

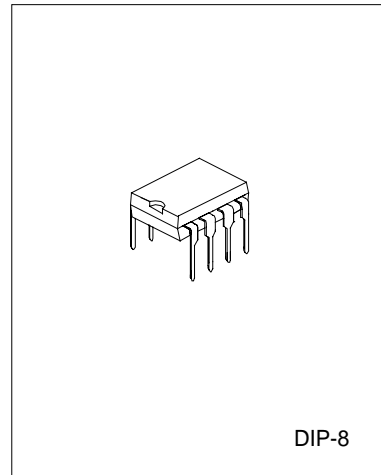
1.2W AUDIO POWER AMPLIFIER

DESCRIPTION

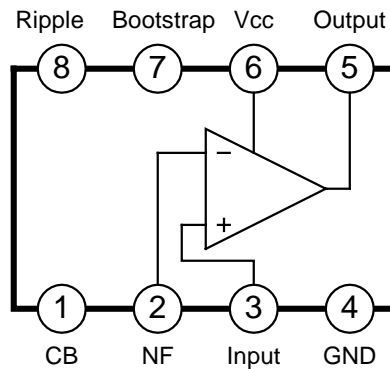
The UTC820 is a monolithic integrated circuit audio amplifier. It is designed for audio frequency Class B amplifiers.

FEATURES

- *Wide operating supply voltage: $V_{cc}=3\sim 14V$
- *Low quiescent supply current ($I_{cc}=4mA$, typical)
- *Medium output power
 $P_o=1.2W$ at $V_{cc}=9V, R_L=8\Omega, \text{Thd}=10\%$
- *Good ripple rejection
- *Minimum number of external parts required.



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

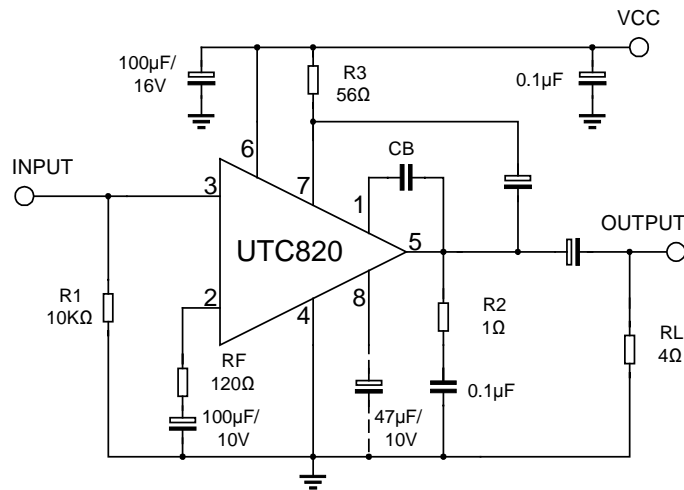
Characteristic	Symbol	Value	Unit
Supply Voltage	V_{cc}	16	V
Output Peak Current	I_{peak}	1.5	A
Power Dissipation	P_D	1.25	W
Operating Temperature	T_{opr}	-20 ~ +70	$^\circ C$
Storage Temperature	T_{stg}	-40 ~ +150	$^\circ C$

ELECTRICAL CHARACTERISTICS

($T_a=25^{\circ}\text{C}$, $V_{cc}=9\text{V}$, $f=1\text{kHz}$, $R_G=600\Omega$, $R_F=120\Omega$, $R_L=8\Omega$, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Quiescent circuit current	I_{ccQ}	$V_I=0$		4	12	mA
Output Power	P_o	$V_{cc}=9\text{V}, R_L=4\Omega, \text{THD}=10\%$		1.6		W
		$V_{cc}=9\text{V}, R_L=8\Omega, \text{THD}=10\%$	0.9	1.2		
		$V_{cc}=6\text{V}, R_L=4\Omega, \text{THD}=10\%$		0.75		
		$V_{cc}=6\text{V}, R_L=8\Omega, \text{THD}=10\%$	0.4	0.5		
		$V_{cc}=12\text{V}, R_L=8\Omega, \text{THD}=10\%$		2		
Total Harmonic Distortion	THD	$P_o=500\text{mW}$		0.3	1.0	%
Open Loop Voltage Gain	G_{vo}	$R_F=0$		75		dB
Closed Loop Voltage Gain	G_{vc}	$R_F=120\Omega$	33	36	39	dB
Input Resistance	RI			5		$M\Omega$
Output Noise Voltage	VNO	$R_G=10\text{k}\Omega$ $\text{BW}(-3\text{dB})=50\sim 20\text{kHz}$		0.3	1.0	mW

TEST CIRCUIT



TYPICAL CHARACTERISTIC PERFORMANCE

Fig 1 Quiescent circuit current vs Supply Voltage

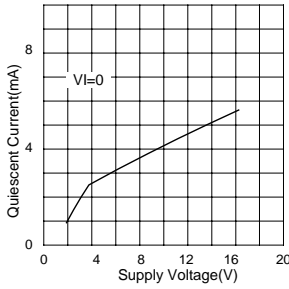


Fig 2 Output power vs Supply Voltage

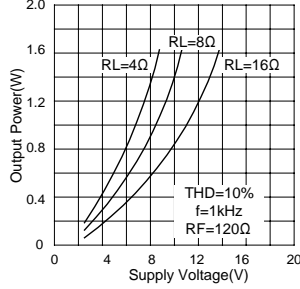


Fig 3 Total harmonic Distortion vs Output power

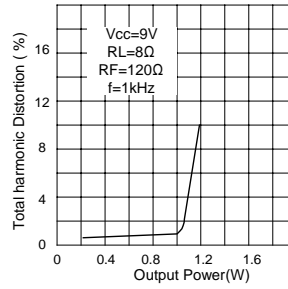


Fig 4 Voltage Gain vs Feedback resistance

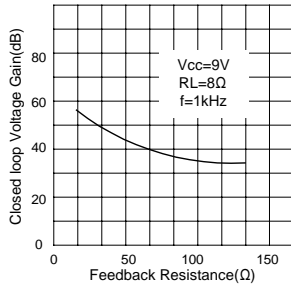


Fig 5 Power Dissipation vs Output power

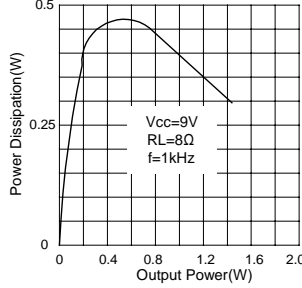


Fig 6 Power Dissipation vs Supply Voltage

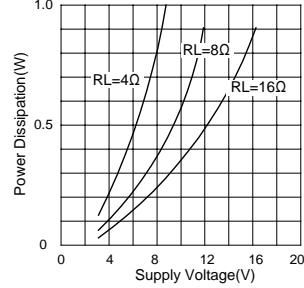


Fig 7 Frequency response

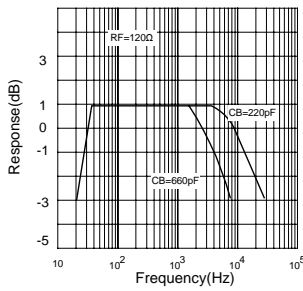


Fig 8 Total Harmonic distortion vs frequency

