

Sound Processors for BOOM BOX / Mini-component Stereo



Single Power Supply Sound Processors with Built-in Pre Amplifier for Tape Recording and Play Back (With Integrated 2-/3- band Equalizer)

BD3401KS2, BD3402KS2

No.10086EAT03

●Description

The Sound Processor with built-in record/play functions for cassette players, is suited for sound quality products such as, BOOM BOX, mini- and micro-audio systems. It incorporates various functions ranging from audio source selectors to preamplifiers at the front stage, preamplifier for cassette recording/playing, and a 2-wire serial bus.

●Features

- 1) Provides Surround and Bass Boost with the Soft-switching feature to reduce the shock sound at switching (BD3401KS2)
 - 2) Provides a specialized power supply terminal in a digital circuit, in order to set and maintain the state inside the IC by the minute stand-by current.
 - 3) Built-in preamplifier for cassette recording/playing allows for minimal external components, freeing up board space.
 - 4) Arranges all I/O terminals to a single point and allows easy PCB routing.
 - 5) Volume and Tone implemented with a resistance ladder circuit; achieving high performance with low noise and low distortion
 - 6) Energy-saving design resulting in low current consumption, by utilizing the BiCMOS process.
- It has the advantage in quality over the scaling down the power heat control of the internal regulators.

●Applications

BOOM BOX, mini-audio systems, and micro-audio systems.

●Product lineup

Parameter	BD3401KS2	BD3402KS2
Equalizer	3 band(BASS, MIDDLE, TREBLE)	2 band(BASS, TREBLE)
Volume	0 to -44dB/2dB step -44 to -76dB/4dB step, -∞dB	0 to -44dB/2dB step -44 to -76dB/4dB step, -∞dB
Cassette Recording/Playing Amplifier	○	○
Karaoke	○	-
Microphone Input	○	-
Subwoofer Output	○	-
Output for Spectrum Analyzer	○	-
Surround	○	-
Bass Boost	○	-
Package	SQFP-T64	SQFP-T64

●Absolute maximum ratings (Ta=25°C)

Items	Symbol	Ratings	Unit
Power Supply Voltage	Vcc	10	V
	Vdd	6	V
Power Dissipation	Pd	1200*	mW
Input Voltage Range	Vin	GND-0.3 to VCC+0.3	V
Operating Temperature Range	Topr	-25 to +75	°C
Storage Temperature Range	Tstg	-55 to +125	°C

* Reduced by 12 mW/°C over 25°C, when installed on the standard board (size: 70 × 70 × 1.6mm).

●Operating voltage range

Device Name	Symbol	Range	Unit
BD3401KS2	Vcc	8 to 9.5	V
BD3402KS2	Vdd	3 to 5.5	

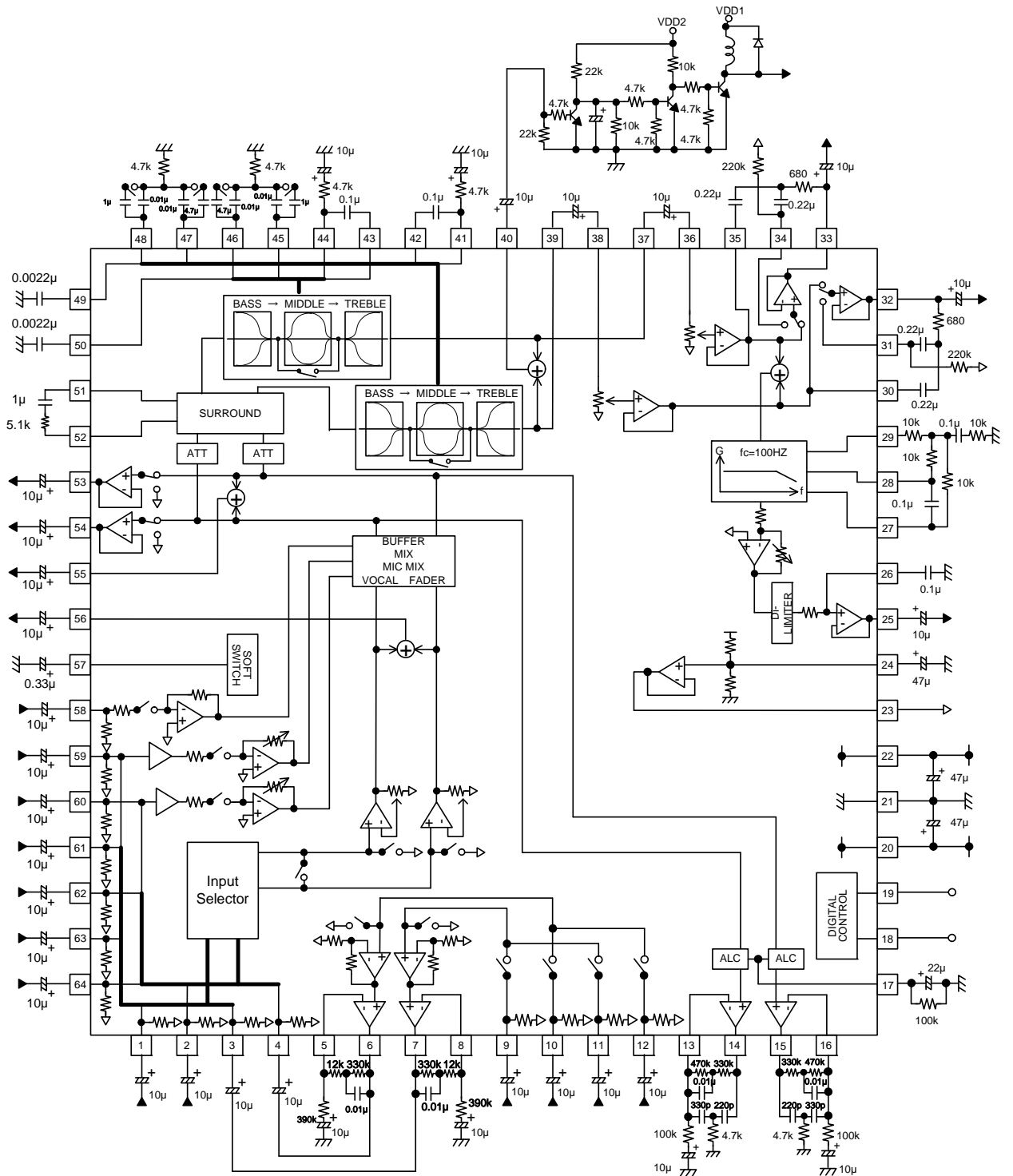
●Pin description

(BD3401KS2)

Pin No.	Pin Name	Description	Pin No.	Pin Name	Description
1	D1	1ch input pin D	33	VOLOUT1	1ch output pin
2	D2	2ch input pin D	34	BBNF1	1ch bass boost filter setting pin
3	E1	1ch input pin E	35	BBIN1	1ch bass boost filter setting pin
4	E2	2ch input pin E	36	VIN1	1ch volume input pin
5	PBNF2	2ch PB filter setting pin	37	TONE OUT1	1ch tone output pin
6	PBOUT2	2ch PB output pin	38	VIN2	2ch volume input pin
7	PBOUT1	1ch PB output pin	39	TONE OUT2	2ch tone output pin
8	PBNF1	1ch PB filter setting pin	40	AMS OUT	AMS output pin
9	TAPE A1	1ch TAPE input pin A	41	BNF2	2ch bass filter setting pin
10	TAPE A2	2ch TAPE input pin A	42	BOUT2	2ch bass filter setting pin
11	TAPE B1	1ch TAPE input pin B	43	BOUT1	1ch bass filter setting pin
12	TAPE B2	2ch TAPE input pin B	44	BNF1	1ch bass filter setting pin
13	RECNF2	2ch REC filter setting pin	45	MNF1	1ch middle filter setting pin
14	RECOUT2	2ch REC output pin	46	MOUT1	1ch middle filter setting pin
15	RECOUT1	1ch REC output pin	47	MOUT2	2ch middle filter setting pin
16	RECNF1	1ch REC filter setting pin	48	MNF2	2ch middle filter setting pin
17	ALC	ALC time constant setting pin	49	TNF2	2ch treble filter setting pin
18	SC	Serial clock input pin	50	TNF1	1ch treble filter setting pin
19	SI	Serial data input pin	51	SUR1	Surround setting pin
20	VDD	Digital power supply pin	52	SUR2	Surround setting pin
21	GND	Ground pin	53	LINEOUT2	2chLINE output pin
22	VCC	Analog power supply pin	54	LINEOUT1	1chLINE output pin
23	1/2VCC	1/2VCC output pin	55	SAOUT2	Spectrum Analyzer output pin 2
24	FILTER	1/2 VCC pin	56	SAOUT1	Spectrum Analyzer output pin 1
25	SW OUT	Subwoofer output pin	57	CAP	Time constant setting pin for absorbing switching shock sound
26	LF4	Primary LPF setting pin	58	MIC	MIC input pin A
27	LF3	Secondary LPF setting pin	59	A1	1ch input pin A
28	LF2	Secondary LPF setting pin	60	A2	2ch input pin A
29	LF1	Secondary LPF setting pin	61	B1	1ch input pin B
30	BBIN2	2ch bass boost filter setting pin	62	B2	2ch input pin B
31	BBNF2	2ch bass boost filter setting pin	63	C1	1ch input pin C
32	VOL OUT2	2ch output pin	64	C2	2ch input pin C

● Block diagram, application circuit, pin assignment

(BD3401KS2)



UNIT
RESISTANCE : Ω
CAPACITANCE : F

Fig.2