

Switchless REC / PB amplifier for standard audio signal processing

BA7757BK

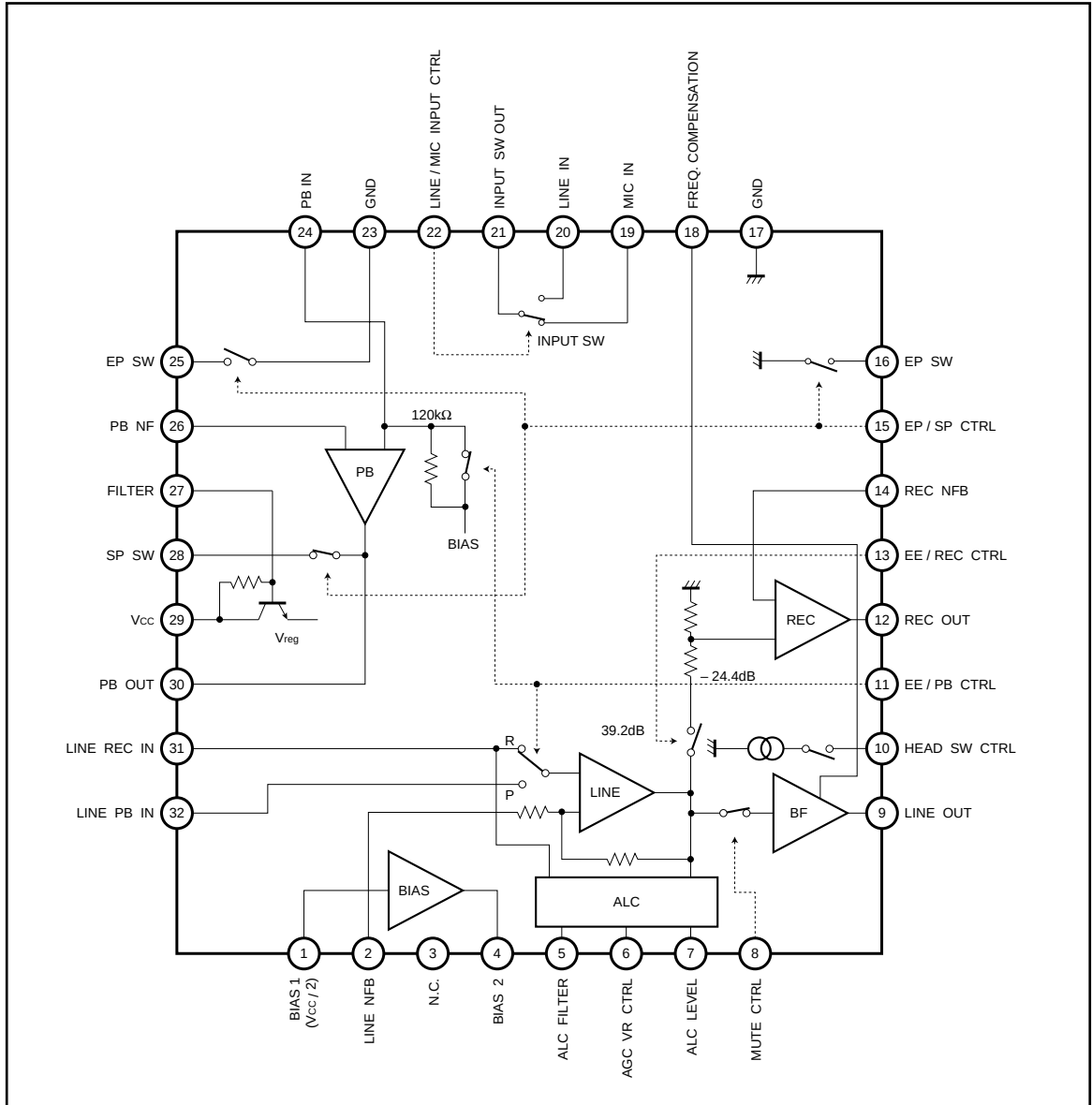
The BA7757BK contains a playback equalizer amplifier, an REC / PB switch, a line amplifier, an ALC circuit with built-in detector, a recording amplifier, an analog switch for input switching, and a logic control circuit for independent switching of REC / EE, PR / EE, line mute and input.

The IC is easy to interface with control systems, and features low noise during mode switching and at power on / off. The line amplifier and recording amplifier are directly connected internally, allowing construction of a high-performance audio signal processing circuit for VCRs using a minimum number of external components.

●Features

- 1) All necessary switches for audio signal processing are built-in.
 - MIC / LINE input selector switch.
 - EP / SP equalizer selector switch.
 - Built-in head switch on the playback side of the head for head switching for REC / PB, and a head-switch driver terminal provided on the recording side.
 - EE / PB and EE / REC selector switches (compatibility with after-recording mode (AFR) is possible).
 - Line muting switch.
- 2) All control functions are independent, so interfacing with the control system is simple.
- 3) Amplifiers required for audio recording and playback are provided on the IC.
- 4) Excellent S / N and distortion specifications through use of high-level ALC VR.
- 5) The ALC level is set using a external resistor, and variation due to temperature is extremely low.
- 6) Built-in ripple filter gives excellent ripple rejection.
- 7) Low noise generation when power is switched on and off, and during control system switching.
- 8) The line output can directly drive earphone.
- 9) Few external parts required.
- 10) Available in a QFP32 package, for high-density mounting.
- 11) Low power consumption.

●Block diagram



● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	8.0* ¹	V
Power dissipation	P _d	400* ²	mW
Operating temperature	T _{opr}	– 10 ~ + 65	°C
Storage temperature	T _{stg}	– 55 ~ + 125	°C

*1 When IC is stand alone.

*2 Reduced by 4mW for each increase in Ta of 1°C over 25°C.

● Recommended operating conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V _{CC}	4.0	—	6.0	V

● Electrical characteristics (unless otherwise noted, Ta = 25°C, V_{CC} = 5V, and f = 1kHz)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current (SP mode)	I _{qSP}	—	7.0	9.8	mA	No signal, EE and SP mode
Quiescent current (EP mode)	I _{qEP}	—	8.0	11.2	mA	No signal, EE and EP mode
〈Line amplifier〉 (LINE IN ~ LINE OUT)						
Distortion	DISTN _{EE}	—	0.06	0.2	%	LINE IN ~ LINE OUT, V _{IN} = – 25dBV* ¹
Maximum output level	V _{OML}	0.75	1.1	—	V _{rms}	DISTN = 1%* ¹
ALC level	V _{OA}	– 6.8	– 5	– 3.2	dBV	V _{IN} = – 15dBV
ALC distortion	DISTN _A	—	0.08	0.2	%	V _{IN} = – 15dBV* ¹
〈Recording amplifier〉 (LINE IN ~ REC OUT)						
Gain	G _{VR}	39.1	40.8	42.5	dB	V _{IN} = – 25dBV, input attenuation conversion
Distortion	DISTN _R	—	0.06	0.2	%	V _{IN} = – 25dBV* ¹
Maximum output level	V _{OMR}	0.85	1.2	—	V _{rms}	DISTN = 1%* ¹
〈Input switch〉 (MIC IN ~ SW OUT)						
Gain	G _{VSW}	– 0.5	0	—	dB	V _{IN} = – 14dBV
Distortion	DISTN _{SW}	—	0.002	0.1	%	V _{IN} = – 14dBV* ¹
Input resistance	Z _{INM}	—	75	—	kΩ	
Maximum output level	V _{OMSW}	0.85	1.2	—	V _{rms}	DISTN = 1%* ¹

*1 Measured at BW = 0.4 to 30kHz.

● Measurement circuit

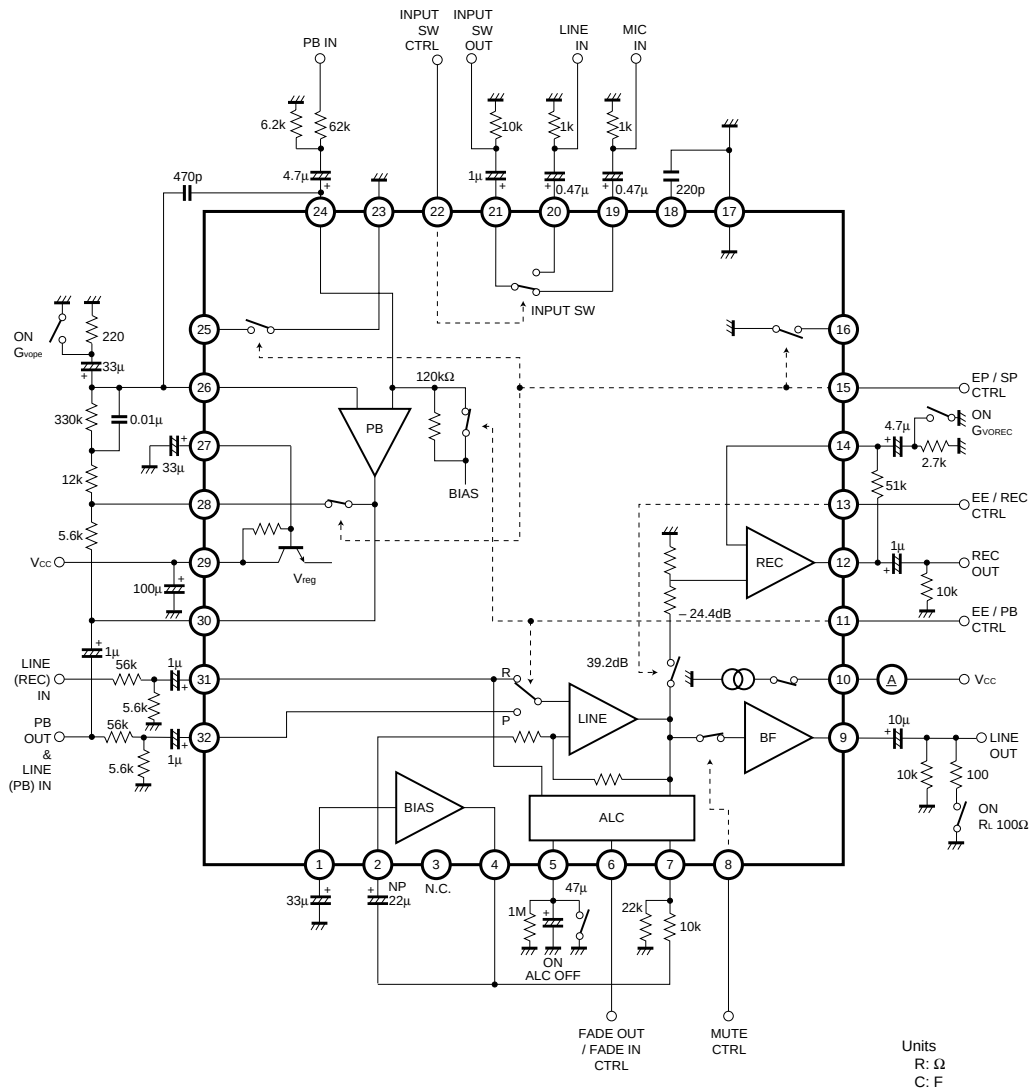


Fig. 1

● Application example

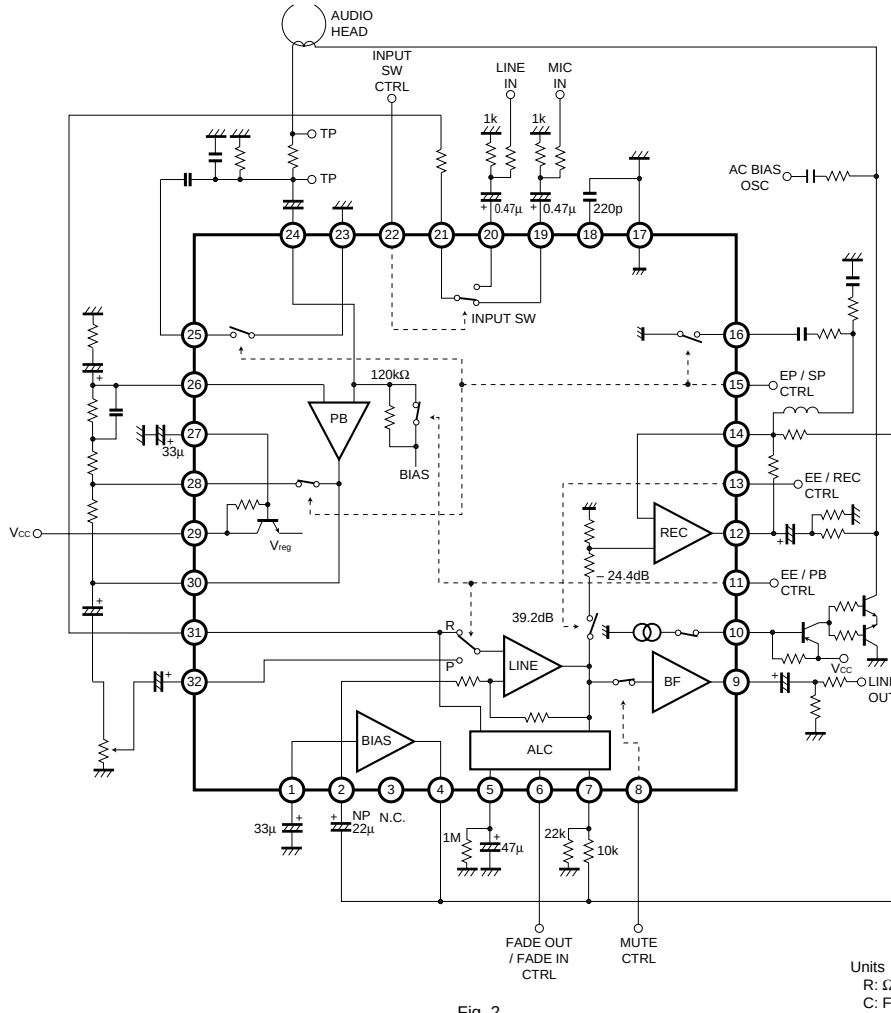


Fig. 2

● External dimensions (Units: mm)

