mm)

\* Reduced by 5.8 mW/°C at 25°C or higher.

■ Operating range (Ta=25°C)

| Parameter      | Symbol | Min. | Typ. | Max. | Unit |
|----------------|--------|------|------|------|------|
| Supply voltage | Vcc    | 2.5  | 3.0  | 3.45 | V    |

**■Electrical characteristics** 【Unless otherwise noted, Ta=25°C, VCC=3V】

| Parameter                           |            | Symbol             | Limits |      |                 | Unit | conditions                                                        |
|-------------------------------------|------------|--------------------|--------|------|-----------------|------|-------------------------------------------------------------------|
|                                     |            |                    | Min.   | Typ. | Max.            |      |                                                                   |
| Circuit current                     | ACTIVE     | I <sub>cc1</sub>   | —      | 15   | 25              | mA   | No signal                                                         |
|                                     | STANDBY    | I <sub>cc2</sub>   | —      | 0.0  | 2               | μA   | Standby mode                                                      |
| Voltage gain                        |            | G <sub>V</sub>     | +5.5   | +6.0 | +6.5            | dB   | V <sub>in</sub> =100KHz, 1.0Vpp                                   |
| Maximum output level                |            | V <sub>omv</sub>   | 4.5    | 5.2  | —               | Vpp  | f=10KHz、THD=1%                                                    |
| Frequency characteristics           | 1          | G <sub>f1</sub>    | -0.95  | -0.2 | 0.2             | dB   | V <sub>in</sub> =1.0Vpp<br>f=4.5MHz/100KHz                        |
|                                     | 2          | G <sub>f2</sub>    | -5.0   | -1.5 | -0.5            | dB   | V <sub>in</sub> =1.0Vpp<br>f=8.0MHz/100KHz                        |
|                                     | 3          | G <sub>f3</sub>    | —      | -26  | -18             | dB   | V <sub>in</sub> =1.0Vpp<br>f=18MHz/100KHz                         |
| Differential Gain                   |            | D <sub>G</sub>     | —      | 0.5  | 3.0             | %    | V <sub>IN</sub> = 1.0Vpp<br>Standard stair step signal            |
| Differential Phase                  |            | D <sub>P</sub>     | —      | 1.0  | 3.0             | deg  | V <sub>IN</sub> = 1.0Vpp<br>Standard stair step signal            |
| Output pin source current           |            | I <sub>extin</sub> | 15     | 30   | —               | mA   | Add 4.5V to Output pin through 150Ω                               |
| Output DC offset                    |            | V <sub>off</sub>   | -50    | 0    | 50              | mV   | No signal<br>V <sub>off</sub> =(V <sub>out</sub> pin voltage) ÷ 2 |
| Standby SW Change Voltage           | High Level | V <sub>thH</sub>   | 1.2    | —    | V <sub>cc</sub> | V    | ACTIVE mode                                                       |
|                                     | Low Level  | V <sub>thL</sub>   | 0      | —    | 0.45            | V    | STANDBY mode                                                      |
| Standby SW Input Current High Level |            | I <sub>thH</sub>   | 35     | 45   | 60              | μA   | 3.0V is applied to B3                                             |
| Input Impedance                     |            | R <sub>in</sub>    | 105    | 150  | 195             | kΩ   | 1.0V is applied to A3<br>Input current measurement                |

**■Control pin settings**

| Parameter    | Status | Operational mode |
|--------------|--------|------------------|
| STANDBY (B3) | H      | ACTIVE           |
|              | L      | STANDBY          |
|              | OPEN   |                  |

## Outer dimensions • PIN arrangements

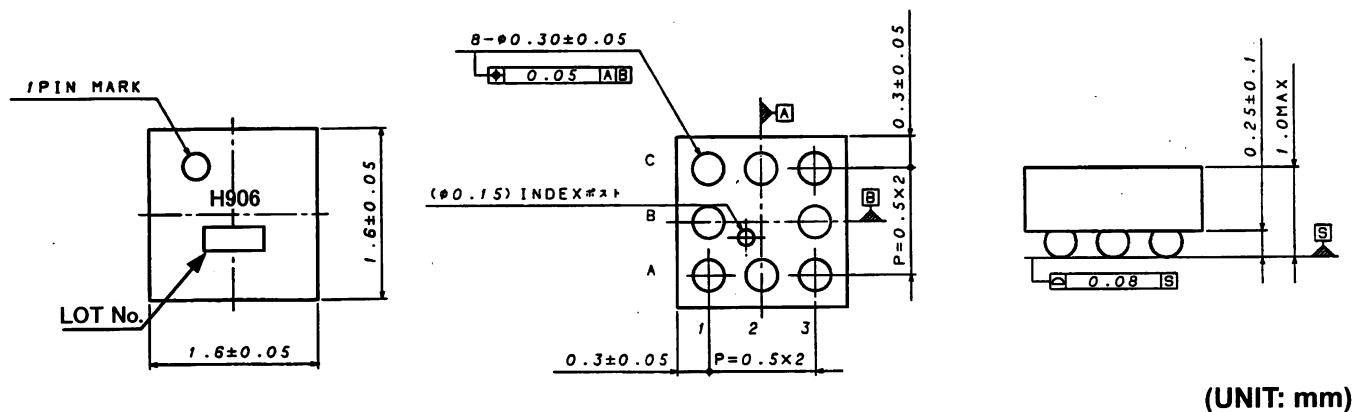
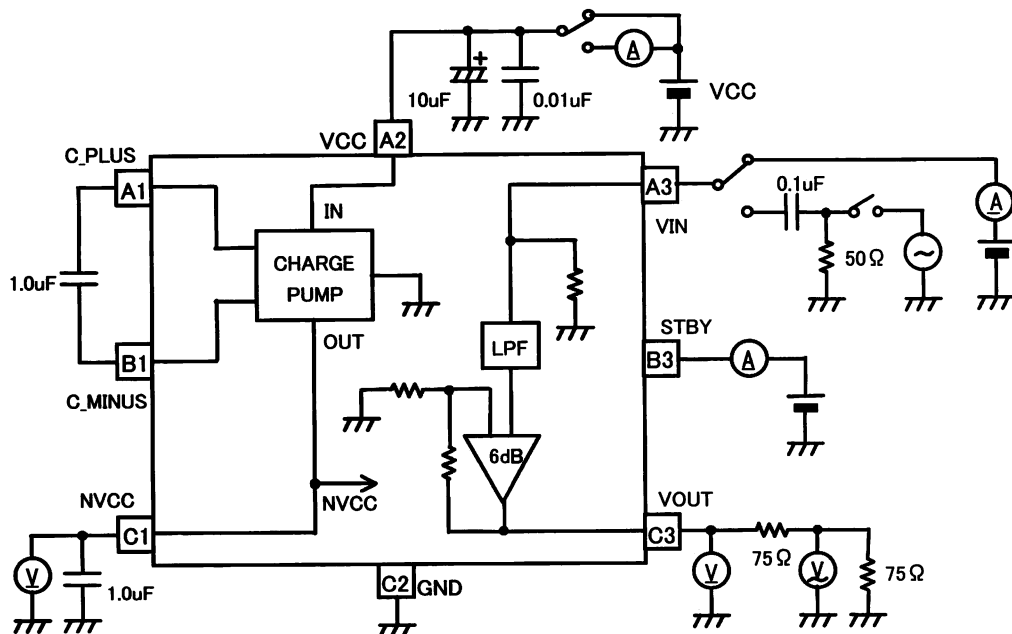
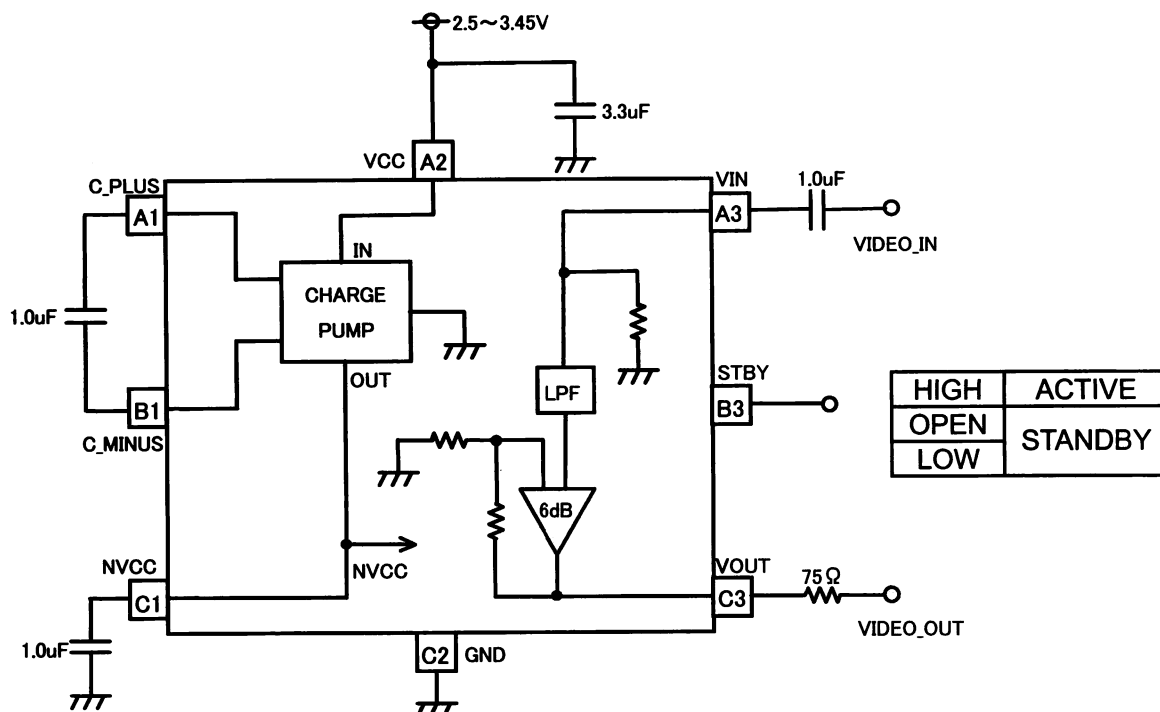


Fig.1

## Measurement circuit



※ Measurement circuit is intended for shipment inspections, and differs from application circuit.



### ■ Cautions on use

#### (1) Layout of decoupling capacitor

As the wiring length of decoupling capacitor between VCC terminal (A2) and GND terminal (C2) becomes longer, the noise quality becomes worse. Make an enough consideration about the layout of decoupling capacitor.

#### (2) Absolute maximum ratings

If applied voltage, operating temperature range, or other absolute maximum ratings are exceeded, the LSI may be damaged. Do not apply voltages or temperatures that exceed the absolute maximum ratings. If you think of a case in which absolute maximum ratings are exceeded, enforce fuses or other physical safety measures and investigate how not to apply the conditions under which absolute maximum ratings are exceeded to LSI.

#### (3) Operation in strong magnetic fields

Adequately evaluate use in a strong magnetic field, since there is a possibility of malfunction.

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