High- performance 5.1ch electronic volume

BD3814FV

BD3814FV is a sound processor IC. This IC incorporates volume, bass and treble functions into a single chip that are necessary for AV receivers and mini-component stereos.
Low distortion, low noise and wide dynamic range can be achieved by using the Bi-CMOS process.

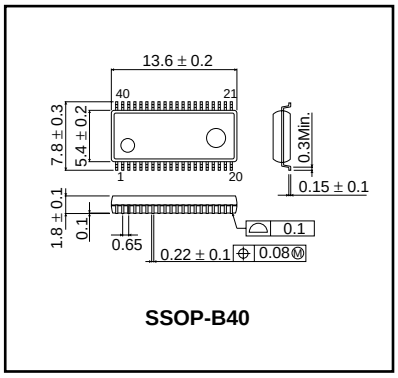
●Applications

AV receiver, mini stereo set and TV.

●Features

1) Dynamic range : 132dB (Tone by-pass, VOL=MUTE, IHF-A)
2) Master volume is 6ch-Independent volume (0~95dB, Mute, 1dB/Step). Low residual noise with Resistor ladder volume and the shock sound in changing is reducing.
3) It is becoming a low consumption electric current design by using the Bi-CMOS process.
4) Maximum output voltage : 4.3Vrms (V_{CC}=7V, V_{EE}= -7V, RL=10kΩ).
5) Built-in two OP amplifiers.
6) Serial data control of 2-wire type (correspond to 3.3V and 5V).

●External dimensions (Unit : mm)



SSOP-B40

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	±5 to ±7.3	V
Power dissipation	Pd	900 *	mW
Operating temperature range	Topr	−20 to +75	℃
Storage temperature range	Tstg	−55 to +125	℃

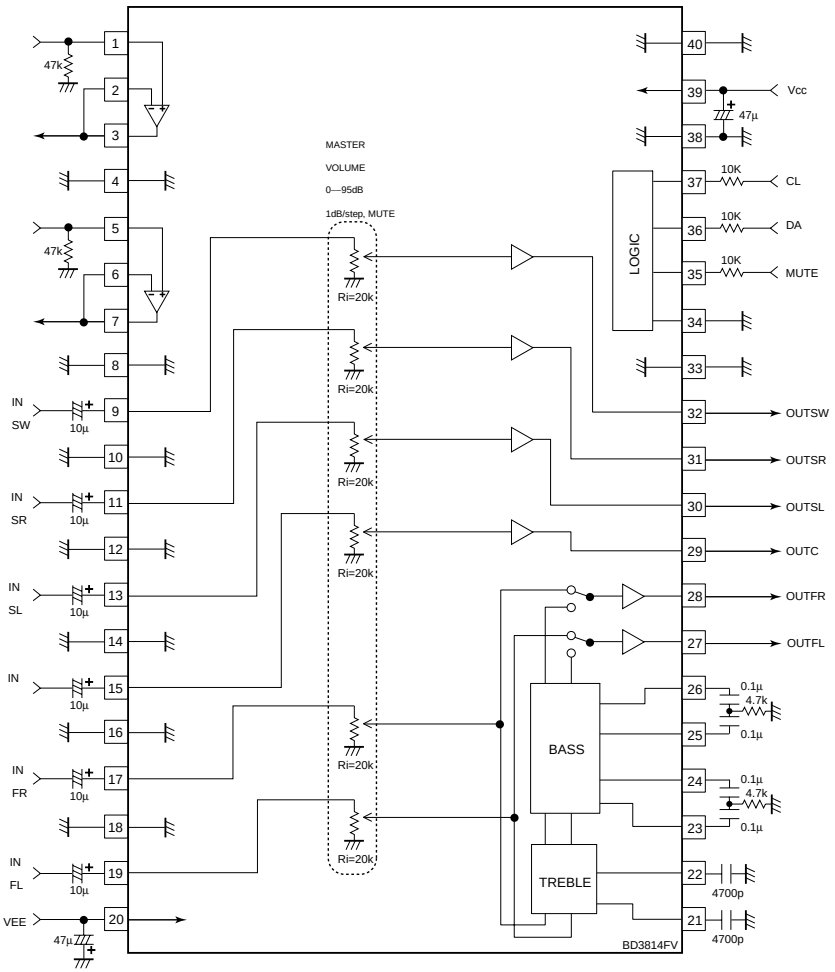
* This value decreases 9mW/ C for Ta=25℃ or more.
A standard board, 70 x 70 x 1.6mm, shall be mounted.

●Electrical characteristic curves

(Unless otherwise noted : Ta=25°C, V_{CC}=7V, V_{EE}=1Vrms, f=1kHz, V_{IN}=1Vrms, RL=10kΩ, Rg=600Ω, Master volume=0dB, Bass and Treble=0dB)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current	Pin39	IQ	−	7	17	mA	No signal
	Pin20						
Output voltage gain		Gv	−2	0	2	dB	Measure : Pin27,28,29,30,31,32
Total harmonic distortion ratio		THD	−	0.001	0.03	%	Measure : Pin27,28,29,30,31,32,BW=400~30kHz
Maximum output voltage		Vomax	3.6	4.3	−	Vrms	Measure : Pin27,28,29,30,31,32,THD=1%
Output noise voltage		Vno	−	1.0	6.0	μVrms	Measure : Pin27,28,Tone:By-pass, Rg=0Ω, BW=IHF-A
			−	1.7	10		Measure : Pin27,28, Tone:ON, Rg=0Ω, BW=IHF−A
Cross-talk between channels		CTCRC	−	−95	−80	dB	Measure : Pin27,28 (OUTFL) Rg=0Ω, BW=IHF−A, Reference : Pin28 (OUTFR)=1Vrms
Input impedance V		RinV	14	20	26	kΩ	Measure : Pin27,28,29,30,31,32
Maximum attenuation		Vmin	−	−115	−105	dB	Measure : Pin27,28,29,30,31,32, VIN=3Vrms, BW=IHF−A
Residual noise voltage		Vnom	−	1.0	6.0	μVrms	Measure : Pin27,28, Tone:By-pass, Rg=0Ω, BW=IHF−A
Treble maximum boost gain		GTB	12	14	16	dB	Measure : Pin27,28, f=15kHz, VIN=0.4Vrms
Bass maximum boost gain		GBB	12	14	16	dB	Measure : Pin27,28, f=100Hz, VIN=0.4Vrms

●Application Circuit



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