1.2W AUDIO POWER AMPLIFIER—YD820

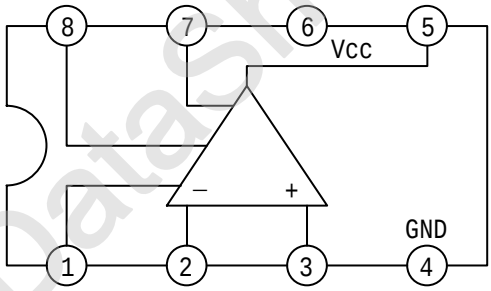
DESCRIPTION

The YD820 is a monolithic integrated circuit audio amplifier. It is designed audio frequency class B amplifiers.

FEATURES

*Wide operating supply voltage: Vcc=3~14V.
*Low quiescent supply current (Icc=4mA, typical).
*Medium output power
Po=1.2W at Vcc=9V, R_L=8ohm, THD=10%.
*Good ripple rejection
*Minimum number of external parts required.

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Tamb=25℃)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	16	V
Output Peak Current	Iop	1.5	A
Power Dissipation (Tamb=25℃)	P_D	1.25	W
Operating Temperature	Topr	-20~ +70	℃
Storage Temperature	Tstg	-55~ +150	℃

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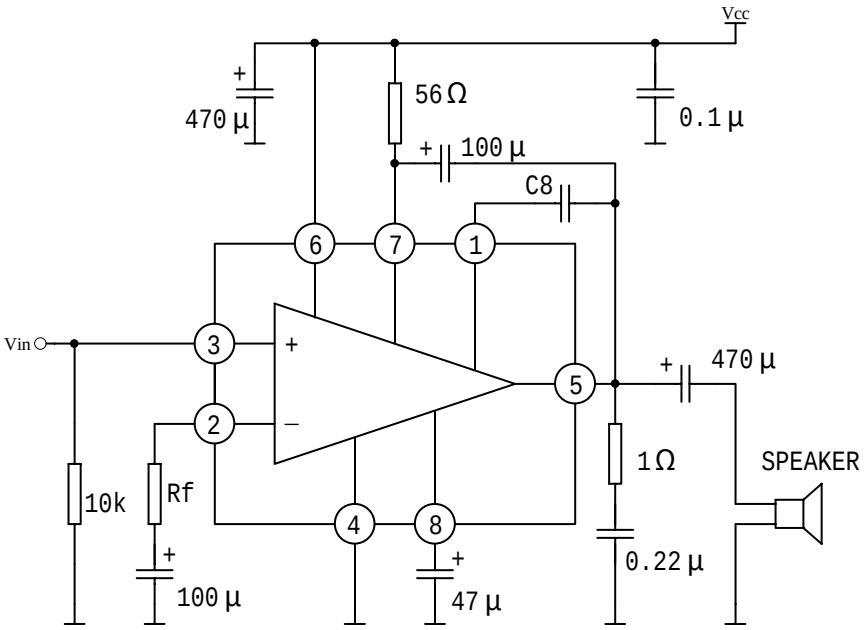
ELECTRICAL CHARACTERISTICS

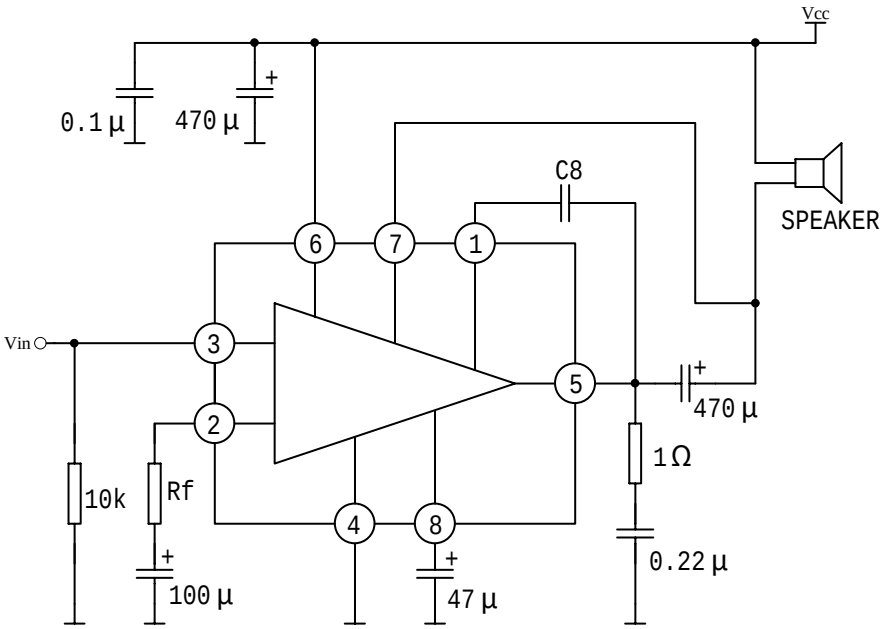
(Unless otherwise specified, V_{CC}=9V, R_L=8Ω, Rg=600Ω, f=1kHz, Tamb=25℃)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Supply Voltage	Vcc			3		16	V
Output DC Voltage	Vo (DC)			4	4.5	5	V
Quiescent Circuit Current	Iccq				4	12	mA
Input Bias Current	I_B				0.1		μA
Output Power	Po	THD =10% Rf =120Ω	Vcc =12V, R_L=8Ω		2		W
			Vcc =9V, R_L=4Ω		1.6		
			Vcc =9V, R_L=8Ω	0.9	1.2		
			Vcc =6V, R_L=4Ω		0.75		
			Vcc =3.5V, R_L=4Ω		0.25		
			Vcc =3V, R_L=4Ω		0.20		
Input Sensitivity	Vin	Po=1.2W	Rf=33Ω		16		mV
			Rf =120Ω		60		
		Po=50mW	Rf =33Ω		3.5		
			Rf =120Ω		12		
Input Resistance	Zi	f=1kHz			5		MΩ
Gain Bandwidth	BW	C_5=1000μF, C_8=680pF		25～7000			H_Z
		C_5=1000μF, C_8=220pF		25～20000			
Total Harmonic Distortion	THD	Po=50mW, Rf =33Ω			0.8		%
		Po=50mW, Rf =120Ω			0.4		
Open Loop Voltage Gain	Gvo				75		dB
Closed Loop Voltage Gain	Gv	Rf =33Ω			45		dB
		Rf =120Ω			34		
Input Noise Voltage	V_{NI}	BPF=20Hz～20kHz			3		μV
Input Noise Current	I_{NI}	20Hz～20kHz			0.4		nA
Signal Noise Ratio	S/N	Po=1.2W, Gv =34 dB, BPF=20Hz～20kHz	Rg=10k		80		dB
			Rg=50k		70		
Ripple Rejection Ratio	RR	fr=100kHz, C_6=47μF, Rf=120Ω			42		dB

APPLICATION CIRCUIT 1



APPLICATION CIRCUIT 2



OUTLINE DRAWING