

Structure : Silicon Monolithic Integrated Circuit

Product : 8ch Volume with 9ch input selector

Type : **BD3452KS**

Function :
 •8ch Master volume(0 to -99dB, MUTE, 1dB/STEP)
 •Tone(-14dB to +14dB, 2dB/STEP) , Input gain, Output gain

○Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Power Supply voltage	VCC	7.5 ※1	V
	VEE	-7.5	
Input voltage	VIN	VCC+0.3 to VEE-0.3	V
Power dissipation	Pd	1300※2	mW
Operating temperature	Topr	-20 to +75	°C
Storage temperature	Tastg	-55 to +125	°C

※1 Please note that, when any voltage is set to the VCC only, the IC may be destroyed due to excessive current even if the voltage is within the set voltage range shown in the table above.

Be sure to set the voltage to VEE and VCC at the same time or set the voltage to VEE first.

※2 This value decreases at 13mW/°C for Ta=25°C or more.

A standard board, 70 × 70 × 1.6mm, shall be mounted.

○Operating Voltage Range (Basic operation shall be available upon Ta=25°C.)

	Symbol	Range	Unit
Power supply	VCC-GND	6.5 to 7.3	V
	VEE-GND	-6.5 to -7.3	

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.

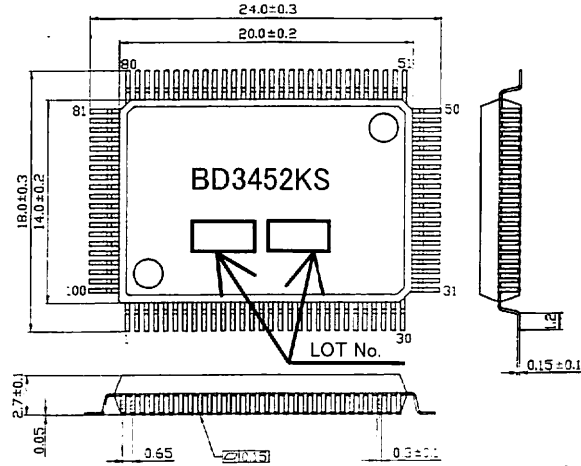
○Electrical Characteristics

Unless specified particularly, Ta=25°C, VCC=7V, VEE=-7V, f=1kHz, VIN=1Vrms, RL=10kΩ, Rg=600Ω
 Input Gain=0dB, Master volume=0dB, Output gain=0dB

Parameter	Symbol	Limit			Unit	Conditions	
		Min	Typ	Max			
Circuit current	VCC-GND	IQ	—	20	40	mA	No signal
	VEE-GND		-40	-20	—		
Output voltage gain	Gv	-2	0	2	dB		
Total harmonic distortion ratio	THD	—	0.0006	0.03	%	BW=400 to 30kHz	
Maximum output voltage	Vomax	3.6	4.2	—	Vrms	THD=1%	
Output noise voltage	Vno	—	1.4	12	μ Vrms	Rg=0Ω, BW=IHF-A	
Residual output noise voltage	Vnor	—	1	8	μ Vrms	Rg=0Ω, BW=IHF-A, Volume=MUTE	
Cross-talk between channels	CTC	—	-95	-80	dB	Rg=0Ω, BW=IHF-A	
Cross-talk between selectors	CTS	—	-95	-80	dB	Rg=0Ω, BW=IHF-A	
Input Impedance	Rin	32	47	62	kΩ		
Volume Output voltage gain	GvV	-2	0	2	dB		
Volume Total harmonic distortion ratio	THDV	—	0.0006	0.03	%	BW=400 to 30kHz	
Volume Residual output noise voltage	VnorV	—	1	8	μ Vrms	BW=IHF-A, Rg=0Ω, Volume=MUTE	
Volume set error	VOLE1	-0.5	0	0.5	dB	Volume=0dB, VIN=3Vrms	
Maximum attenuation	VOLmin	—	-115	-105	dB	VIN=3Vrms, BW=IHF-A	
Input gain control range	GIG	10	12	14	dB	Input Gain=12dB, VIN=0.3Vrms	
Output gain control range	GOG	13	15	17	dB	Output Gain=15dB, VIN=0.3Vrms	
Output gain set error	GOE	-0.5	0	0.5	dB	Output Gain=0dB, VIN=0.3Vrms	
Recout Output impedance	RoutR	—	20	100	Ω		
Recout Voltage gain	GVR	-2	0	2	dB	(*)RL=10kΩ	
Recout Total harmonic distortion ratio	THDR	—	0.005	0.09	%	BW=400 to 30kHz, (*)RL=10kΩ	
Port H output	PH	4.0	4.9	5.4	V	RL=10kΩ	
Port output current	PI	—	—	1.0	mA		

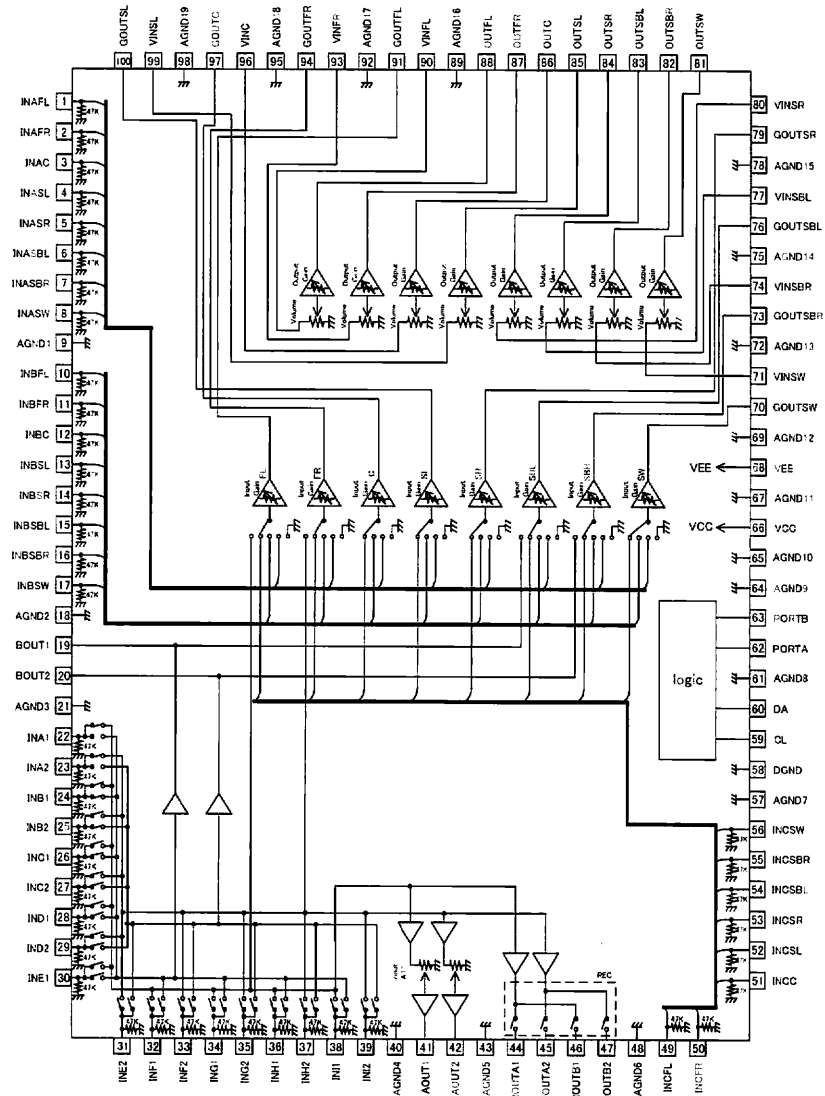
※This product is not of “anti radiation design”.

(*) Please set total load resistance (RL) of RECOUT, when two of RECOUT are ON.



SQFP-100 (Unit:mm)

Block Diagram



○Terminal Number/ Terminal Name

Terminal Number	Terminal Name	Terminal Number	Terminal Name	Terminal Number	Terminal Name	Terminal Number	Terminal Name
1	INAF1	26	INC1	51	INCC	76	GOUTSBL
2	INAFR	27	INC2	52	INCSL	77	VINSBL
3	INAC	28	IND1	53	INCSR	78	AGND15
4	INASL	29	IND2	54	INCSBL	79	GOUTSR
5	INASR	30	INE1	55	INCSBR	80	VINSR
6	INASBL	31	INE2	56	INCSW	81	OUTSW
7	INASBR	31	INF1	57	AGND7	82	OUTSBR
8	INASW	32	INF2	58	DGND	83	OUTSBL
9	AGND1	33	ING1	59	CL	84	OUTSR
10	INBFL	35	ING2	60	DA	85	OUTSL
11	INBFR	36	INH1	61	AGND8	86	OUTC
12	INBC	37	INH2	62	PORTA	87	OUTFR
13	INBSL	38	INI1	63	PORTB	88	OUTFL
14	INBSR	39	INI2	64	AGND9	89	AGND16
15	INBSBL	40	AGND4	65	AGND10	90	VINFL
16	INBSBR	41	AOUT1	66	VCC	91	GOUTFL
17	INBSW	42	AOUT2	67	AGND11	92	AGND17
18	AGND2	43	AGND5	68	VEE	93	VINFR
19	BOUT1	44	ROUTA1	69	AGND12	94	GOUTFR
20	BOUT2	45	ROUTA2	70	GOUTSW	95	AGND18
21	AGND3	46	ROUTB1	71	VINSW	96	VINC
22	INA1	47	ROUTB2	72	AGND13	97	GOUTC
23	INA2	48	AGND6	73	GOUTSBR	98	AGND19
24	INB1	49	INCFL	74	VINSBR	99	VINSL
25	INB2	50	INCFR	75	AGND14	100	GOUTSL

○Cautions 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) VEE potential

Make the VEE pin voltage such that it is the lowest voltage even when operating below it.

(3) Thermal design

Perform thermal design in which there are adequate margins by taking into account the allowable power dissipation (Pd) in actual states of use.

(4) Operation in strong magnetic fields

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

Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are 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 these products 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.

About Export Control Order in Japan

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.

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

Please contact our sales offices for details ;

U.S.A / San Diego	TEL : +1(858)625-3630	FAX : +1(858)625-3670
Atlanta	TEL : +1(770)754-5972	FAX : +1(770)754-0691
Dallas	TEL : +1(972)312-8818	FAX : +1(972)312-0330
Germany / Dusseldorf	TEL : +49(2154)9210	FAX : +49(2154)921400
United Kingdom / London	TEL : +44(1)908-282-666	FAX : +44(1)908-282-528
France / Paris	TEL : +33(0)1 56 97 30 60	FAX : +33(0) 1 56 97 30 80
China / Hong Kong	TEL : +852(2)740-6262	FAX : +852(2)375-8971
Shanghai	TEL : +86(21)6279-2727	FAX : +86(21)6247-2066
Dilian	TEL : +86(411)8230-8549	FAX : +86(411)8230-8537
Beijing	TEL : +86(10)8525-2483	FAX : +86(10)8525-2489
Taiwan / Taipei	TEL : +866(2)2500-6956	FAX : +866(2)2503-2869
Korea / Seoul	TEL : +82(2)8182-700	FAX : +82(2)8182-715
Singapore	TEL : +65-6332-2322	FAX : +65-6332-5662
Malaysia / Kuala Lumpur	TEL : +60(3)7958-8355	FAX : +60(3)7958-8377
Philippines / Manila	TEL : +63(2)807-6872	FAX : +63(2)809-1422
Thailand / Bangkok	TEL : +66(2)254-4890	FAX : +66(2)256-6334

Japan /
(Internal Sales)

Tokyo	2-1-1, Yaesu, Chuo-ku, Tokyo 104-0082	TEL : +81(3)5203-0321	FAX : +81(3)5203-0300
Yokohama	2-4-8, Shin Yokohama, Kohoku-ku, Yokohama, Kanagawa 222-8575	TEL : +81(45)476-2131	FAX : +81(45)476-2128
Nagoya	Dainagayo Building 9F 3-28-12, Meieki, Nakamura-ku, Nagoya, Aichi 450-0002	TEL : +81(52)581-8521	FAX : +81(52)561-2173
Kyoto	579-32 Higashi Shiokouji-cho, Karasuma Nishi-iru, Shiokoujidori, Shimogyo-ku, Kyoto 600-8216	TEL : +81(75)311-2121	FAX : +81(75)314-6559

(Contact address for overseas customers in Japan)

Yokohama	TEL : +81(45)476-9270	FAX : +81(045)476-9271
----------	-----------------------	------------------------