

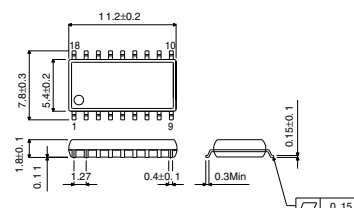
Audio sound controller IC BD3869FS

●Description

BD3869F/S is a signal processor IC developed for audio sound control of TV and mini-component stereo. Volume and tone can be easily controlled from micro-controller by two-wire serial control (I²C-BUS). Front volume with loudness, rear volume with trim, bass, and treble are integrated on a single chip of SOP18 package (BD3869F) and SDIP18 package (BD3869S). Three ICs (Max.) can be used simultaneously, due to the three kinds of I²C-BUS slave addresses.

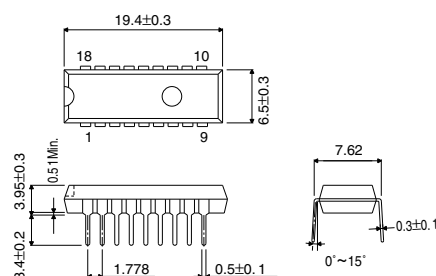
●Dimension (Units : mm)

BD3869F



SOP18

BD3869S



SDIP18

●Features

- 1) Achieving low noise and low distortion by applying volume and tone of resistance ladder type.
- 2) Three ICs (Max.) can be used simultaneously by I²C-BUS control.
- 3) Compact package: SOP18, SDIP18
- 4) External components can change bass and treble.

●Applications

TV, Mini component stereo

●Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Maximum applied voltage	Vcc	10	V
Power dissipation	BD3869F	550 *1	mW
	BD3869S	600 *2	
Operating temperature range	Topr	-40 ~ +85	°C
Storage temperature range	Tstg	-55 ~ +125	°C

*1 Derating : 5.5mW/°C for operation above Ta=25°C

*2 Derating : 6.0mW/°C for operation above Ta=25°C

● Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V _{CC}	4.5	9.0	9.5	V

● Electrical characteristics (Unless otherwise noted; Ta=25°C, V_{CC}=9V, f=1kHz, V_{in}=1V_{rms}, R_g=600Ω, R_L=10kΩ, Front volume=0dB, Rear volume=0dB, Bass=0dB, Treble=0dB, Loudness=OFF)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current at no signal	I _Q	—	3	7	mA	V _{in} =0V _{rms}
Maximum input voltage	V _{IM}	2.2	2.5	—	V _{rms}	Front Volume=-6dB, THD (V _{out})=1%
Maximum output voltage	V _{OM}	2.1	2.25	—	V _{rms}	THD=1%
Total harmonic distortion rate	THD	—	0.01	0.2	%	V _{out} =1V _{rms} , BPF=400-30kHz
Output noise voltage	V _{NO}	—	2.3	15	μV _{rms}	BPF=IHF-A, R _g =0Ω
Cross talk	CT	70	95	—	dB	BPF=IHF-A
Front volume control range	V _{ATTF}	-92	-89	-86	dB	BPF=IHF-A
Rear volume control range	V _{ATTR}	—	-100	-90	dB	BPF=IHF-A
Bass boost control range	V _{BBMAX}	+11	+14	+17	dB	f=80Hz, V _{in} =100mV _{rms} , Bass=+14dB
Bass cut control range	V _{BCMAX}	-17	-14	-11	dB	f=80kHz, V _{in} =100mV _{rms} , Bass=-14dB
Treble boost control range	V _{TBMAX}	+11	+14	+17	dB	f=15kHz, V _{in} =100mV _{rms} , Treble=+14dB
Treble cut control range	V _{TCMAX}	-17	-14	-11	dB	f=15kHz, V _{in} =100mV _{rms} , Treble=-14dB

● Application Circuit

