

## 1.2W AUDIO POWER AMPLIFIER—YD820

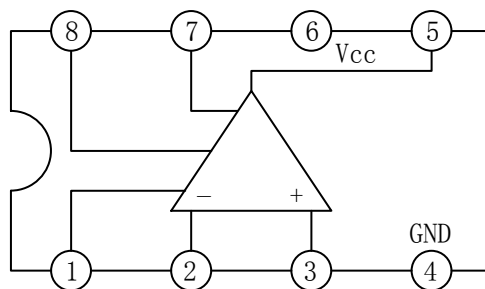
### DESCRIPTION

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 (Tamb=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

### WuXi YouDa Electronics Co., Ltd

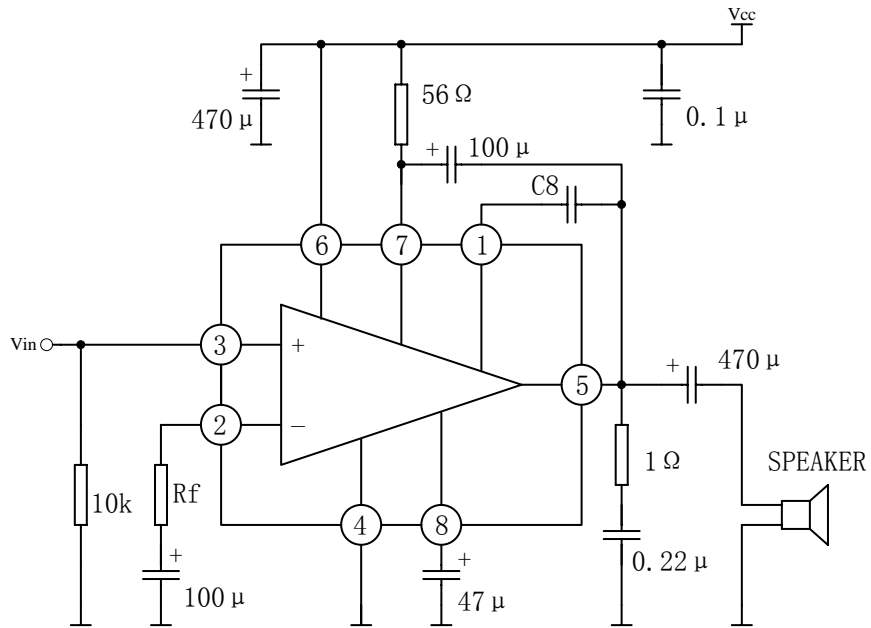
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**ELECTRICAL CHARACTERISTICS**

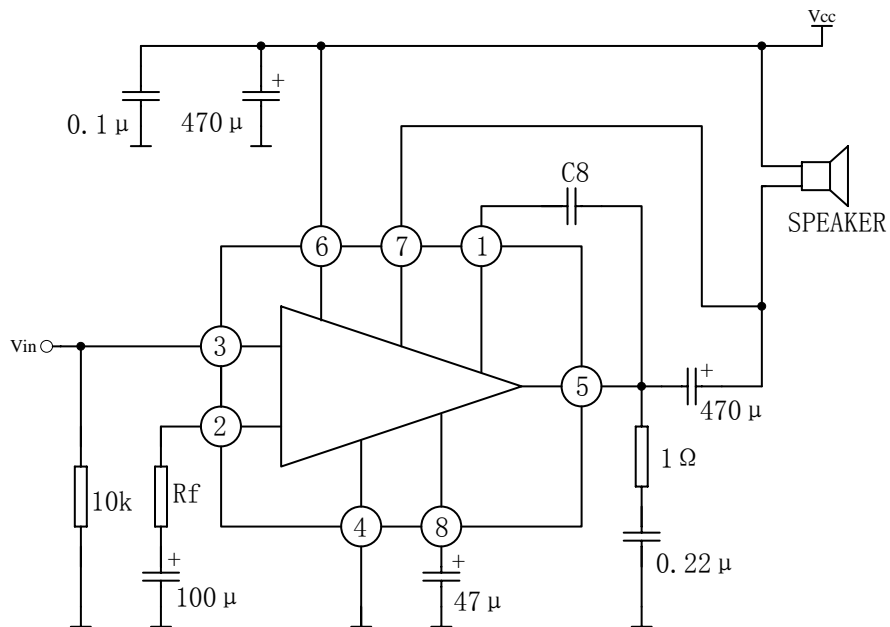
(Unless otherwise specified,  $V_{CC}=9V$ ,  $R_L=8\ \Omega$ ,  $R_g=600\ \Omega$ ,  $f=1kHz$ ,  $T_{amb}=25^\circ C$ )

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		$\mu V$		
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

