

1.2W AUDIO POWER AMPLIFIER—YD820

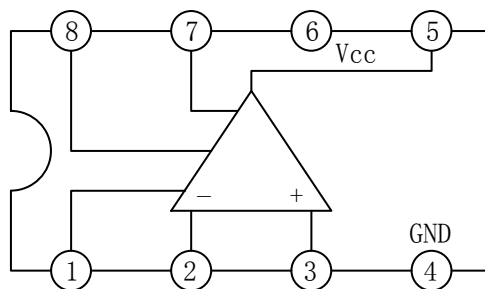
DESCRIPTION

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

FEATURES

- *Wide operating supply voltage: $V_{cc}=3\sim 12V$.
- *Low quiescent supply current ($I_{cc}=4mA$, typical).
- *Medium output power
- * $P_o=1.2W$ at $V_{cc}=9V$, $R_L=8\Omega$, THD=10%.
- *Good ripple rejection
- *Minimum number of external parts required.

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (T_{amb}=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{cc}	16	V
Output Peak Current	I_{op}	1.5	A
Power Dissipation	P_D	1.25	W
Operating Temperature	T_{opr}	-20~ +70	°C
Storage Temperature	T_{stg}	-55~ +150	°C

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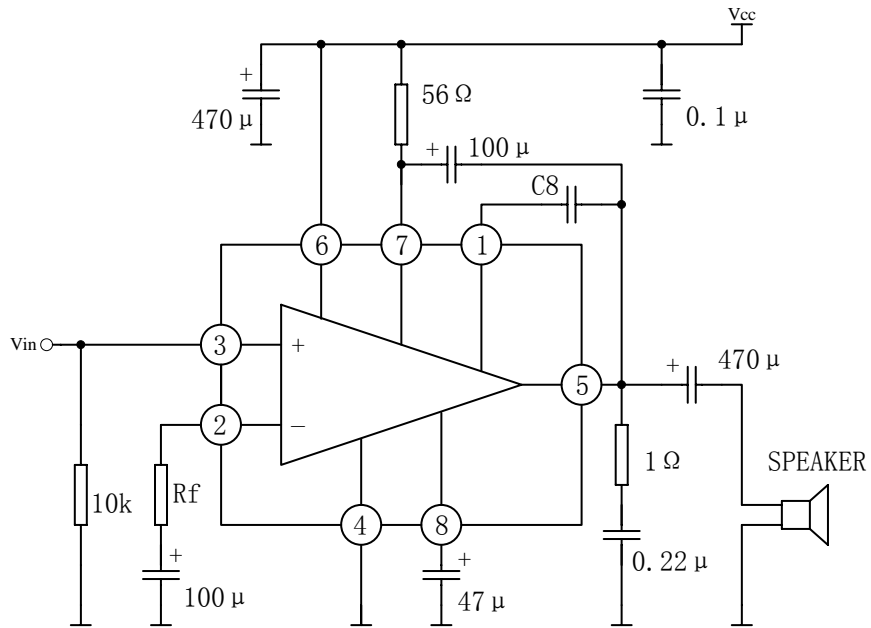
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ELECTRICAL CHARACTERISTICS

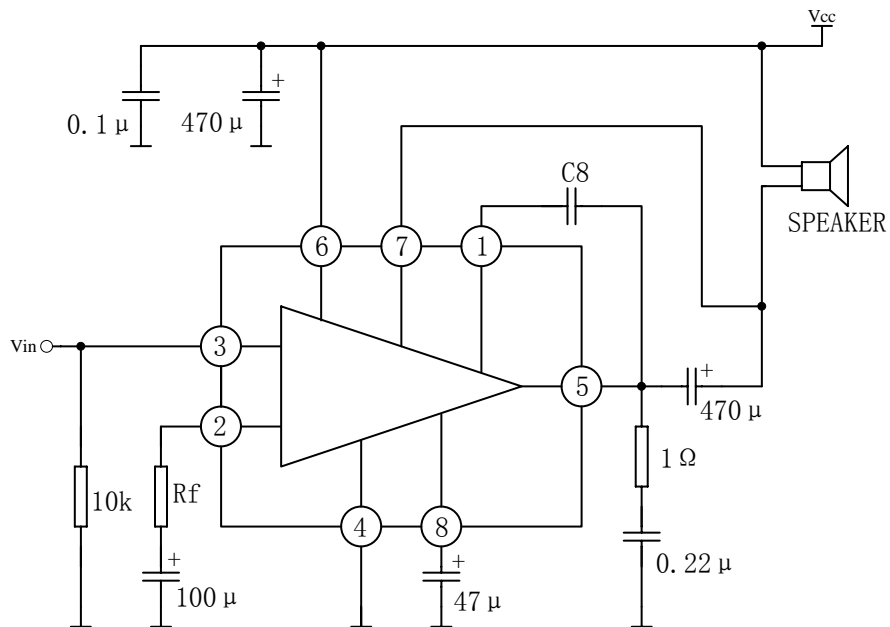
(Unless otherwise specified, $V_{CC}=9V$, $R_L=8\ \Omega$, $R_g=600\ \Omega$, $f=1kHz$, $T_{amb}=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT		
Supply Voltage	V_{CC}		3		12	V		
Output DC Voltage	$V_{O(DC)}$		4	4.5	5	V		
Quiescent Circuit Current	I_{CCQ}			4	12	mA		
Output Power	P_o	THD =10%	$V_{CC}=12V, R_L=8\ \Omega$		2		W	
			$V_{CC}=9V, R_L=4\ \Omega$		1.6			
		$R_f=120\ \Omega$	$V_{CC}=9V, R_L=8\ \Omega$	0.9	1.2			
			$V_{CC}=6V, R_L=4\ \Omega$		0.75			
			$V_{CC}=3.5V, R_L=4\ \Omega$		0.25			
			$V_{CC}=3V, R_L=4\ \Omega$		0.20			
Input Sensitivity	V_{in}	$P_o=1.2W$	$R_f=33\ \Omega$		16		mV	
			$R_f=120\ \Omega$		60			
		$P_o=50mW$	$R_f=33\ \Omega$		3.5			
			$R_f=120\ \Omega$		12			
Input Resistance	Z_i	$f=1kHz$		5		$M\ \Omega$		
Gain Bandwidth	BW	$C_g=680pF$		50~7000		H_z		
		$C_g=220pF$		50~20000				
Total Harmonic Distortion	THD	$P_o=500mW, R_f=33\ \Omega$		0.8		%		
		$P_o=500mW, R_f=120\ \Omega$		0.4				
Open Loop Voltage Gain	G_{vo}			75		dB		
Closed Loop Voltage Gain	G_v	$R_f=33\ \Omega$		45		dB		
		$R_f=120\ \Omega$		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	$P_o=1.2W, G_v=34\ dB,$ BPF=20Hz~20kHz		80		dB		
Ripple Rejection Ratio	RR	$f_r=100kHz, C_6=47\ \mu F, R_f=120\ \Omega$		42		dB		

APPLICATION CIRCUIT 1



APPLICATION CIRCUIT 2



OUTLINE DRAWING

DIP-8

unit:mm

