

Audio power amplifier

Overview

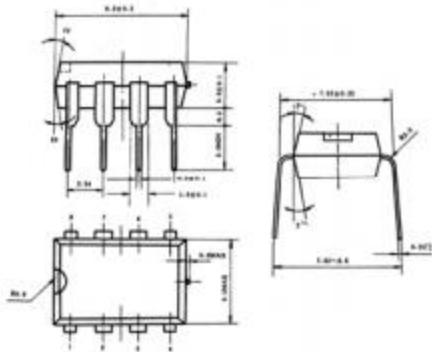
The GC2822Z is used as an audio power amplifier for portable recorders and radios.

It is packaged in DIP8.

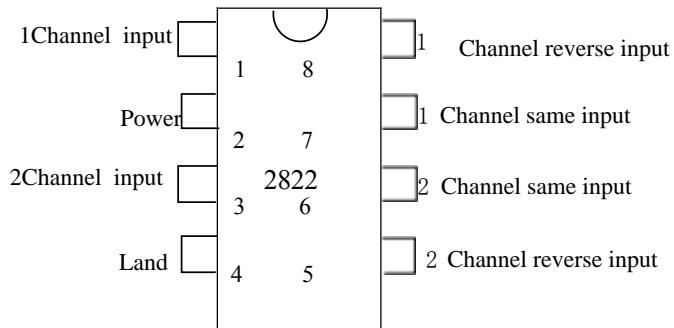
- High channel separation
- Power-on and power-off without impact noise
- soft clipping

Features

- Wide power supply voltage range 3V~12V
- Low crossover distortion
- low quiescent current
- Can be used as bridge or stereo amplifier application
- Fewer peripheral components



Pin layout



Pin Description

Terminal serial number	Function	Symbol	Terminal serial number	Function	Symbol
1	1 channel output	1 OUT	5	2 Channel inverting input	2 IN-
2	Power	Vcc	6	2 Channel non-inverting input	2 IN+
3	2 channel output	2 OUT	7	1 Channel non-inverting input	1 IN+
4	Land	GND	8	1 Channel inverting input	1 IN-

Limits: (Absolute Maximum Ratings, if not otherwise specified, Tamb=25°C)

Parameter name	Symbol	Value		Unit
		Min	Max	
Voltage	Vcc	-	15	V
Output current	Io	-	0.6	A
Working temperature	Tamb	0	70	°C
Storage temperature	Tstag	-40	150	°C

Electrical characteristics: (without special instructions, Vcc=6V, Tamb=25°C) (for stereo application)

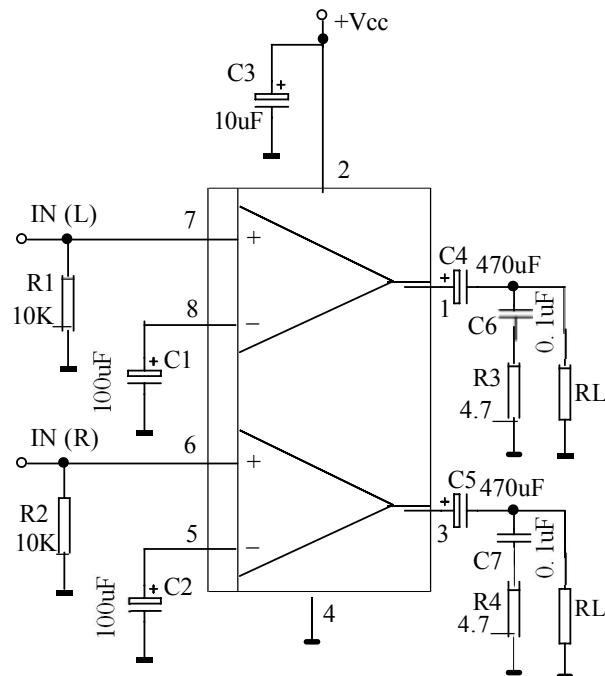
Features	Test condition	Symbol	Canonical value			Unit
			Min	Typ	Max	
Working power voltage		Vcc	1.8	3	12	V
Quiescent output voltage	Vcc=9V	Vo	-	4	-	V
	Vcc=6V		-	2.7	-	V
	Vcc=3V		-	1.2	-	V
Quiescent Current		Icc	-	6	10	mA
input bias current		IBA	-	100	-	nA
Output Power	Po f = 1KHz THD=10%	RL=32Ω	Vcc=9V	-	300	mW
			Vcc=6V	90	120	
			Vcc=3V	15	20	
			Vcc=2V	-	5	
		RL=8Ω	Vcc=9V	-	1000	
			Vcc=6V	300	380	
		RL=4Ω	Vcc=6V	450	650	
			Vcc=4.5V	-	320	
			Vcc=3V	-	110	
			-	-	-	
Channel unbalance		ΔAv	-	-	±1	dB
input resistance	f=1kHz	RI	100	-	-	kΩ
Total input noise	Rs=10kΩ	VNI	-	2	-	μV
	Rs=10kΩ, B=22Hz~22KHz	-	-	3	-	
Ripple rejection ratio	f=100Hz C1=C2=100μF	Srip	24	30	-	dB
Channel isolation	f=1kHz	CSR	-	50	-	dB
Closed loop voltage gain	f=1kHz	Gv	-	40	-	dB

Electrical characteristics: (Without special instructions, Vcc=6V, Tamb=25°C) (BTL application)

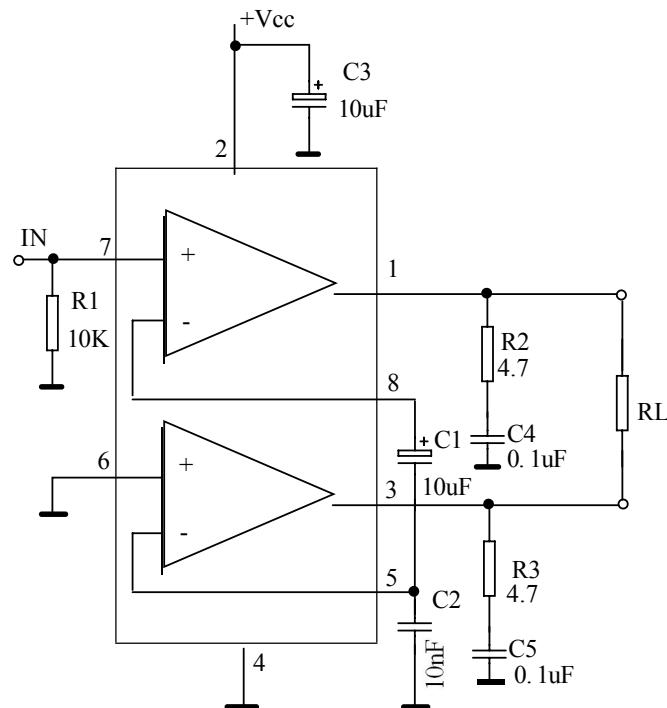
Features	Test Conditions	Symbol	Canonical value			Unit
			Min	Typ	Max	
Voltage		Vcc	1.8	3	9	V
Quiescent Current	RL=∞	Icc	-	6	10	mA
Output offset voltage	RL=8Ω	Vos	-50	-	50	mV
Input bias current		IBA	-	100	-	nA
Output Power	Po f=1KHz THD=10%	RL=32Ω	Vcc=9V		1000	
			Vcc=6V	300	320	
			Vcc=3V	50	65	
			Vcc=2V	-	8	
		RL=16Ω	Vcc=9V		2000	
			Vcc=3V		120	
		RL=8Ω	Vcc=6V	800	1300	
			Vcc=3V	-	220	
		RL=4Ω	Vcc=4.5V		1000	
			Vcc=3V	200	350	
			Vcc=2V	-	80	
			-	-	-	mW
input resistance	f=1kHz	R _i	100	-	-	kΩ
total input noise	Rs=10kΩ	V _{NI}	-	2.5	-	
	Rs=10kΩ, B=22Hz~22KHz	-	-	3	-	μV
Ripple rejection ratio	f=100Hz C1=C2=100μF	S _{rip}	-	40	-	dB
Closed loop voltage gain	f=1kHz	G _v	-	40	-	dB

Test schematic:

1. Stereo Application Test Chart(Resistance unit: Ω)

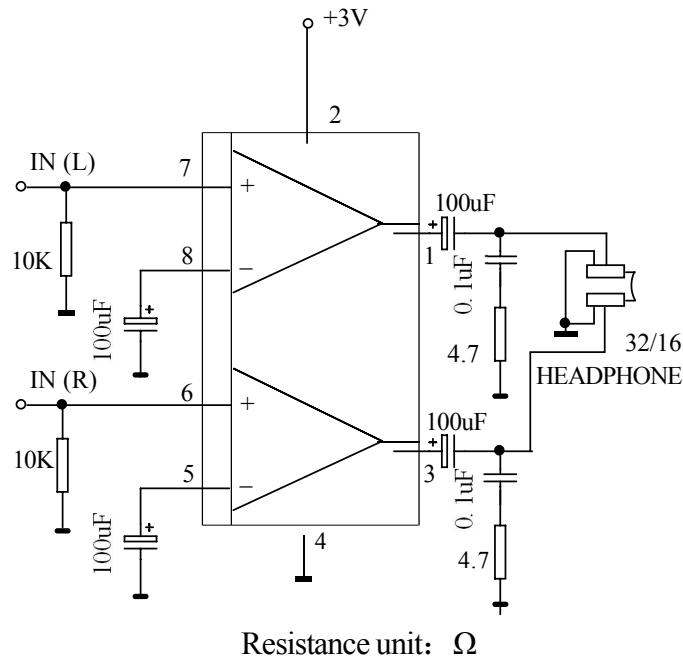


2. Bridge Application Test Chart(Resistance unit: Ω)

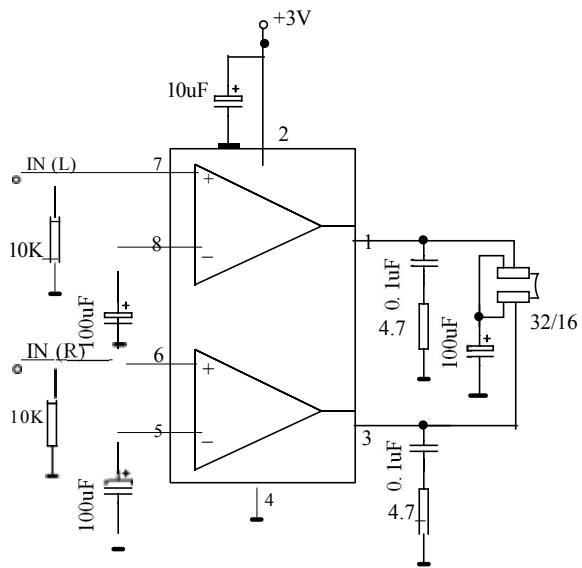


Application diagram

Typical applications in portable recorders

Resistance unit: Ω

Economical application in portable recorders

Resistance unit: Ω