

Headphone driver for portable CD players

BA3571F

The BA3571F is 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)

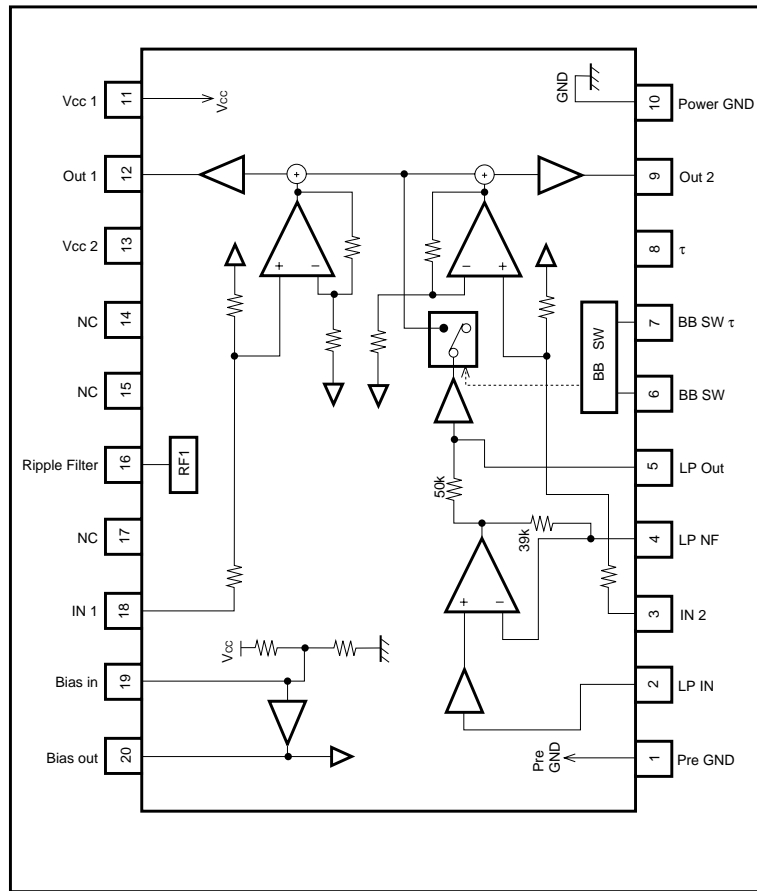
Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	5.5	V
Power dissipation	P _d	550 *1	mW
Operating temperature	T _{opr}	-25~+75	°C
Storage temperature	T _{stg}	-55~+125	°C

*1 Reduced by 5.5mW for each increase in Ta of 1°C over 25°C.

●Recommended operating conditions (Ta = 25°C)

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

●Block diagram



Audio ICs

●Electrical characteristics

(unless otherwise noted, $T_a = 25^\circ\text{C}$, $V_{CC} = 3\text{V}$, $R_L = 16\Omega$, and $f = 1\text{kHz}$; measurement circuit shown in Fig.1)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current	I_Q	-	9	18	mA	$V_{IN} = 0\text{V}_{rms}$
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	%	$V_O = -16\text{dBm}$
Channel balance	CB	-1.5	0	1.5	dB	$V_O = -16\text{dBm}$
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	$k\Omega$	
Ripple rejection	RR	23	36	-	dB	$f_{RR} = 100\text{Hz}$, $V_{RR} = -30\text{dBm}$, BB = OFF
Boost	BB	4	6	8	dB	$f = 100\text{Hz}$, $V_{IN} = -36\text{dBm}$
Channel separation	CS	52	62	-	dB	$f = 1\text{kHz}$, BB = OFF

* Not designed for radiation resistance.

●Measurement circuit

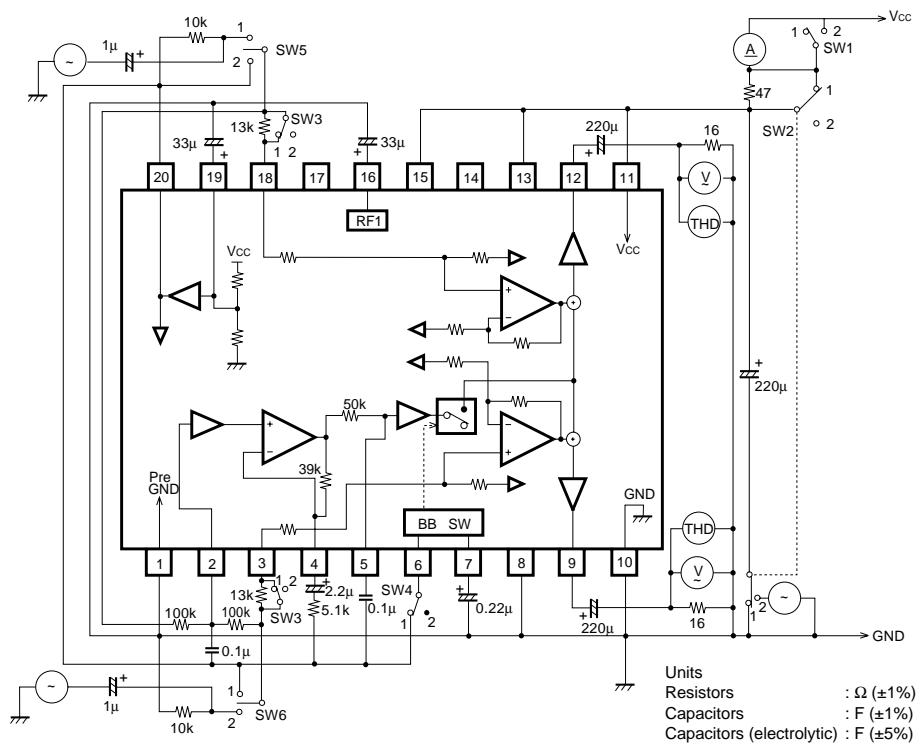


Fig. 1

Audio ICs

●Application example

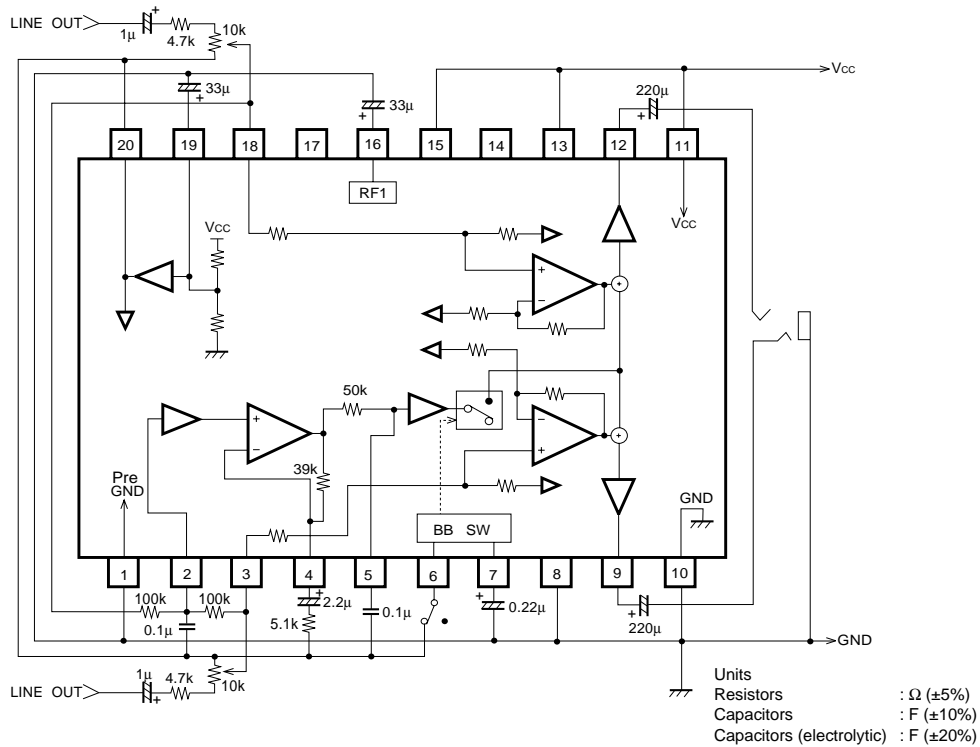


Fig. 2

●Electrical characteristic curve

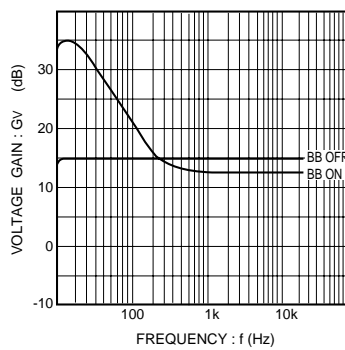


Fig. 3 Voltage gain vs. frequency

●External dimensions (Units: mm)

