STRUCTURE Silicon Monolithic Integrated Circuit

PRODUCTS Audio Switch IC for DVD Recorder

TYPE BD3825FS

PACKAGE Figure −1 SSOP−A24 (Plastic Mold)

BLOCK DIAGRAM Figure −2

Feature

1) VCC ±5V (for audio signal) +12V (for function SW)
   Audio SW (C-MOS analog switch configuration)
2) 3 input 1 output SW, (2 circuits built-in. With MUTE function.)
3) 2 input 1 output SW, (2 circuits built-in. With MUTE function.)
4) THD 0.007% typ
5) S/N 90dB typ
6) Crosstalk 90dB typ
7) ON Resistance 300Ω max
8) Function SW output with 2 built-in circuits

Absolute Maximum Rating (Ta = 25℃)

Item	Symbol	Rating	Unit
Power Supply Voltage 1	V_1	±6.0	V
Power Supply Voltage 2	V_2	+13.5	V
Power Dissipation	Pd	800 *1	mW
Operating Temperature Range	Topr	−25 ~ +75	℃
Storage Temperature Range	Tstg	−55 ~ +125	℃

※1 When absolute temperature exceeds Ta=25℃, the rated value is reduced by 8.0mW/℃.

Operating Range

Item	Symbol	Limit	Unit
Supply Voltage 1	Vcc1	±4.5~±5.5	V
Supply Voltage 2	Vcc2	11.5~12.5	V

This product design is not intended for use involving radioactive rays.

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). Should you intend to use this product with equipment or devices which require an extremely high level of 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.

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■ Electrical characteristics (Unless otherwise specified, Vcc1=±5.0V, Vcc2=12V, Ta=25℃)

Item	Symbol	Limit			Unit	Condition
		MIN.	TYP.	MAX.		
<All Circuits>						
Circuit Current 1	I_{ATYP1}	2.5	5.0	7.5	mA	Vcc1=±5V
Circuit Current 2	I_{ATYP2}	5.0	10.0	15.0	mA	Vcc2=12V
<AUX, L1_R,L OUT>						
Frequency Characteristic	F_{FC}	-1.0	0.0	1.0	dB	Vin=2Vrms, f=20Hz/100kHz R_L=47kΩ
Distortion Factor	F_{DIS}	-	0.007	0.1	%	Vin=2.2Vrms, f=1kHz R_L=47kΩ
S/N	F_{SN}	80	90	-	dB	Vin=2Vrms, f=1kHz, LPF OFF
ON Resistance	R_{ON}	-	200	300	Ω	Vin=0V
MUTE Attenuation	F_{MUTE}	-	-80	-75	dB	Vin=2Vrms, f=1kHz R_L=47kΩ
ASW1 SW Crosstalk	F_{SWCRS1}	-	-90	-85	dB	Vin=2Vrms, f=1kHz
ASW2 Crosstalk	F_{SWCRS2}	-	-90	-85	dB	Vin=2Vrms, f=1kHz
Channel Crosstalk (AUX_Lch,Rch)	F_{CHCRS1}	-	-90	-85	dB	Vin=2Vrms, f=1kHz
Channel Crosstalk (L1_Lch,Rch)	F_{CHCRS2}	-	-90	-85	dB	Vin=2Vrms, f=1kHz
FS_AUX,FS_L1 Output voltage H	V_{FSOH}	10.0	11.0	12.0	V	R_L=10kΩ
FS_AUX,FS_L1 Output voltage M	V_{FSOM}	5	5.75	6.5	V	R_L =10kΩ
FS_AUX,FS_L1 Output voltage L	V_{FSOL}	0	0	1.5	V	R_L =10kΩ
ASW1,2,3,4 Input Voltage H	V_{ASWH}	2.0	-	+Vcc1	V	
ASW1,2,3,4 Input voltage L	V_{ASWL}	0	-	1.0	V	
FS_AUX, FS_L1 Input voltage H	V_{FSIH}	3.9	-	+Vcc1	V	
FS_AUX, FS_L1 Input Voltage M	V_{FSIM}	1.65	-	3.1	V	
FS_AUX, FS_L1 Input voltage L	V_{FSIL}	0	-	0.85	V	

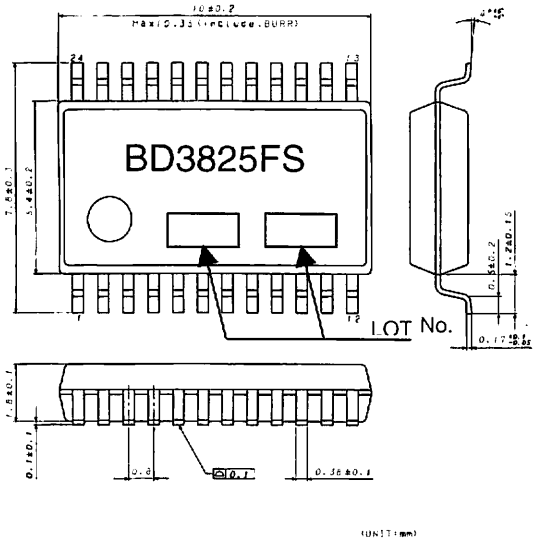
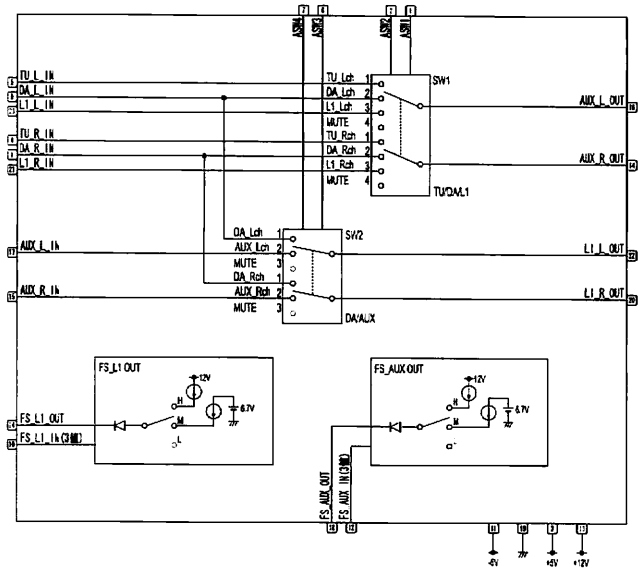


Figure - 1 PACKAGE
（S S O P－A 2 4）



Figure－2． BLOCK DIAGRAM

■ PIN Assignment

PIN No.	PIN NAME	PIN No.	PIN NAME
1	ASW1	13	+12V
2	ASW2	14	AUX_R_OUT
3	+5V	15	AUX_R_IN
4	TU_R_IN	16	AUX_L_OUT
5	TU_L_IN	17	AUX_L_IN
6	ASW3	18	FS_AUX_OUT
7	ASW4	19	GND
8	DA_R_IN	20	L1_R_OUT
9	DA_L_IN	21	L1_R_IN
10	FS_L!_IN	22	L1_L_OUT
11	-5V	23	L1_L_IN
12	FS_AUX_IN	24	FS_L1_OUT

■Cautions on use

(1) Numbers and data in entries are representative design values and are not guaranteed values of the items.
(2) Although we are confident in recommending the sample application circuits, 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 LSI, not only for static characteristics but also including transient characteristics.
(3) 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.
(4) 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.
(5) Thermal design
Perform thermal design in which there are adequate margins by taking into account the allowable power dissipation in actual states of use.
(6) Shorts between pins and misinstallation
When mounting the LSI on 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.
(7) Operation in strong magnetic fields
Adequately evaluate use in a strong magnetic, since there is a possibility of malfunction.

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