

Audio sound processor IC BD3867AS

●Description

The BD3867AS is an audio sound processor IC for TVs that can reduce step-noise by adopting a volume and tone circuit with VCA system. An AGC circuit and matrix surround circuit are also incorporated. This IC can process all audio sound control in TV.

●Features

- 1) Volume and tone can be controlled directly from a micro-computer due to the adoption of I²C-BUS.
- 2) Low distortion volume and low noise VCA can reduce step-noise.
- 3) By use of an AGC circuit there is better blending of volume differences between input sources and an improvement in the audible S/N ratio.
- 4) Matrix surround circuit with phase shift technology.
- 5) Good channel balance at any volume attenuation.
- 6) Maximum volume attenuation value: -110dB (Typ.)

●Applications

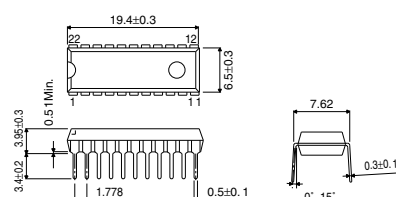
TV appliances such as DVD, PC, HDTV, Karaoke, digital broadcasting, and CATV

●Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Applied voltage	Vcc	10.0	V
Power dissipation	Pd	1000 *	mW
Operating temperature range	Topr	-40 ~ +85	°C
Storage temperature range	Tstg	-55 ~ +125	°C

*Derating : 10mW/°C for operation above Ta=25°C

●Dimension (Units : mm)



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● Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V _{CC}	7.0	—	9.5	V

● Electrical characteristics

(Unless otherwise noted, Ta=25°C, V_{CC}=9V, f=1kHz, V_{IN}=1V_{rms}, R_g=0Ω, R_L=10kΩ, Volume 0dB, Bass 0dB, Treble 0dB, Mute OFF, AGC OFF, Surround OFF, Loop OFF, Effect 0step)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current	I _Q	—	24	34	mA	V _{IN} =0V _{rms}
Voltage gain	G _v	-1.5	0	1.5	dB	
Channel balance	CB	-1.5	0	1.5	dB	
Total harmonic distortion	THD	—	0.01	0.1	%	V _{OUT} =1V _{rms} , BPF=400~30kHz
Output noise voltage	V _{NO}	—	100	200	μV _{rms}	Volume 0dB, BPF=Din Audio
Residual output noise voltage	V _{MNO}	—	3	10	μV _{rms}	Volume -∞dB, BPF=Din Audio
Cross talk	CT	65	75	—	dB	BPF=Din Audio
Maximum output voltage	V _{OM}	2.1	2.5	—	V _{rms}	THD=1%
Maximum attenuation	ATT _{MAX}	—	-110	-80	dB	Volume -∞dB, BPF=Din Audio
Bass boost cut gain	V _B	±11	±14	±17	dB	f=100Hz
Treble boost cut gain	V _T					f=10kHz
AGC I/O level	V _{AGC1}	0.7	1	1.4	mV _{rms}	AGC ON, V _{IN} =1mV _{rms}
	V _{AGC2}	50	80	110	mV _{rms}	AGC ON, V _{IN} =50mV _{rms}
	V _{AGC3}	90	130	170	mV _{rms}	AGC ON, V _{IN} =110mV _{rms}
	V _{AGC4}	160	210	260	mV _{rms}	AGC ON, V _{IN} =1V _{rms}
Surround gain	V _{SMAX}	7	9.5	12	dB	Surround ON, Effect 15 step
Surround gain	V _{SMIN}	0	2.5	5	dB	Surround ON, Effect 0 step
Mute attenuatio	ATT _{MU}	—	-110	-80	dB	Mute ON, BPF=Din Audio

● Application circuit

