

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	P _d	750*1	mW
BA3571F		550*2	
Operating temperature	T _{opr}	-25~+75	°C
Storage temperature	T _{stg}	-55~+125	°C

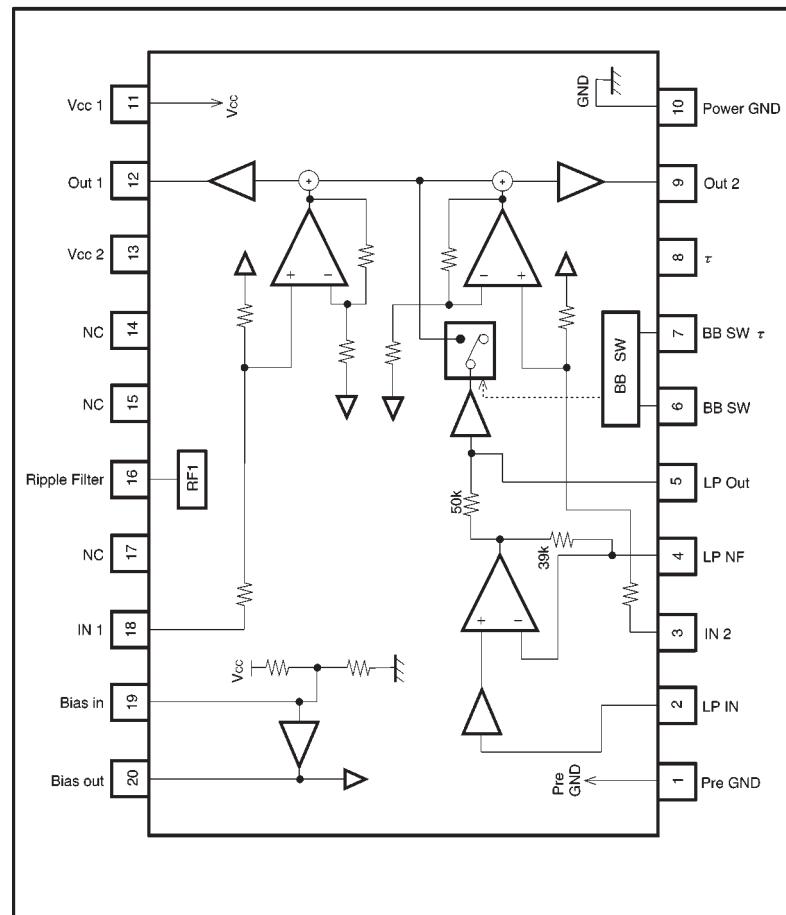
*1 Reduced by 7.5mW for each increase in Ta of 1°C over 25°C.

*2 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



● 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	$V_{IN}=0V_{rms}$
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	$k\Omega$	
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

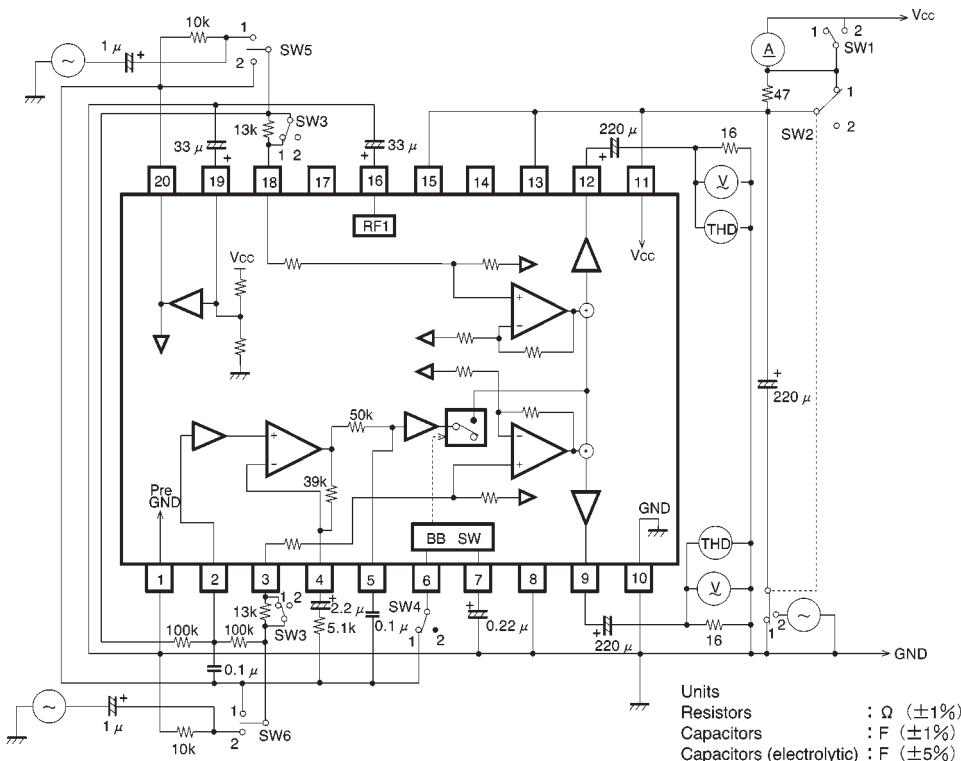


Fig. 1

● Application example

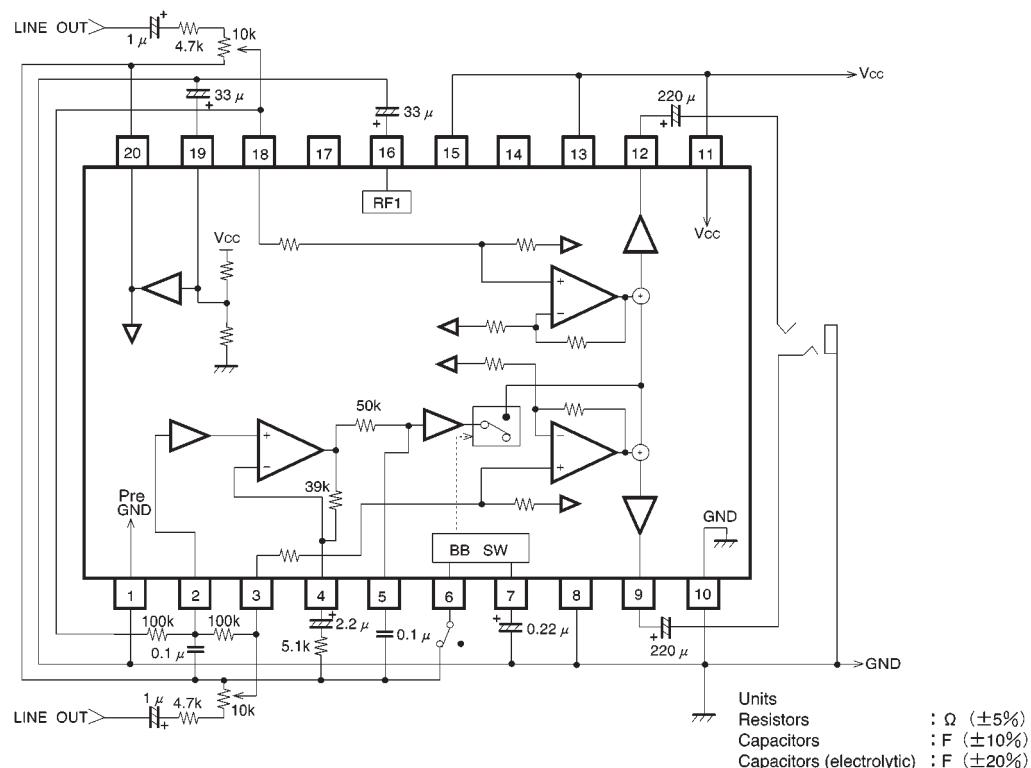


Fig. 2

● Electrical characteristic curve

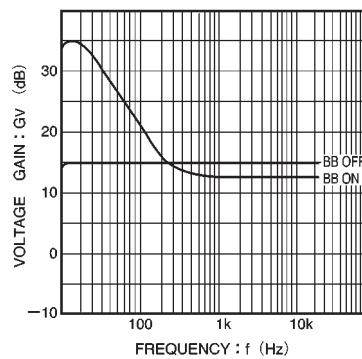
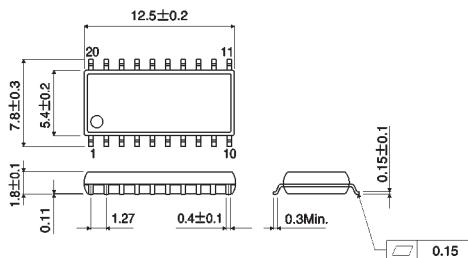


Fig. 3 Voltage gain vs. frequency

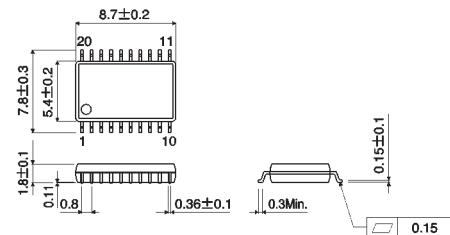
● External dimensions (Units: mm)

BA3571F



SOP20

BA3571FS



SSOP-A20