Structure Silicon Monolithic Integrated Circuit

Product name 4ch HD Video Drivers for DVD

Type **BH76071FJ**

Outer dimensions Fig.1 SOP-J14(Plastic Mold)

Block diagram Fig.2

Function

- Built in 4-outputs video drivers for CVBS, PY, PB and PR
- Enables two load drivers
- Composite※1：Built in 6.75MHz LPF
- Component※1：13.5MHz/30MHz LPF selectable
- Built in MUTE function

※1 Composite is a name for CVBS, Component is a names for PY, PB and PR.

Absolute Maximum Ratings（Ta = 25℃）

Parameter	Symbol	Ratings	Unit
Supply voltage	V	7.0	V
Power dissipation	Pd	※2 820	mW
Input voltage	VIN	-0.3～(VCC+0.3)	V
Storage temperature	Tstg	-55 ～ +125	℃

※2 Reduced by 8.2mW/℃ at Ta = 25℃ or higher.
When mounting on a (l) 70mm x (w) 70mm x (t) 1.6mm PCB board.(Glass epoxy substrate, 1layer)

Operation Range

Parameter	Symbol	Range	Unit
Supply voltage	VCC	4.5 ～ 5.5	V
Operating temperature	Topr	-40 ～ +85	℃

※ This product is not designed for protection against radioactive rays.

■ Electrical characteristics （Unless otherwise noted, Ta＝25℃, VCC=5.0V, RL=150Ω）

Item	Symbol	Limits			Unit	Conditions
		MIN.	TYP.	MAX.		
＜Whole circuit＞						
VCC current	I_{CC}	32	45	58	mA	No signal, 30MHz LPF
＜VIDEO part＞						
Voltage gain(CVBS)	G_{V1}	5.5	6.0	6.5	dB	Vin=1.0Vp-p, f=100kHz
Voltage gain(PY, PB,PR)	G_{V2}	5.5	6.0	6.5	dB	Vin=0.7Vp-p, f=100kHz
Maximum output level	V_{OMV}	2.6	2.9	－	Vp-p	THD=1.0% f=10kHz
6.75MHz LPF Frequency characteristics 1	G_{f1675}	-1.5	-0.5	0.5	dB	Vin=1.0Vp-p, f=6.75MHz/100kHz
13.5MHz LPF Frequency characteristics 1	G_{f1135}	-1.5	-0.5	0.5	dB	Vin=0.7Vp-p, f=13.5MHz/100kHz
30MHz LPF Frequency characteristics 1	G_{f1300}	-3.0	-1.0	1.0	dB	Vin=0.7Vp-p, f=30MHz/100kHz
6.75MHz LPF Frequency characteristics 2	G_{f2675}	－	-48	-30	dB	Vin=1.0Vp-p, f=27MHz/100kHz
13.5MHz LPF Frequency characteristics 2	G_{f2135}	－	-48	-30	dB	Vin=0.7Vp-p, f=54MHz/100kHz
30MHz LPF Frequency characteristics 2	G_{f2300}	－	-35	-20	dB	Vin=0.7Vp-p, f=74.25MHz/100kHz
MUTE attenuation	M_T	－	-65	-55	dB	Vin=1.0Vp-p, f=4.43MHz
Cross talk	C_T	－	-65	-55	dB	Vin=1.0Vp-p, f=4.43MHz
PB/PR_IN Input impedance	Z_{I4}	100	150	200	kΩ	
＜Control pin (6,7,8PIN)＞						
Input voltage H	V_{thH}	2.0	－	VCC	V	High level input voltage
Input voltage L	V_{thL}	0.0	－	0.8	V	Low level input voltage
Input impedance	R_{in}	100	150	200	kΩ	Between Control pin and GND

■ Control Specifications

Pin	Function
6pin (MUTE1)	Composite output(CVBS_OUT) MUTE control ※3 L：MUTE H：ACTIVE
7pin (MUTE2)	Component outputs(PY/PB/PR_OUT) MUTE control ※3 L：MUTE H：ACTIVE
8pin (LPF_SEL)	LPF selector for Component L：13.5MHz LPF H：30MHz LPF

※3 At MUTE mode, each output terminals usually outputs the bias voltage at no signal.

■ Outer Dimentions

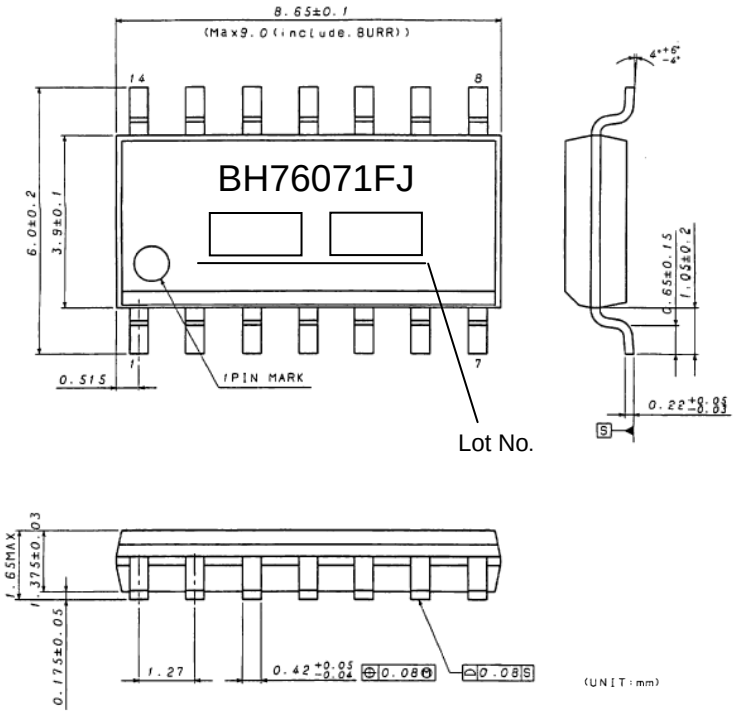
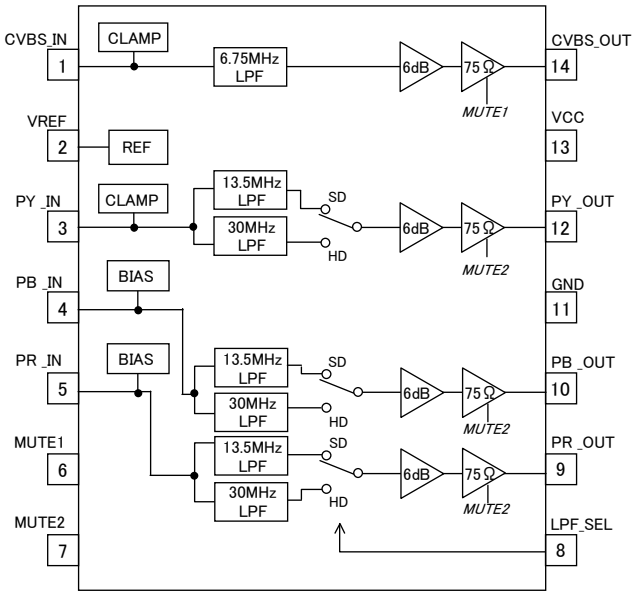


Fig.1. SOP-J14

■ Block Diagram



※ : Please use the impedance of the circuit connected to the input terminals(1 and 3pin) at 1kΩ or less.

Fig.2. Block diagram

■ Pin Number / Pin Name

No.	Pin Name	No.	Pin Name
1	CVBS_IN	8	LPF_SEL
2	VREF	9	PR_OUT
3	PY_IN	10	PB_OUT
4	PB_IN	11	GND
5	PR_IN	12	PY_OUT
6	MUTE1	13	VCC
7	MUTE2	14	CVBS_OUT

■ Cautions for use

(1) Although we are confident recommending the sample application circuit, carefully check their characteristics further when using them.
When modifying externally attached component constants before use, determine them so that
They have sufficient margins by taking into account variations in externally attached components and the Rohm IC, not only for static characteristics but also including transient characteristics.

(2) Absolute maximum ratings
If the absolute maximum ratings for applied voltage and/or operation temperature are exceeded, LSI damage may result. Therefore, do not apply voltage or use in a temperature that exceeds these absolute maximum ratings.
If it is possible that absolute maximum ratings will be exceeded, use a physical safety device such as a fuse and make sure that no conditions that might exceed the absolute maximum ratings will be applied to the LSI IC.

(3) GND potential
Regardless of the operation mode, the voltage of the GND pin should be at least the minimum voltage.
Actually check whether or not the voltage at each pin, including transient phenomena, is less than the GND pin voltage.

(4) Thermal design
The thermal design should be done using an ample margin that takes into consideration the allowable dissipation under actual use conditions. Perform thermal design in which there are adequate margins by taking into account the allowable power dissipation in actual states of use.

(5) Shorts between pins and mounting errors
When mounting LSI ICs onto the circuit board, make sure each LSI's orientation and position is correct.
The ICs may become damaged if they are not mounted correctly when the power is turned on.
Similarly, damage may also result if a short occurs, such as when a foreign object is positioned between pins in an IC, or between a pin and power supply or GND connection.

(6) Operation in strong electromagnetic field
When used within a strong electromagnetic field, evaluate carefully to avoid the risk of operation faults.

(7) Place the decoupling capacitor close to 13pin.

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