

Structure Silicon Monolithic Integrated Circuit

Product name Low voltage operation video driver with LPF

Type **BH76909GU**

Outer dimensions Fig.1 VCSP85H1

Function

- Built in 9dB 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>	+8.5	+9.0	+9.5	dB	V <sub>in</sub> =100KHz,0.7Vpp
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> =0.7Vpp f=4.5MHz/100KHz
	2	G <sub>f2</sub>	-5.0	-1.5	-0.5	dB	V <sub>in</sub> =0.7Vpp f=8.0MHz/100KHz
	3	G <sub>f3</sub>	—	-26	-18	dB	V <sub>in</sub> =0.7Vpp f=18MHz/100KHz
Differential Gain		D <sub>G</sub>	—	0.5	3.0	%	V <sub>IN</sub> = 0.7Vpp Standard stair step signal
Differential Phase		D <sub>P</sub>	—	1.0	3.0	deg	V <sub>IN</sub> = 0.7Vpp 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</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 Input current measurement

**■Control pin settings**

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

## Outer dimensions ・ PIN arrangements

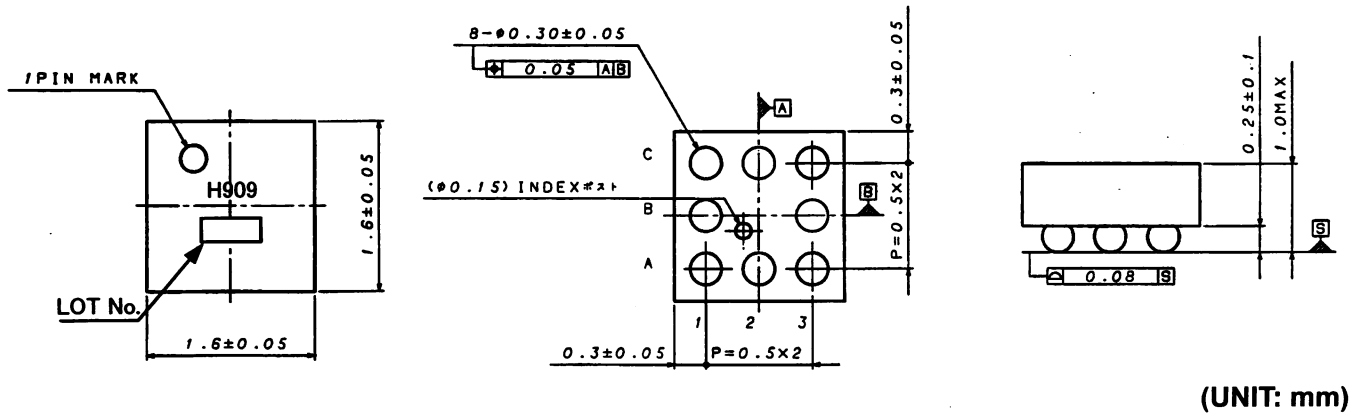
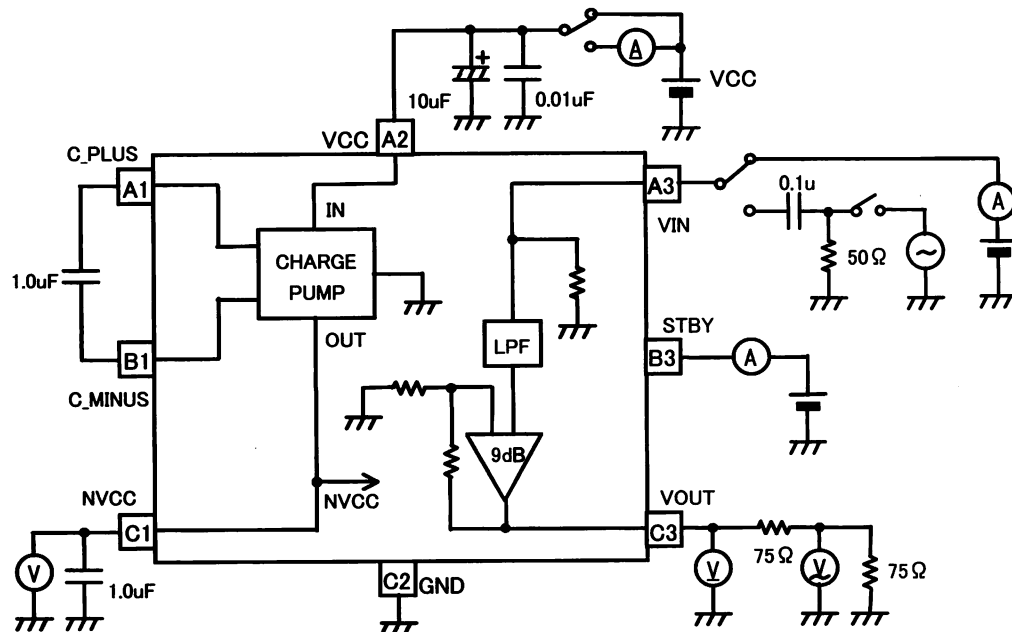


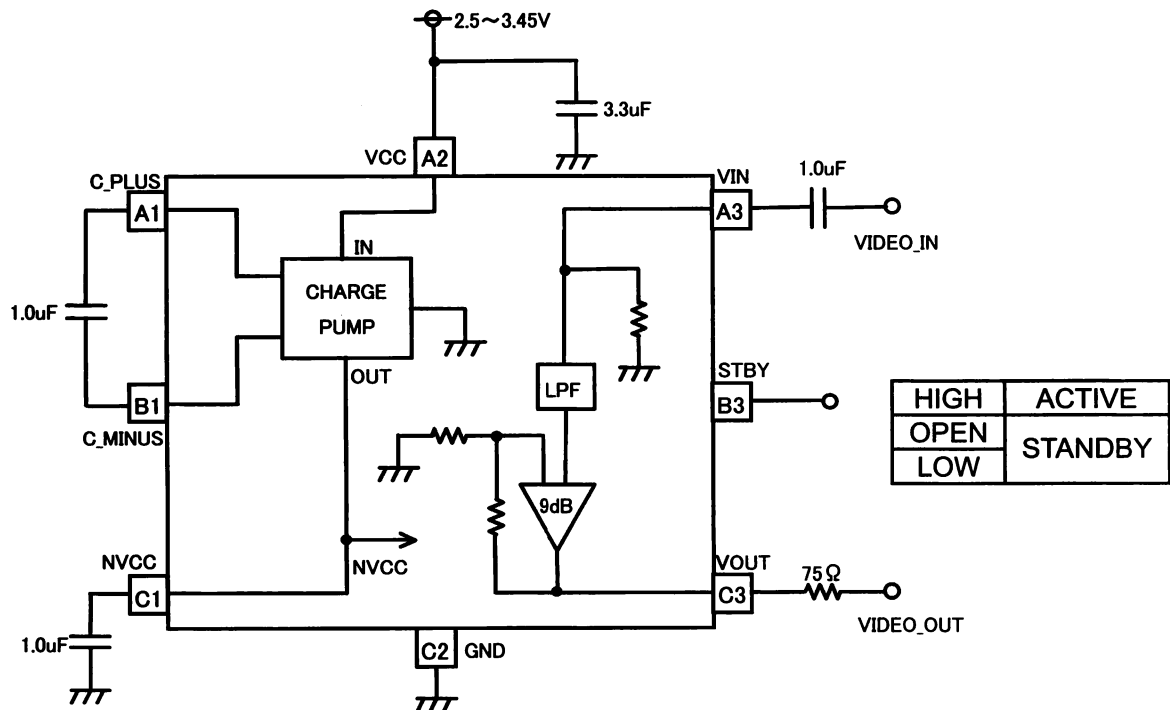
Fig.1

## Measurement circuit



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

## ■ 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.

## Appendix

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