

Product name : Video driver with LPF for mobile applications

Outer dimensions : Fig1 HVSO6 (Plastic mold)

Function :

- Output impedance becomes High at the time of standby. (1.5Megohm min)
- Built in 6dB AMP
- Built in LPF(8order) for Video input ($f=4.5\text{MHz}$)
- Sync Tip clamp circuit
- HVSO6 small package
- Built in standby function
- STBY terminal = Low : ACTIVE
 High: STANDBY

- Absolute maximum rating (Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V _{cc}	7	V
Power Dissipation	P _d	*410	mW
Operating temperature range	T _{opr}	-40 ~ +85	°C
Storage temperature range	T _{stg}	-55~+125	°C

* For operation above 25°C free-air temperature, power dissipation is decreasing 4.1mW/°C in case mounting the ROHM standard glass-epoxy application board (70×70×1.6mm)

- Operating voltage range

Parameter	Symbol	Min.	Std.	Max.	Unit
Operating voltage range	Vcc	2.6	3.0	5.5	V

☐ This product is not designed to protect itself against radioactive rays.

■Electrical characteristics

(Ta=25°C, VCC=3V unless otherwise specified)

Parameter		Symbol	Specifications			Unit	Testing condition
			Min.	Std.	Max.		
Circuit current	ACTIVE	I _{CC1}	—	7	11	mA	No Signal
	STANBY	I _{CC2}	—	0.0	2	μA	Standby mode
Standby SW input current Voltage	High Level	I _{thH}	—	—	60	μA	6pin=3.0V
	Low Level	I _{thL}	—	—	4	μA	6pin=0.2V
Standby SW Change Voltage	High Level	V _{thH}	1.2	—	V _{CC}	V	Standby OFF
	Low Level	V _{thL}	0	—	0.45	V	Standby ON
Voltage gain		GV	+5.5	+6.0	+6.5	dB	Vin=100KHz, 1.0Vpp
Maximum output level		Vomv	2.2	2.6	—	Vpp	f=10KHz, THD=1%
Frequency characteristics	1	G _{f1}	-1.0	0.1	0.5	dB	f=4.5MHz/100KHz
	2	G _{f2}	-7.0	-4.0	0.3	dB	f=8.2MHz/100KHz
	3	G _{f3}	—	-45.0	—	dB	f=19MHz/100KHz
Y signal output S/N		SN _Y	—	-67.0	—	dB	Band 100KHz~6MHz Terminal impedance 75Ω 100% White video signal
C signal output S/N	AM	SN _{CA}	—	-77.0	—	dB	Band 100Hz~500KHz Terminal impedance 75Ω 100% chroma video signal
	PM	SN _{CP}	—	-65.0	—	dB	
Different Gain		D _G	—	0.7	3.0	%	Vin= 1.0Vp-p Standard stair step signal
Different Phase		D _P	—	0.7	3.0	deg	
Non-signal output terminal voltage		V _{out}	—	0.2	0.4	V	
Standby mode output terminal impedance		Z _{out}	1.5	—	—	MΩ	Supply Vout = 3V

■Control Terminal

PARAMETER	STATUS	NOTE
STANDBY (6PIN)	OPEN	STANDBY
	H	STANDBY
	L	ACTIVE

■Physical dimensions

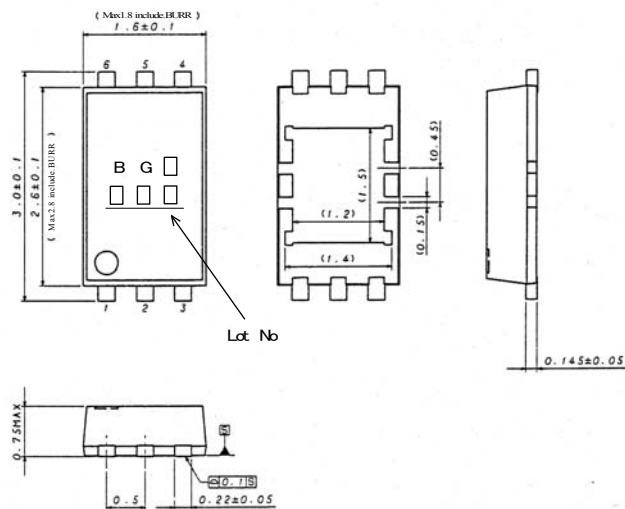


Fig1 HVSO6 (Plastic mold)

■ Application circuit example 1 (When output terminal is used sharing with input terminal)

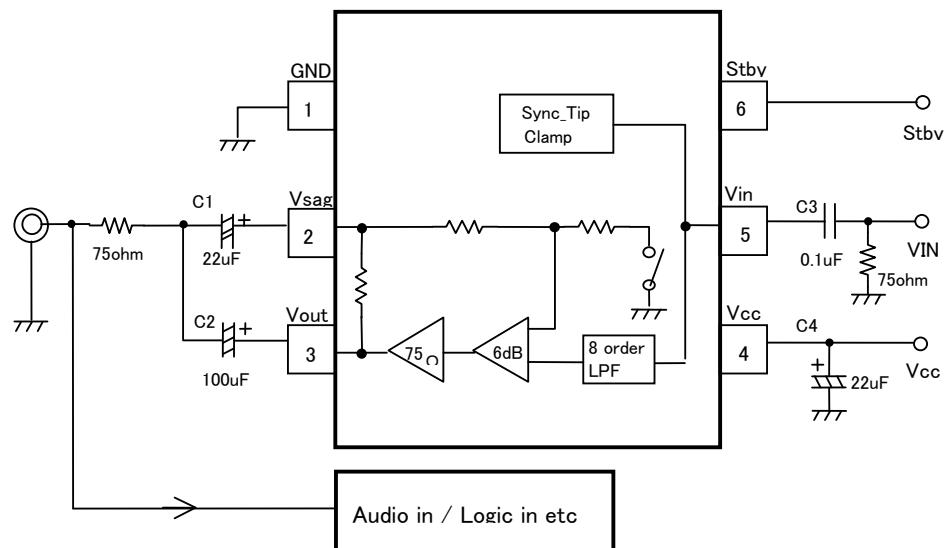
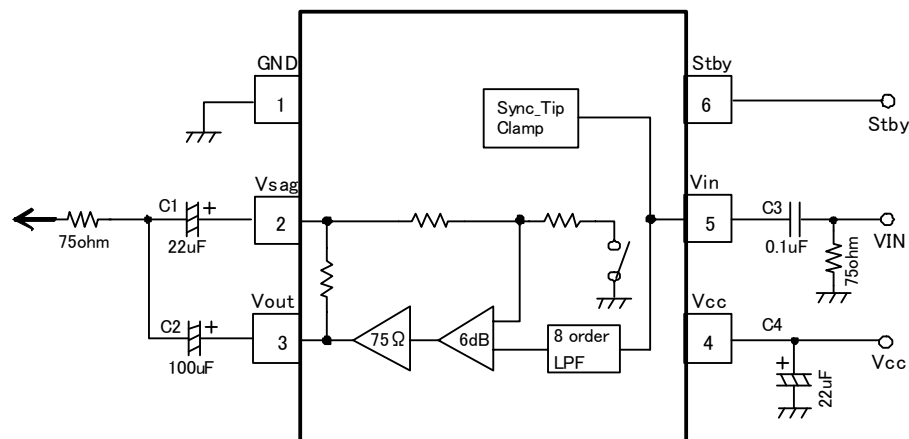


図 2-1

Since a video driver output becomes high impedance at the time of standby, even if it shares a video output terminal with an input terminal, operation of an input terminal is not influenced.

■ Application circuit example 2 (SAG correction)



V _{sag} Capacitor (C1)	33μF	33μF	33μF
V _{OUT} Capacitor (C2)	68μF	47μF	33μF

図 2-2

SAG correction

In order to make the SAG of the video signal as small as possible, we recommend the values of the application circuit diagram for output coupling capacitor capacitance.

If reducing capacitance due to the demands of miniaturization or the like, check the SAG characteristic for an alternating black and white bounce signal *1, H-bar signal *2, or other signal for which a SAG effect readily occurs and use a capacitance that satisfies the demands of the set being used.

As a reference, try the combinations shown below when reducing capacitance. As the capacitance of the VOUT capacitor is made smaller, SAG becomes greater.

*1, *2: TG-7 U705 unit or other

■ Application circuit example 3 (Using after removing output coupling capacitor)

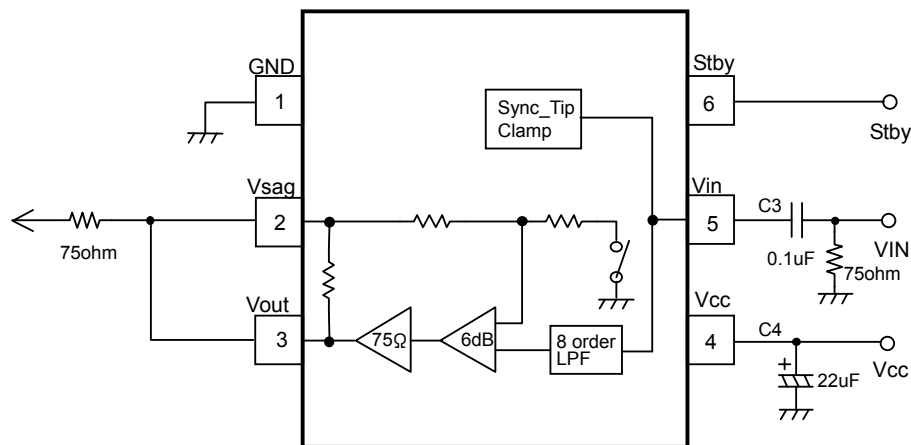


図 2-3

By eliminating the output coupling capacitor, not only can you reduce board space and product cost, but improvement of the SAG characteristic also can be realized due to the fact that the low-band frequency characteristic is improved.

However, since direct current will flow in a set connected on the opposite side due to eliminating the output coupling capacitor, pay close attention to the specifications of what is connected in conjunction with using it. Moreover, characteristics such as circuit current, differential gain, and differential phase differ as shown below.

Parameter	With Output Coupling Capacitor	Without Output Coupling Capacitor
Circuit Current (If no signal)	7.1 mA	7.8 mA
Circuit Current (If color bar signal output)	8.3 mA	14.3 mA
Differential Gain (DG)	0.7%	1.0%
Differential Phase (DP)	0.7°	0.3°

The values shown above are reference values. They are not guaranteed values

■ Caution of use

1) 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 the LSI.

2) GND potential

Make the GND pin voltage such that it is the lowest voltage even when operating below it. Actually confirm that the voltage of each pin does not become a lower voltage than the GND pin, including transient phenomena.

3) Shorts between pins and mis-installation

When mounting the LSI on a board, pay adequate attention to orientation and placement discrepancies of the LSI. If it is mis-installed and the power is turned on, the LSI may be damaged. It also may be damaged if it is shorted by a foreign substance coming between pins of the LSI or between a pin and a power supply or a pin and a GND.

4) Operation in strong magnetic fields

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

5) Input terminating resistance

Since it will become easy to come to the synch-tip part of a video output signal out of ripple if terminus impedance of an input terminal (5PIN) is made high, please use it less than 1.5kohm after sufficient evaluation also including the temperature characteristic.

6) Bypass capacitor

To minimize the risk of high-frequency oscillation, the power supply's bypass capacitor should be placed as close as possible to the Vcc pin.

Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.



Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

<http://www.rohm.com/contact/>