

UTC820

LINEAR INTEGRATED CIRCUIT

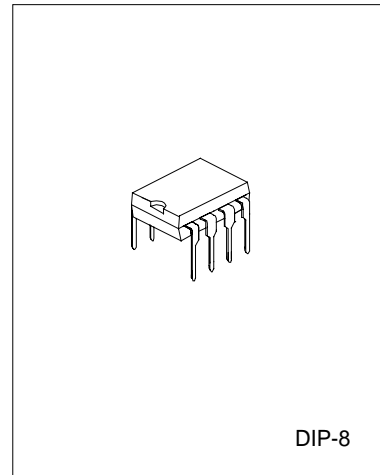
1.2W AUDIO POWER AMPLIFIER

DESCRIPTION

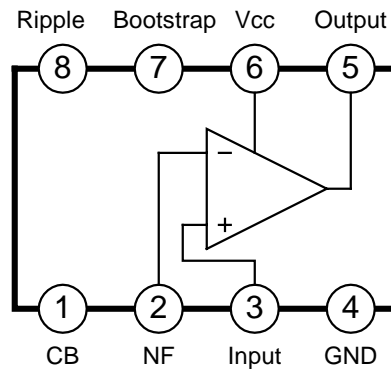
The UTC820 is a monolithic integrated circuit audio amplifier. It is designed for audio frequency Class B amplifiers.

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 ($T_a=25^\circ C$)

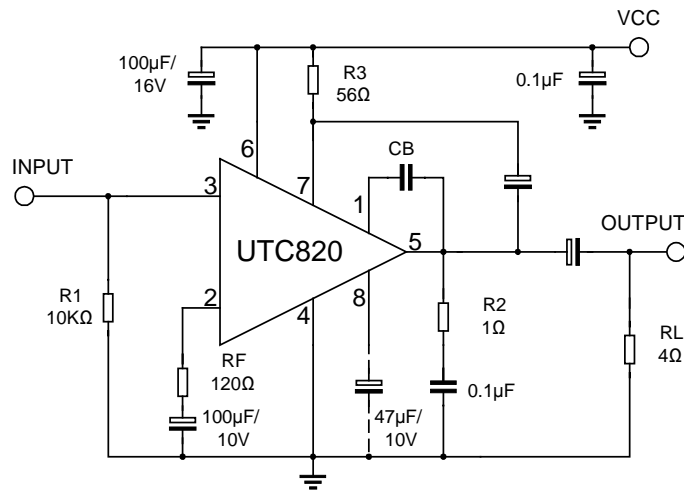
Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Output Peak Current	I_{peak}	1.5	A
Power Dissipation	P_D	1.25	W
Operating Temperature	T_{opr}	-20 ~ +70	$^\circ C$
Storage Temperature	T_{stg}	-40 ~ +150	$^\circ C$

ELECTRICAL CHARACTERISTICS

(Ta=25°C, Vcc=9V, f=1kHz, RG=600Ω, RF=120Ω, RL=8Ω, 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} =9V, R _L =4Ω, THD=10%		1.6		W
		V _{CC} =9V, R _L =8Ω, THD=10%	0.9	1.2		
		V _{CC} =6V, R _L =4Ω, THD=10%		0.75		
		V _{CC} =6V, R _L =8Ω, THD=10%	0.4	0.5		
		V _{CC} =12V, R _L =8Ω, THD=10%		2		
Total Harmonic Distortion	THD	P _o =500mW		0.3	1.0	%
Open Loop Voltage Gain	G _{vo}	R _F =0		75		dB
Closed Loop Voltage Gain	G _{vc}	R _F =120Ω	33	36	39	dB
Input Resistance	R _I			5		MΩ
Output Noise Voltage	V _{NO}	R _G =10kΩ BW(-3dB)=50~20kHz		0.3	1.0	mW

TEST CIRCUIT



TYPICAL CHARACTERISTIC PERFORMANCE

Fig 1 Quiescent circuit current vs Supply Voltage

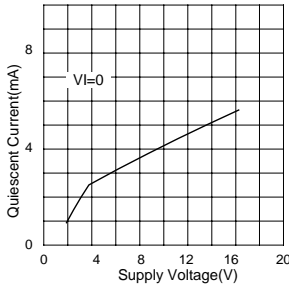


Fig 2 Output power vs Supply Voltage

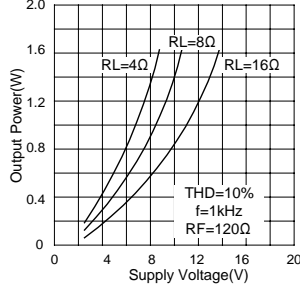


Fig 3 Total harmonic Distortion vs Output power

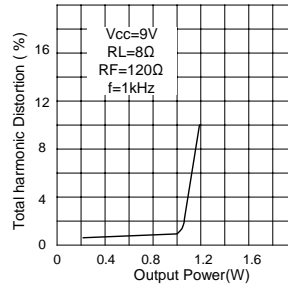


Fig 4 Voltage Gain vs Feedback resistance

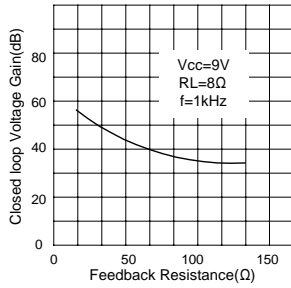


Fig 5 Power Dissipation vs Output power

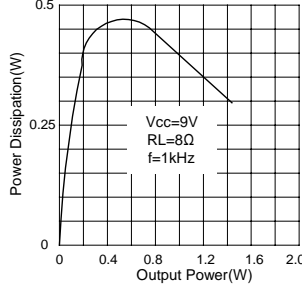


Fig 6 Power Dissipation vs Supply Voltage

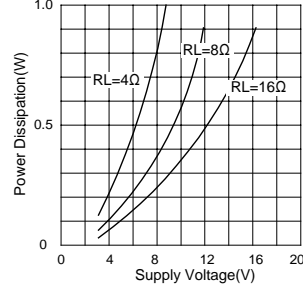


Fig 7 Frequency response

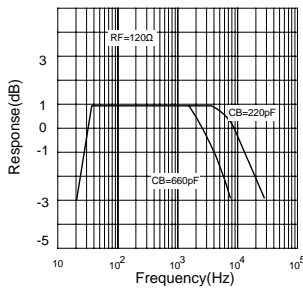


Fig 8 Total Harmonic distortion vs frequency

