

AN7171NK, AN7173K

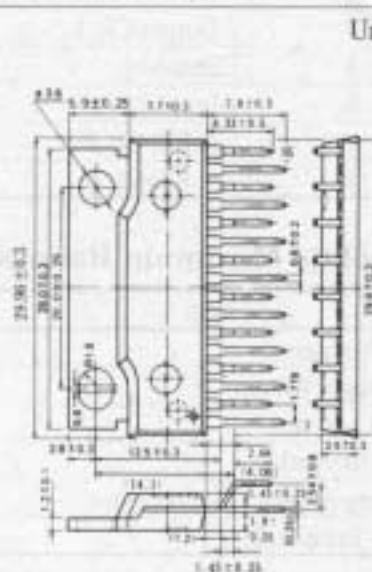
Dual BTL 14W Audio Power Amplifier Circuits

■ Outline

The AN7171NK and the AN7173K are the integrated circuits designed for 14W (13.2V, 4 Ω) output power amplifier. Stereo operation is enabled due to incorporating two BTL amplifiers in one chip. High reliability is obtained due to incorporating various protectors. ON/OFF is enabled even if power is supplied to power supply pin by incorporating stand-by circuit.

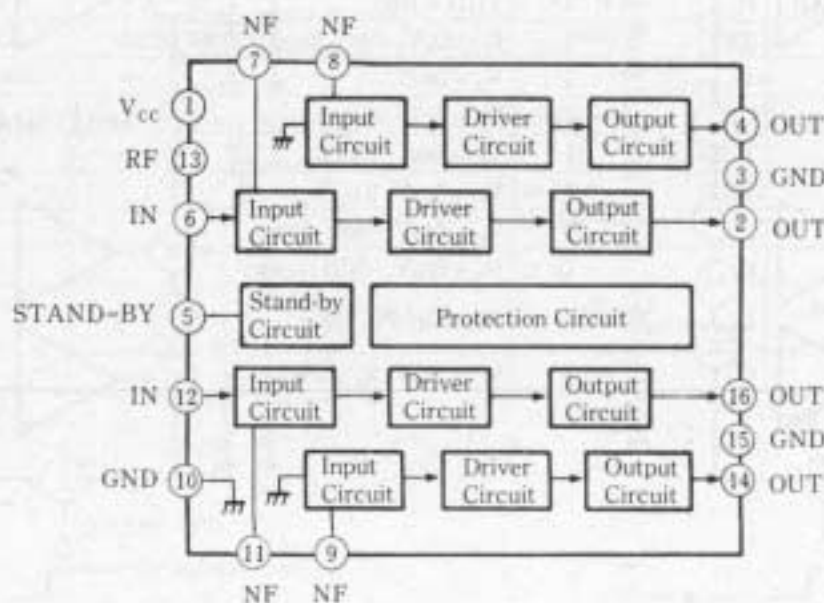
■ Features

- High output power (BTL $14W \times 2$)
- Incorporating stand-by circuits.
- Incorporating protection circuits. (temperature, overvoltage, V_{OUT} -GND short, Load short, $V_{OUT} - V_{CC}$ short)
- Low shock noise from power ON/OFF operation
- Fewer external components
- Highly stable operation



16-Lead ZIL Plastic Package with Fin (16-ZIP (F))

■ Block Diagram



Pin Descriptions

Pin No.	Pin Name	Pin No.	Pin Name
1	V _{CC}	9	N.F.B Ch. 2
2	Output Ch. 1	10	GND (Input)
3	GND (Output Ch. 1)	11	N.F.B Ch. 2
4	Output Ch. 1	12	Input Ch. 2
5	Stand-by	13	Ripple Filter
6	Input Ch. 1	14	Output Ch. 2
7	N.F.B Ch. 1	16	GND (Output Ch. 2)
8	N.F.B Ch. 1	16	Output Ch. 2

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC} *1	24	V
Peak Supply Voltage	V _{CC(surge)} *2	50.0	V
Supply Current	I _{CC}	6.0	A
Power Dissipation	P _D *3	62.5	W
Operating Ambient Temperature	T _{op}	-30 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

*1 Non-signal *2 Time = 0.2s *3 R_{θJA} = 2°C/W

Electrical Characteristics (V_{CC} = 13.2V, R_L = 4Ω, f = 1kHz, Ta = 25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I _{CCQ}	1	V _{in} = 0mV		120	200	mA
Output Noise Voltage	V _{no} *	1	V _{in} = 0mV, R _g = 10kΩ		0.60	1.50	mV
Voltage Gain	G _v	1	V _{in} = 5mV	50.5	52.5	54.5	dB
Total Harmonic Distortion	THD	1	V _{in} = 5mV		0.20	0.75	%
Maximum Output Power (4Ω)	P _O	1	THD = 10%	9.0	12.5		W
Ripple Rejection Ratio	RR*	1	R _g = 0Ω, V _{in} = 0mV, Ripple = 300mV, 120Hz	35	40		dB
Output Offset Voltage	V _{offset}	1	V _{in} = 0mV	-300	0	+300	mV
Channel Balance	CB	1	V _{in} = 5mV	-1	0	+1	dB
Total Harmonic Distortion	THD	1	V _{in} = 5mV, 100Hz		0.26		%
Total Harmonic Distortion	THD	1	V _{in} = 5mV, 10kHz		0.45		%
Frequency Characteristics	f _{CH}	1	V _{in} = 5mV, -3dB down		22		kHz
Frequency Characteristics	f _{CL}	1	V _{in} = 5mV, -3dB down		21		Hz
Quiescent Circuit Current at Stand-by Pin ON	I _{CCQ(STBY-ON)}	1	Stand-by Pin ON		21		μA
Crosstalk	CT	1	V _{in} = 5mV, R _g = 10kΩ		61		dB

With 15Hz ~ 30kHz (12dB/oct) filter