

Structure Silicon Monolithic Integrated Circuit
 Product name Low voltage operation video driver with LPF

Type **BH76706GU**

Outer dimensions Fig.1 VCSP85H1

- Function
- Built in 6dB AMP.
 - Built in standby function
 - Built in LPF (8 order) (f=4.5MHz)
 - Built in shunt SW of output terminal
 - 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 |

Status of this document

The Japanese version of this document is the formal specification.
 A customer may use this translation version only for a reference to help reading the formal version.
 If there are any differences in translation version of this document, formal version takes priority.

Application example

The application circuit is recommended for use. Make sure to confirm the adequacy of the characteristics.
 When using the circuit with changes to the external circuit constants, make sure to leave an adequate margin for external components including static and transitional characteristics as well as dispersion of the IC.
 Note that ROHM cannot provide adequate confirmation of patents.

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

| Parameter | | Symbol | Limits | | | Unit | conditions |
|--|--------------|--------------------|-----------------|---------|-----------------|------|--|
| | | | Min. | Typ. | Max. | | |
| Circuit current | ACTIVE | I _{CC1} | — | 15 | 25 | mA | No signal |
| | STANDBY | I _{CC2} | — | 0.0 | 2 | μA | Standby mode |
| | INPUT | I _{CC3} | — | 100 | 200 | μA | Input mode(STBY=1.5V) |
| Voltage gain | | G _V | +5.5 | +6.0 | +6.5 | dB | V _{in} =100KHz, 1.0Vpp |
| Maximum output level | | V _{omv} | 4.5 | 5.2 | — | Vpp | f=10KHz, THD=1% |
| Frequency characteristics | 1 | G _{f1} | -1.15 | -0.2 | 0.0 | dB | V _{in} =1.0Vpp f=4.5MHz/100KHz |
| | 2 | G _{f2} | -5.0 | -1.4 | -0.5 | dB | V _{in} =1.0Vpp f=8.0MHz/100KHz |
| | 3 | G _{f3} | — | -28 | -18 | dB | V _{in} =1.0Vpp f=18MHz/100KHz |
| Differential Gain | | D _G | — | 0.5 | 3.0 | % | V _{IN} = 1.0Vpp Standard stair step signal |
| Differential Phase | | D _P | — | 1.0 | 3.0 | deg | V _{IN} = 1.0Vpp Standard stair step signal |
| Output pin source current | | I _{extin} | 15 | 30 | — | mA | Add 4.5V to Output pin through 150Ω |
| Output DC offset | | V _{off} | -50 | 0 | 50 | mV | No signal V _{off} =(V _{out pin voltage}) ÷ 2 |
| Standby SW Change Voltage | High Level | V _{thH} | VCC-0.2 | — | VCC | V | STANDBY mode |
| | Middle Level | V _{thM} | VCC×0.5 -0.2 | VCC×0.5 | VCC×0.5 +0.2 | V | INPUT mode |
| | Low Level | V _{thL} | GND | — | 0.2 | V | ACTIVE mode |
| Standby SW Output Current | Middle Level | I _{thM} | — | 8 | 15 | μA | 1.5V is applied to B3 |
| | Low Level | I _{thL} | — | 23 | 35 | μA | 0.0V is applied to B3 |
| Resistance between GND – OUTPUT terminal at INPUT mode | | R _{ON} | — | 3 | — | Ω | |
| Input Impedance | | R _{in} | 105 | 150 | 195 | kΩ | 1.0V is applied to A3 Input current measurement |

■ Outer dimensions • PIN arrangements

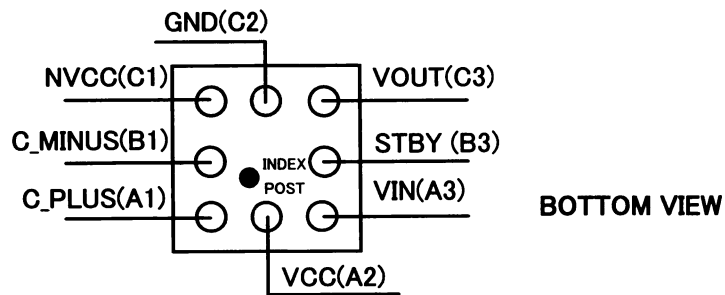
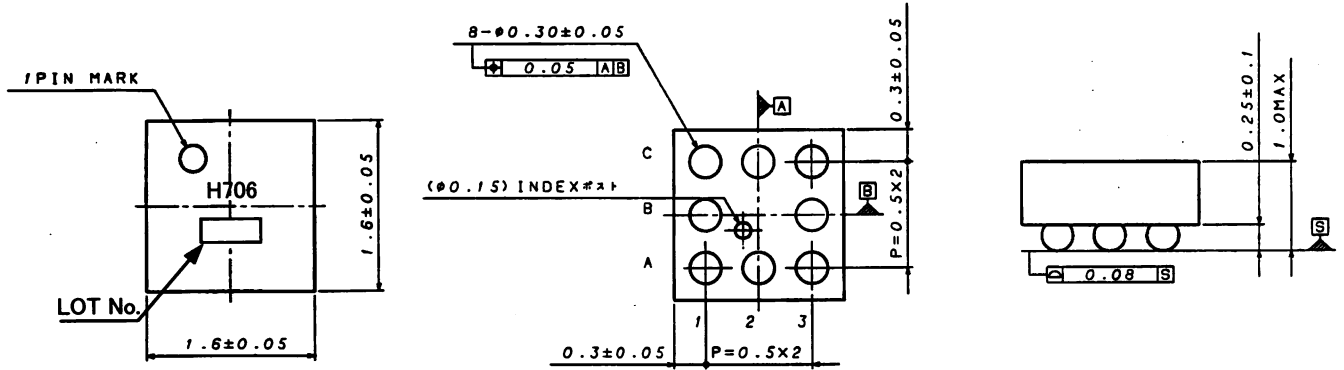
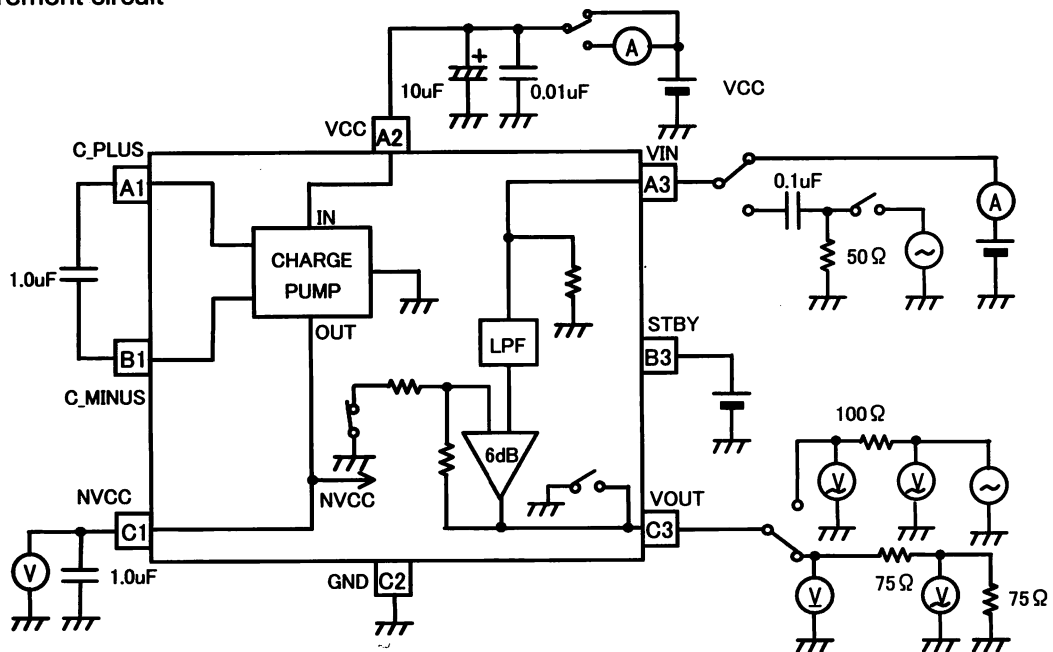


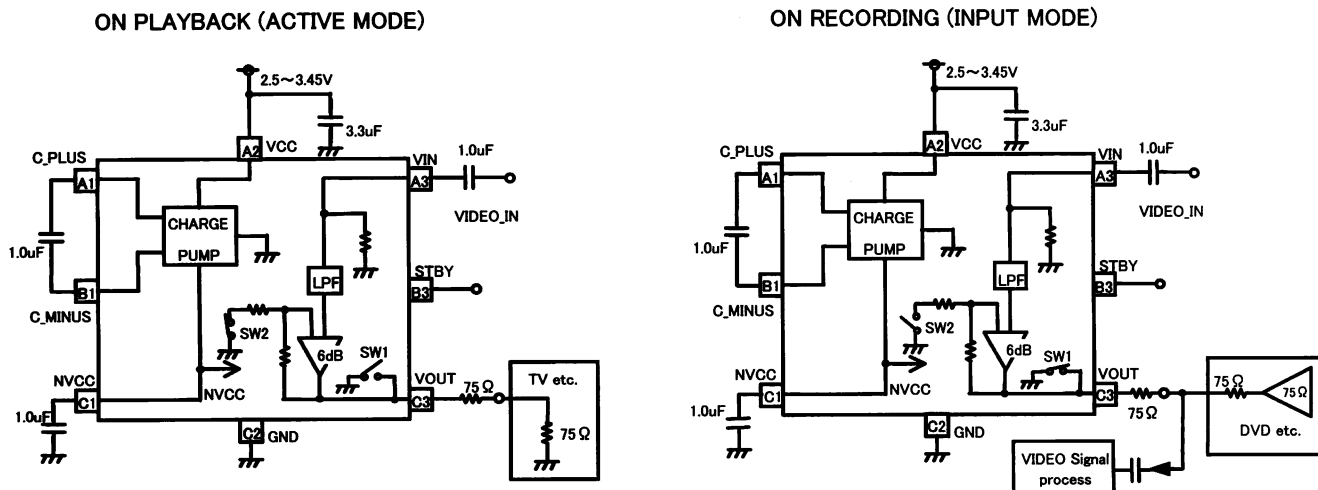
Fig.1

■ Measurement circuit



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

■ Application circuit



| STBY pin settings | Operational mode | SW1 | SW2 |
|-------------------|------------------|-----|-----|
| HIGH | STANDBY | OFF | OFF |
| MIDDLE | INPUT | ON | OFF |
| LOW | ACTIVE | OFF | ON |

■ 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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