

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.

The product described in this specification is designed to be used with ordinary electronic equipment or devices (such as audio-visual equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys).  
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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 <sub>CC1</sub>	—	15	25	mA	No signal
	STANDBY	I <sub>CC2</sub>	—	0.0	2	μA	Standby mode
	INPUT	I <sub>CC3</sub>	—	100	200	μA	Input mode(STBY=1.5V)
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>	-1.15	-0.2	0.0	dB	V <sub>in</sub> =1.0Vpp f=4.5MHz/100KHz
	2	G <sub>f2</sub>	-5.0	-1.4	-0.5	dB	V <sub>in</sub> =1.0Vpp f=8.0MHz/100KHz
	3	G <sub>f3</sub>	—	-28	-18	dB	V <sub>in</sub> =1.0Vpp f=18MHz/100KHz
Differential Gain		D <sub>G</sub>	—	0.5	3.0	%	V <sub>IN</sub> = 1.0Vpp Standard stair step signal
Differential Phase		D <sub>P</sub>	—	1.0	3.0	deg	V <sub>IN</sub> = 1.0Vpp 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 V <sub>off</sub> =(V <sub>out pin voltage</sub> ) ÷ 2
Standby SW Change Voltage	High Level	V <sub>thH</sub>	VCC-0.2	—	VCC	V	STANDBY mode
	Middle Level	V <sub>thM</sub>	VCC×0.5 -0.2	VCC×0.5	VCC×0.5 +0.2	V	INPUT mode
	Low Level	V <sub>thL</sub>	GND	—	0.2	V	ACTIVE mode
Standby SW Output Current	Middle Level	I <sub>thM</sub>	—	8	15	μA	1.5V is applied to B3
	Low Level	I <sub>thL</sub>	—	23	35	μA	0.0V is applied to B3
Resistance between GND – OUTPUT terminal at INPUT mode		R <sub>ON</sub>	—	3	—	Ω	
Input Impedance		R <sub>in</sub>	105	150	195	kΩ	1.0V is applied to A3 Input current measurement

■ Outer dimensions • PIN arrangements

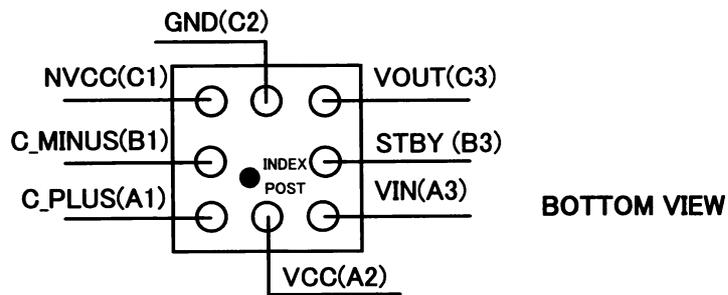
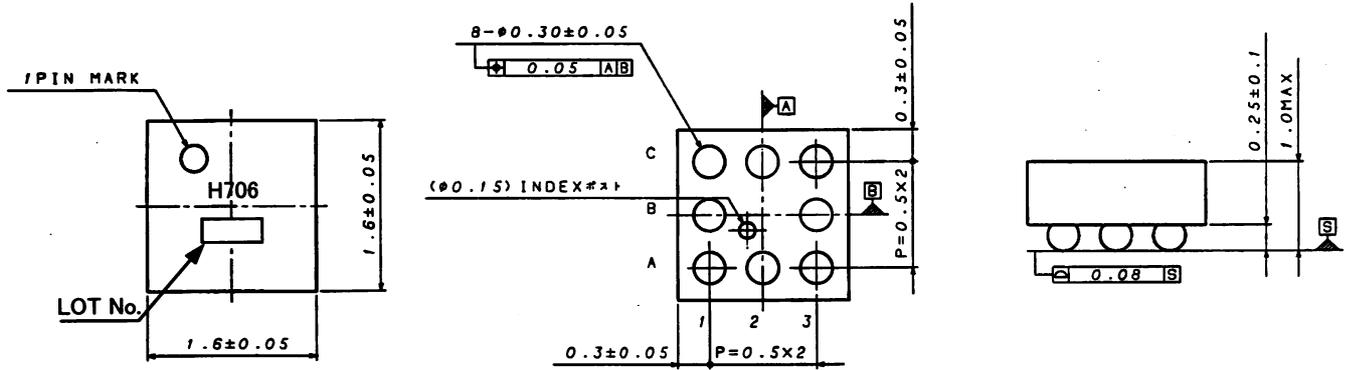
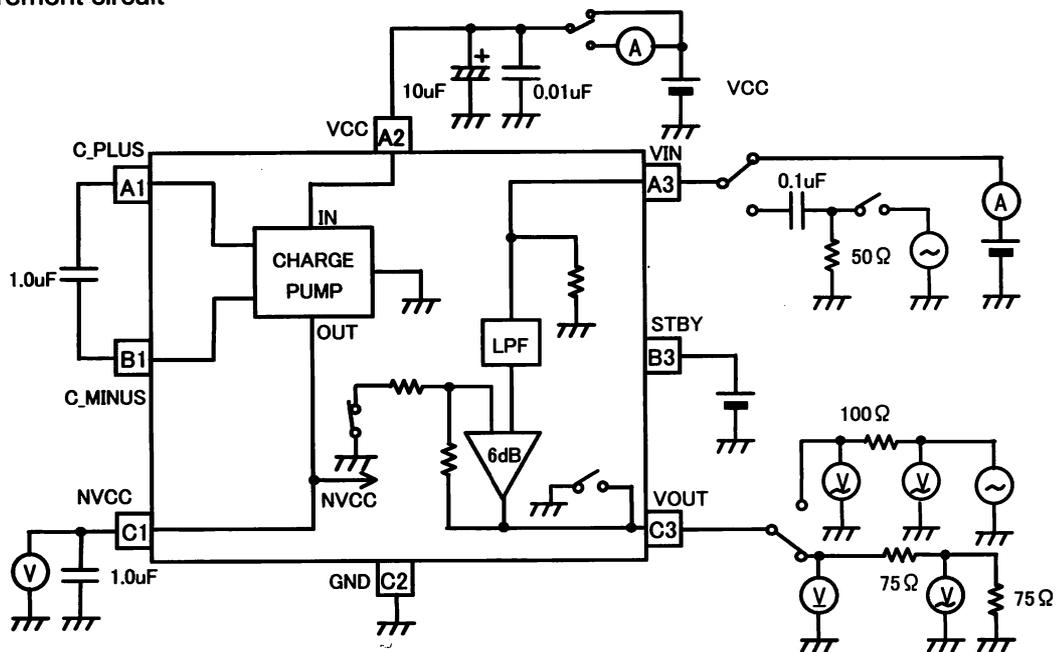


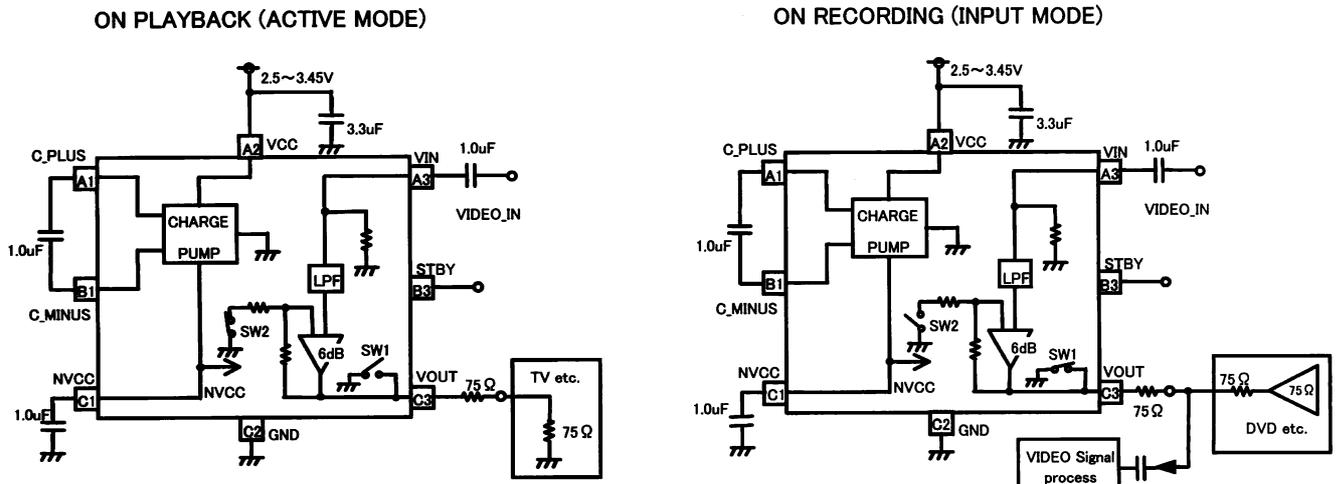
Fig.1

■ 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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