

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 external components.

●Absolute maximum ratings (Ta = 25°C)

| Parameter | | Symbol | Limits | Unit |
|-----------------------|----------|------------------|---------|------|
| Supply voltage | | V _{cc} | 5.5 | V |
| Power dissipation | BA3571FS | Pd | 750*1 | mW |
| | BA3571F | | 550*2 | |
| Operating temperature | | T _{opr} | -25~75 | °C |
| Storage temperature | | T _{stg} | -55~125 | °C |

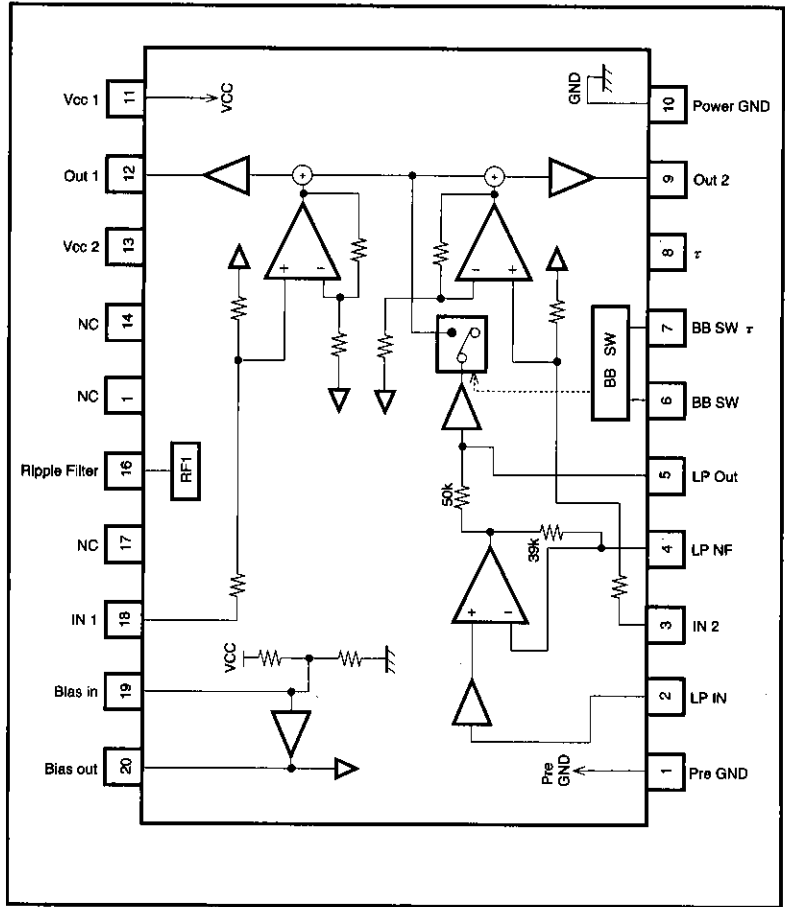
*1 When used above Ta = 25°C, decreases 7.5 mW per degree.

*2 When used above Ta = 25°C, decreases 5.5 mW per degree.

●Recommended operating conditions (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------|-----------------|------|------|------|------|
| Supply voltage | V _{cc} | 2.0 | — | 5.5 | V |

●Block diagram



Bass boost systems

Audio accessory components

● Electrical characteristics

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

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---------------------------|-----------|------|------|------|------------|---|
| Quiescent circuit 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 Ω | |
| 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 |

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● Test circuit

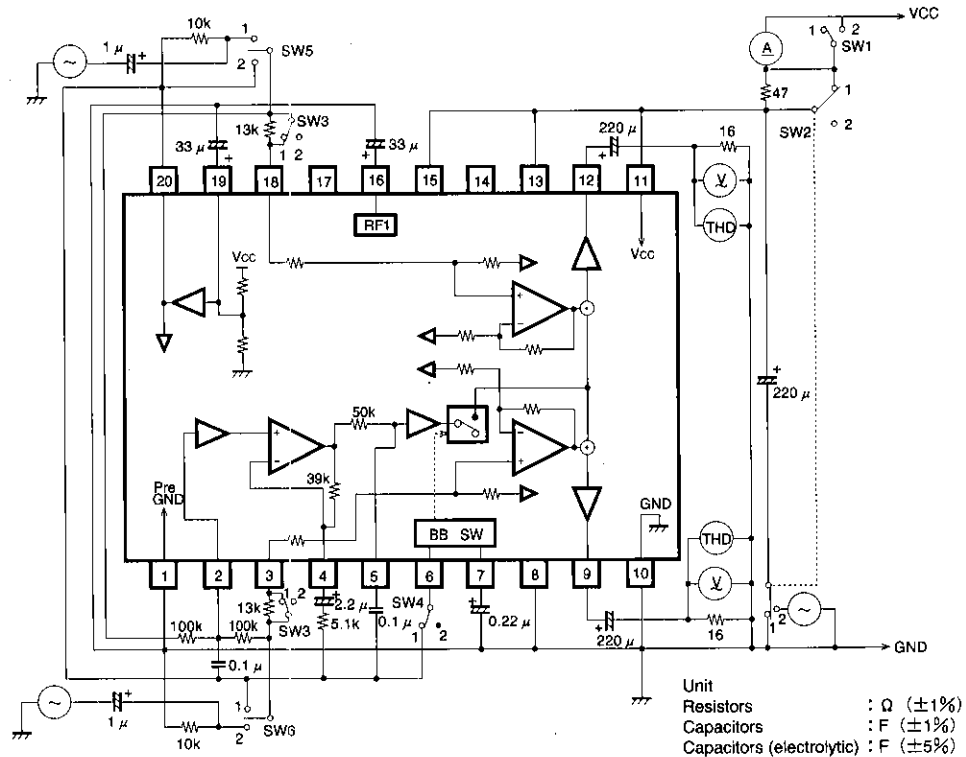


Fig. 1

●Application example

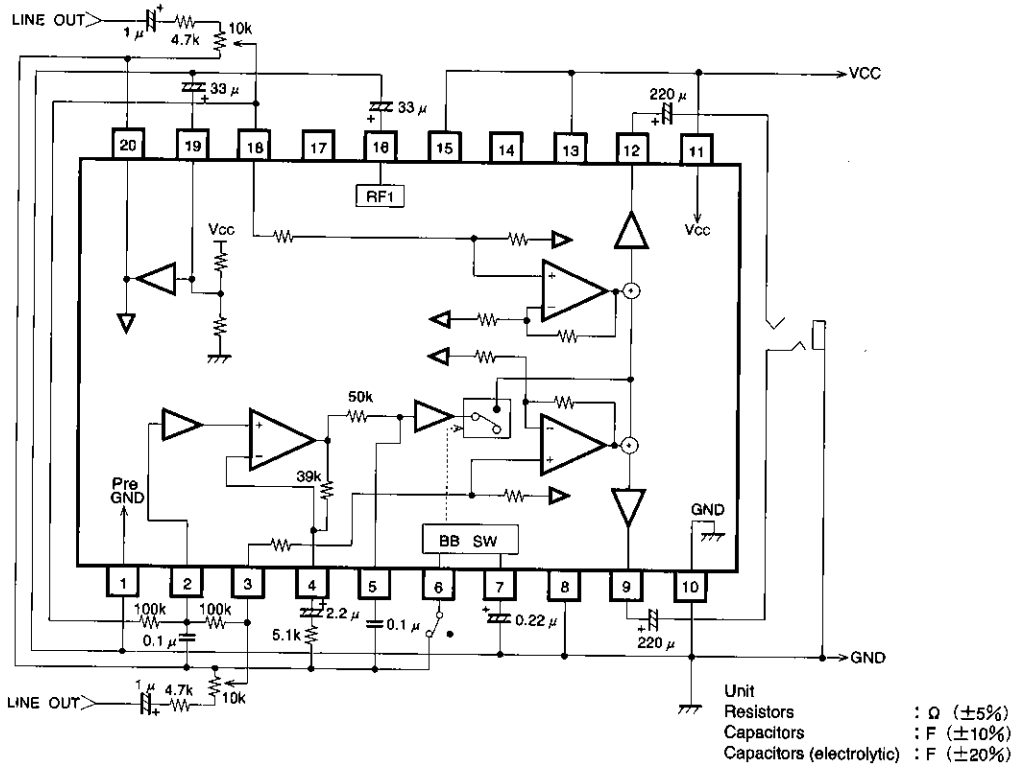


Fig. 2

●Electrical characteristic curves

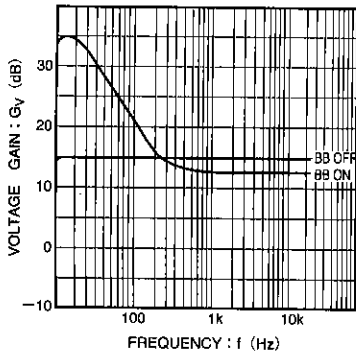
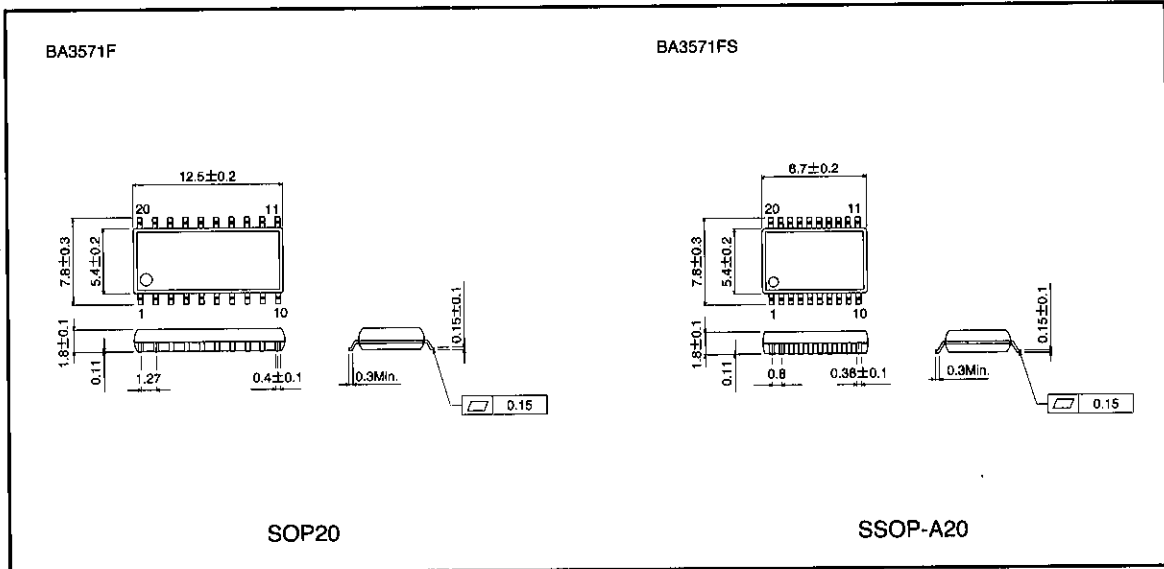


Fig. 3 Voltage gain vs. frequency

Bass boost systems

Audio accessory components

● External dimensions (Unit: mm)



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