

STRUCTURE Silicon Monolithic Integrated Circuit

PRODUCT Wide Bandwidth video Driver for DVD recorder

Type

B H 7 6 0 2 F S

PACKAGE

S S O P — A 2 0

Functions

- 1) 3ch Video driver (Y, PB, or PR).
- 2) LPF control options (LPF1、LPF2, Through)
- 3) Includes DC output circuit for D pin control line (3ch)
- 4) D pin connect detection, inside power down function
- 5) Fast mode, compatible with I²C-BUS.
- 6) Inside DC_SHIFT circuit, No need input coupling capacitor

■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Supply Voltage	V	7 . 0	V
Power Dissipation	Pd	※ 1 7 5 0	mW
Operating Temperature Range	Topr	− 3 5 ~ + 7 5	°C
Storage Temperature Range	Tstg	− 5 5 ~ + 1 2 5	°C

※ 1 For operation in ambient temperature above Ta=25°C, the value reduced at 7.5mW/°C.

■ Operating Voltage Range (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operation Power Supply Voltage	SVCC, PVCC	4 . 5	5 . 0	5 . 2 5	V

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

※ Same power source must be used for S_VCC and P_VCC.

※ Wrong action is likely to be triggered when the Enter of this integrated circuit or an output terminal is connected to the signal line of the other power source, the surface connection terminal, and so on in the state that a power source is not supplied by this integrated circuit. Do caution, a countermeasure furry.

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

- 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-visua l equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys). Should you intend to use this product with equipment or devices which require an extremely high level or reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

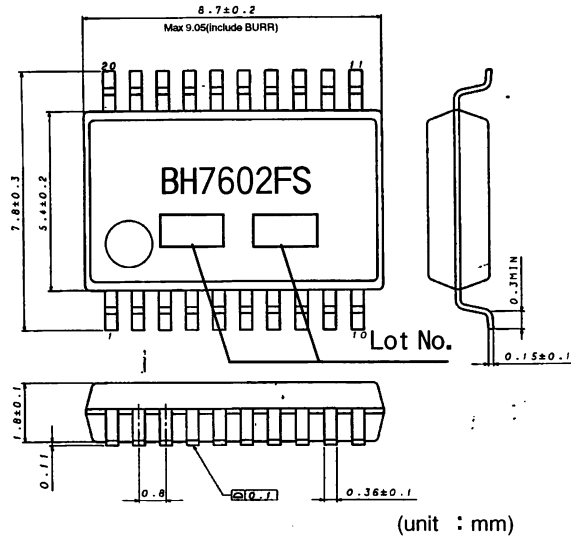
- ROHM assumes no responsibility for use of any circuits described herein, conveys no license under any patent or other right, and makes no representations that the circuits are free from patent infringement.

Electrical Characteristics (Ta=25°C, P_VCC=S_VCC=5.0V, unless otherwise specified) .

Parameter	Symbol	Limit			Unit	Conditions
		MIN.	TYP.	MAX.		
< All Circuits >						
VCC Circuit Current	I _{VCC}	44	56	68	mA	No Signal
VC Circuit Current PD	I _{PD}	—	1.5	3.0	mA	Power Down
< VIDEO Part > ※ 2						
Y/PB/PR OUT Voltage Gain	G ₂₀	5.5	6.0	6.5	dB	Vin=1.0Vpp , f=100kHz
Y/PB/PR OUT Maximum Output Level	V _{OM20}	2.6	2.9	—	Vp-p	Vin: THD=1.0% f=10kHz
Y OUT LPF1 Frequency Characteristic 1	F ₁₂₀₁	—5.0	—1.5	1.0	dB	Vin=1.0Vpp , f=30M/100kHz, LPF1:ON
Y OUT LPF2 Frequency Characteristic 1	F ₂₂₀₁	—1.5	—0.5	0.5	dB	Vin=1.0Vpp , f=13.5M/100kHz, LPF2:ON
PB/PR OUT LPF1 Frequency Characteristic 1	F ₁₁₇₁	—5.0	—1.5	1.0	dB	Vin=1.0Vpp , f=15M/100kHz, LPF1:ON
PB/PR OUT LPF2 Frequency Characteristic 1	F ₂₁₇₁	—1.5	—0.5	0.5	dB	Vin=1.0Vpp , f=6.75M/100kHz, LPF2:ON
Y OUT LPF1 Frequency Characteristic 2	F ₁₂₀₂	—	—45	—28	dB	Vin=1.0Vpp , f=74.25M/100kHz, LPF1:ON
Y OUT LPF2 Frequency Characteristic 2	F ₂₂₀₂	—	—40	—28	dB	Vin=1.0Vpp , f=54M/100kHz, LPF2:ON
PB/PR OUT LPF1 Frequency Characteristic 2	F ₁₁₇₂	—	—45	—28	dB	Vin=1.0Vpp , f=37.125M/100kHz, LPF1:ON
PB/PR OUT LPF2 Frequency Characteristic 2	F ₂₁₇₂	—	—40	—28	dB	Vin=1.0Vpp , f=27M/100kHz, LPF2:ON
MUTE Attenuation	M _{T20}	—	—65	—55	dB	Vin=1.0Vpp , f=4.43MHz
Channel Crosstalk	M _{TCH}	—	—65	—55	dB	Vin=1.0Vpp , f=4.43MHz
< D_DET >						
Input Voltage H	V _{I14H}	4.0	—	Vcc	V	
Input Voltage L	V _{I14L}	0.0	—	1.0	V	
Input Impedance	Z _{I14}	100	150	200	kΩ	Pull Up Resistance
< LINE_OUT >						
Output Voltage H	V _{O13H}	4.2	4.5	4.8	V	
Output Voltage M	V _{O13M}	1.7	2.0	2.3	V	
Output Voltage L	V _{O13L}	0.0	0.1	0.5	V	
Output Impedance	Z _{O13}	0.5	0.9	1.3	kΩ	
< ADR >						
Input Voltage H	V _{I8H}	2.0	—	Vcc	V	
Input Voltage L	V _{I8L}	0.0	—	1.0	V	
Input Impedance	Z _{I8}	65	100	135	kΩ	Pull Down Resistance
< SCL, SDA >						
Input Voltage H	V _{I9H}	2.0	—	Vcc	V	
Input Voltage L	V _{I9L}	0.0	—	1.0	V	
Input Bias Current	I _{B9}	—10	0	10	uA	

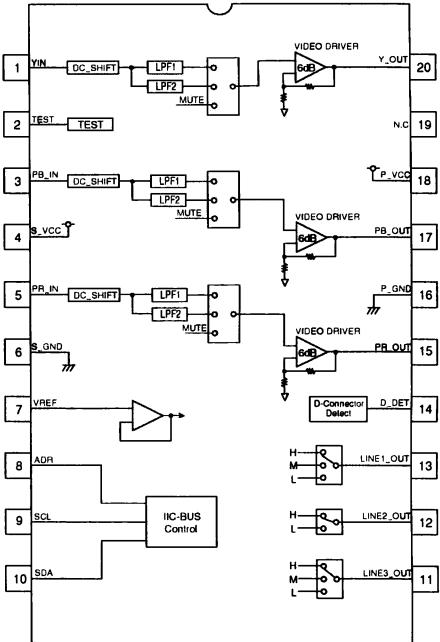
※ 2 VIDEO part input signal : 0.5~1.5V (1.0Vp-p)sine wave, VREF pin : 1.0V

■ 外形寸法図



PKG : SSOP-A20

■ BLOCK DIAGRAM



■ Pin number and pin name

PIN No	PIN NAME	PIN No.	PIN NAME
1	YIN	11	LINE3_OUT
2	TEST	12	LINE2_OUT
3	PB_IN	13	LINE1_OUT
4	S_VCC	14	D_DET
5	PR_IN	15	PR_OUT
6	S_GND	16	P_GND
7	VREF	17	PB_OUT
8	ADR	18	P_VCC
9	SCL	19	N.C
10	SDA	20	Y_OUT

■ Caution on use

- (1) Numbers and data in entries represents design values and are not guaranteed values of the items.
- (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. In a case when absolute maximum ratings are exceeded, use fuses or other physical safety measures and investigate how to avoid such condition.
- (3) GND potential
Make the GND pin voltage such that it is the lowest voltage even when operating below 0V. Actually confirm that the voltage of each pin does not become lower than the GND pin, even in transient phenomena.
- (4) Thermal design
For thermal design, add adequate margins for actual power dissipation. Proper circuit function is guaranteed when used within operating temperature (-35°C~+75°C). Installation of fan and proper PCB layout should be applied to circulate air around the IC. This is a measure heat dissipation.
- (5) Shorts between pins and misinstallation
When mounting the LSI in a board, pay adequate attention to orientation and placement discrepancies of the LSI. If it is misinstalled 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.
- (6) Operation in strong magnetic fields
Adequately evaluate use in a strong magnetic field, since there is a possibility of malfunction.
- (7) Supply voltage of operation
Although proper operation is guaranteed within the range of supply voltage (4.5V~5.25V) provided that each element functions properly and applied parameters are correct.
- (8) Place the first resistor near the driver output of the IC.
- (9) Place coupling capacitor near the pins as possible.
- (10) I²C-BUS is compatible with fast mode of Version 2.0. It is not compatible with HS mode.

Notes

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Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.

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