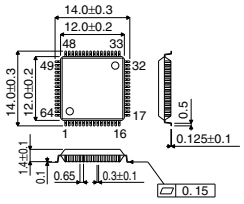
Sound Processor IC
BH3878KS2

●Description

BH3878KS2 is a sound controller IC for mini component stereo. 5-channel input selector, vocal fader, volume, surround, 5-band graphic equalizer, dynamic bass, and 5-band spectrum analyzer are all integrated into this single chip. Switching noise is reduced when volume, vocal fader, surround and dynamic bass are changed by soft switch.

●Dimension (Units : mm)



SQFP-T64

●Features

1) All in one chip IC incorporating functions of volume, tone, and spectrum analyzer.
2) Soft switching that can reduce the stepping switching noise when volume, mode selector, surround, dynamic bass and the gain of graphic equalizer are switched.
3) 5-channel input selector, mode selector, volume, surround graphic equalizer, dynamic bass, and spectrum analyzer can be controlled by serial control from micro controller.
4) Built-in matrix surround, B.P.F for spectrum analyzer.
5) Low distortion, low noise by BiCMOS process using resistance ladder type volume.
6) Mode of dynamic bass and bi-amplifier can be switched.

●Applications

Mini component stereo, micro component stereo, CD radio cassette player, TV

●Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc	10.0	V
Power dissipation	Pd	1200 *	mW
Operating temperature range	Topr	–20 ~ +70	˚C
Storage temperature range	Tstg	–55 ~ +125	˚C

*Derating : 12.0mW/˚C for operation above Ta=25˚C

●Recommended Operating Conditions (Ta=25˚C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	8.5	9	9.5	V

●Electrical characteristics (Unless otherwise noted; Ta=25˚C, Vcc=9V, f=1kHz, Rg=600Ω, RL=10kΩ, Vin=800mVrms, INPUT SELECTOR=Ach, MODE SELECTOR=through, VOLUME=0dB, SURROUND=0dB, GRAPHIC EQUALIZER=0dB, DYNAMIC BASS=0dB, SPECTRUM ANALYZER=RESET)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current at no signal	IQ	—	40	60	mA	At no signal
Maximum output voltage	VOM	2.0	2.5	—	Vrms	THD=1%
Voltage gain	GV	0.8	2.8	4.8	dB	
Total harmonic distortion rate	THD	—	0.01	0.05	%	Vo=1Vrms, 400Hz-30kHz BPF
Output noise voltage	VNO	—	35	50	μVrms	Rg=0Ω, Biamp=0dB, DIN AUDIO
Residual noise voltage	VMNO	—	5	20	μVrms	Rg=0Ω, Volume=–∞ Biamp=0dB, DIN AUDIO
Cross talk	CT	70	80	—	dB	Rg=0Ω, Biamp=0dB, DIN AUDIO
Volume maximum attenuation	ATTMAX	86	95	—	dB	DIN AUDIO
Vocal fader suppressed quantity	GVF	25	30	—	dB	
Graphic equalizer gain	VGQB	±9	±12	±15	dB	Vin=200mVrms fin=100Hz, 300Hz,1kHz,3kHz, or 10kHz
Surround maximum voltage gain	VSUMAX	5	7	9	dB	Vin=300mVrms, fin=1kHz
Dynamic bass boost gain	VBB	15	18	21	dB	Vin=100mVrms, fin=75Hz, 23pin=GND
Microphone voltage gain	GMIC	0.6	2.6	4.6	dB	Vin=400mVrms
Spectrum analyzer max. output level	VMAX	4.0	4.8	—	V	Vin=–12dBV

●Block Diagram