Headphone driver for portable CD players

BA3571F / BA3571FS

The BA3571F and BA3571FS are headphone drivers designed for portable CD players. An oscillation damper is not needed at the headphone output, minimizing external components. Includes a bass boost circuit which enables setting of the bass boost with external components.

●Applications

Portable CD players

●Features

1) An external oscillation damper is not needed.
2) Includes a bass boost circuit making it possible to set the bass boost with attached components.

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Power supply voltage		V_{CC}	5.5	V
Power dissipation	BA3571FS	Pd	750*1	mW
	BA3571F		550*2	
Operating temperature		Topr	−25～+75	℃
Storage temperature		Tstg	−55～+125	℃

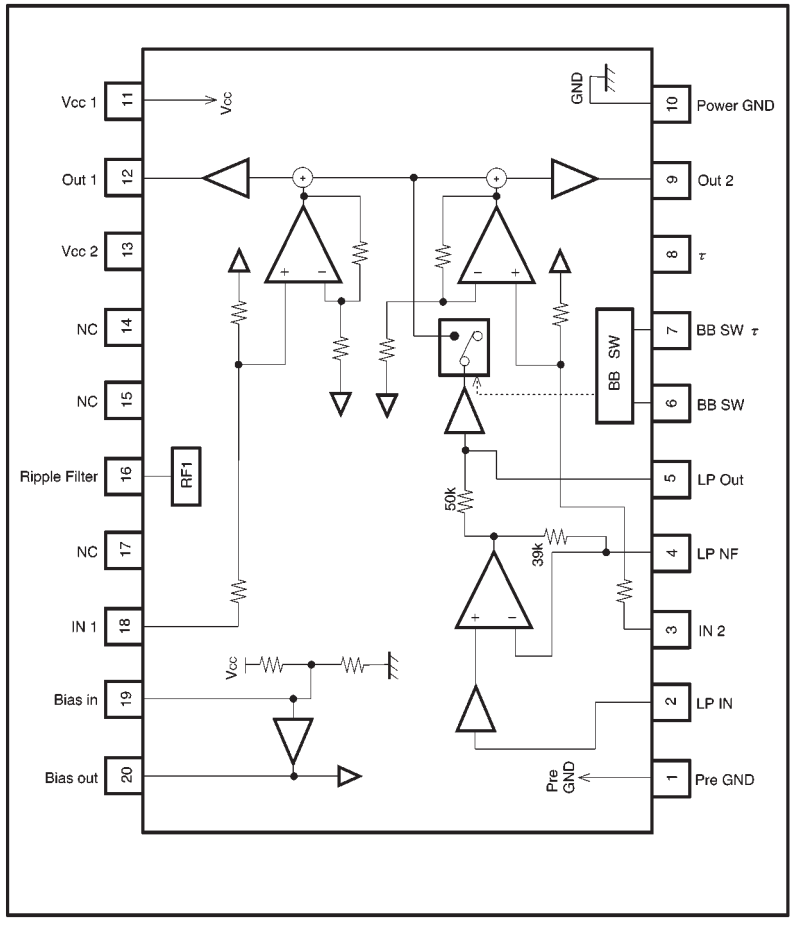
*1 Reduced by 7.5mW for each increase in Ta of 1℃ over 25℃.

*2 Reduced by 5.5mW for each increase in Ta of 1℃ over 25℃.

●Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V_{CC}	2.0	—	5.5	V

●Block diagram



●Electrical characteristics

(unless otherwise noted, Ta = 25°C, V_{CC} = 3V, R_L = 16Ω, and f = 1kHz; measurement circuit shown in Fig 1)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current	I_Q	—	9	18	mA	V_{IN}=0V_{rms}
Voltage gain 1	G_{V1}	13.5	15	16.5	dB	BB=OFF
Voltage gain 2	G_{V2}	11.5	13	14.5	dB	BB=ON
Rated output power	P_{OUT}	20	30	—	mW	THD=10%
Total harmonic distortion	THD	—	0.15	1.0	%	V_O=−16dBm
Channel balance	CB	−1.5	0	1.5	dB	V_O=−16dBm
Output noise voltage 1	V_{NO1}	—	−92	−88	dBm	BB=OFF, IHF−A
Output noise voltage 2	V_{NO2}	—	−88	−84	dBm	BB=ON, IHF−A
Input resistance	R_{IN}	10.8	13.5	16.2	kΩ	
Ripple rejection	RR	23	36	—	dB	f_{RR}=100Hz, V_{RR}=−30dBm, BB=OFF
Boost	BB	4	6	8	dB	f=100Hz, V_{IN}=−36dBm
Channel separation	CS	52	62	—	dB	f=1kHz, BB=OFF

◎Not designed for radiation resistance.

●Measurement circuit

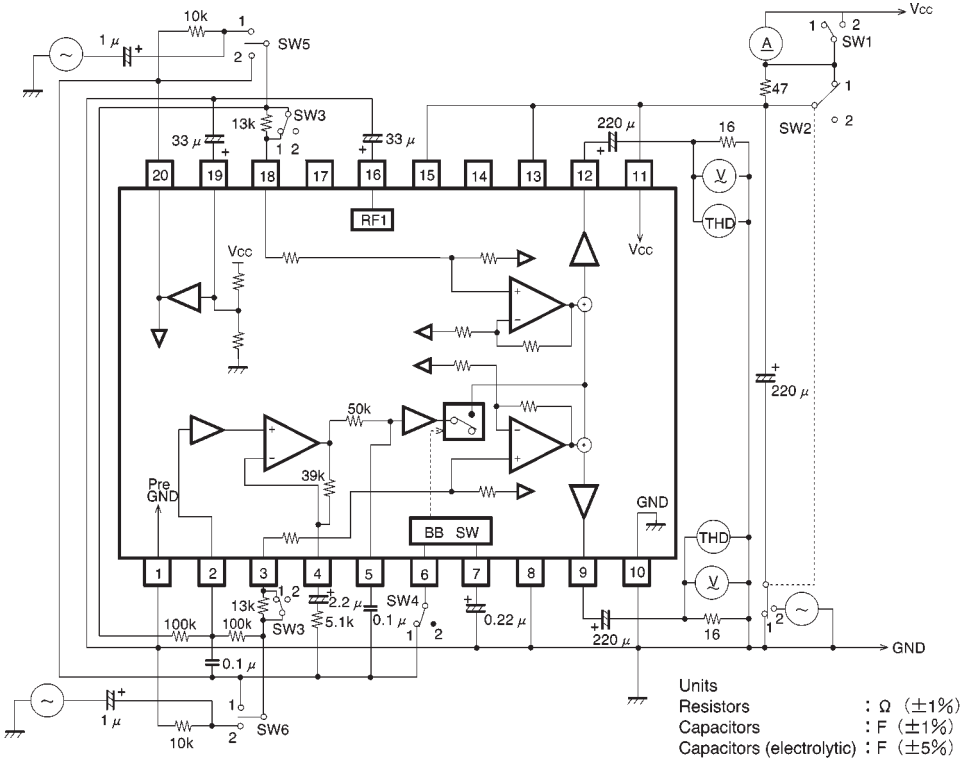


Fig. 1

●Application example

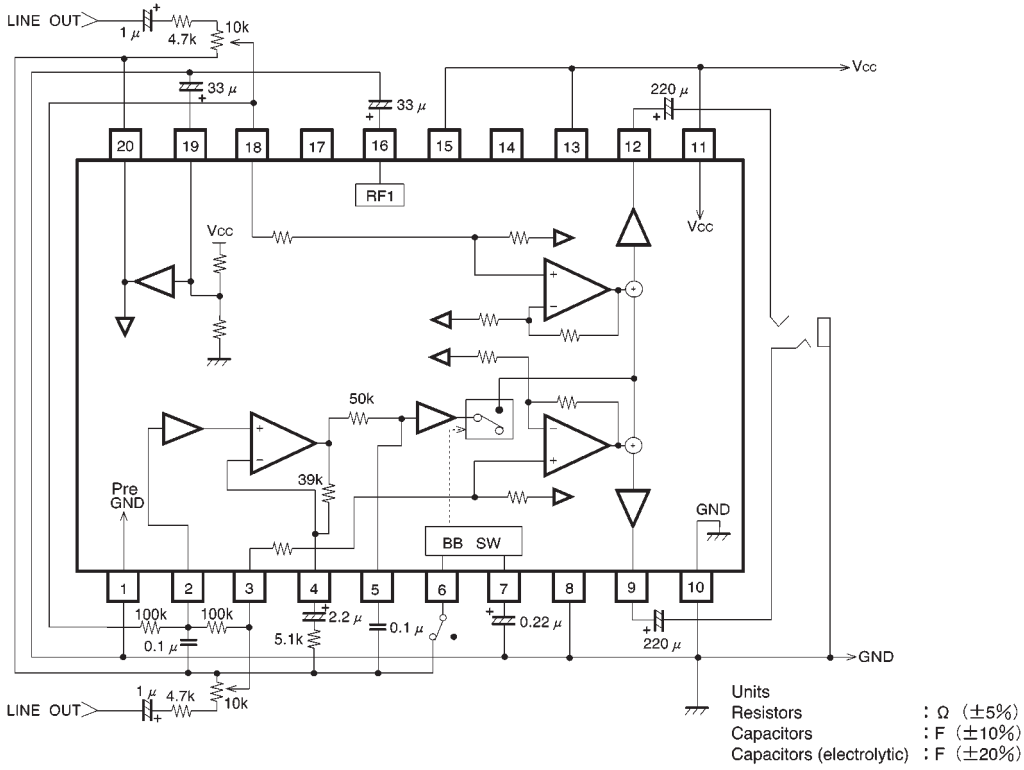


Fig. 2

●Electrical characteristic curve

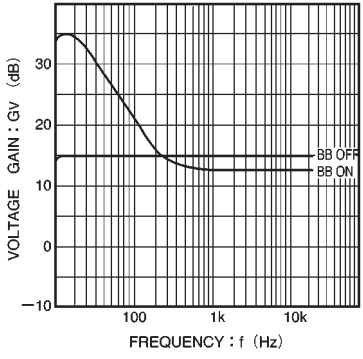
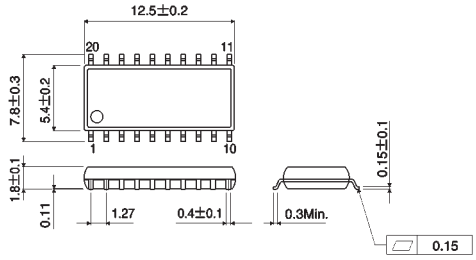


Fig. 3 Voltage gain vs. frequency

●External dimensions (Units: mm)

BA3571F



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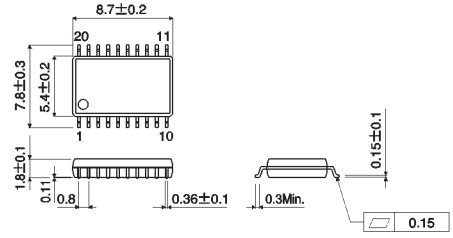

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