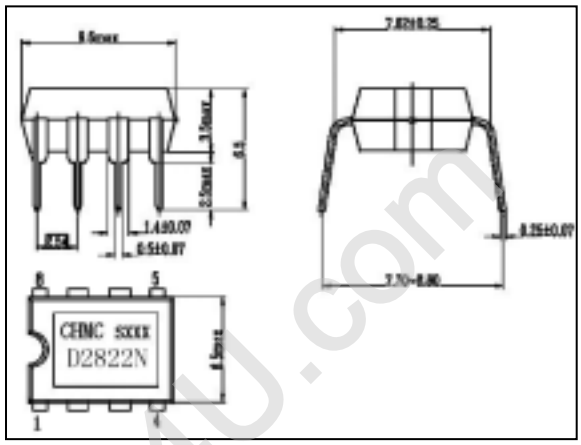
DUAL POWER AMPLIFIER D2822N

GENERAL DESCRIPTION

The D2822N is a monolithic integrated circuit in 8 lead Minidip package. It is intended for use as dual audio power amplifier in portable cassette tape players and radios.

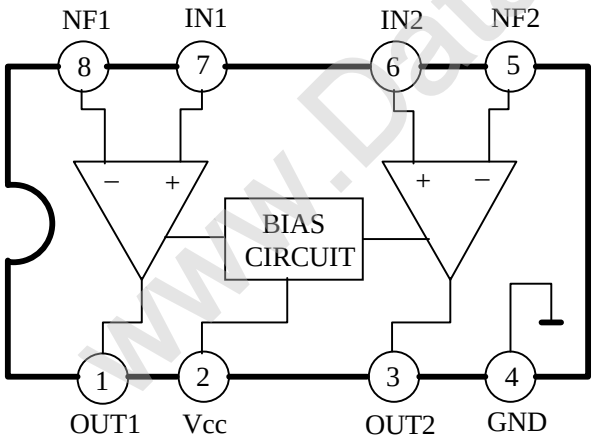


Outline Drawing

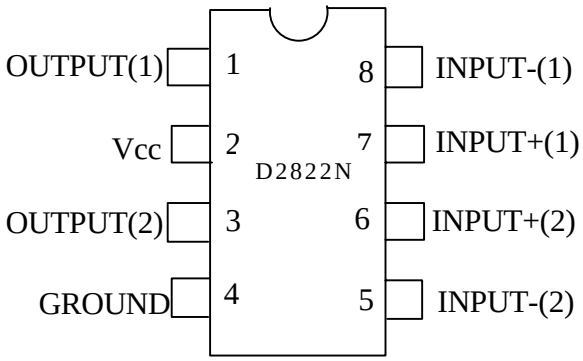
FEATURES

- Dual Low-voltage power amplifier
- Supply voltage down to 1.8V
- Low crossover distortion
- Low quiescent current
- Bridge or stereo configuration

BLOCK DIAGRAM



PINNING



MAXIMUM RATINGS

Characteristics	Symbol	Value	Unit
Supply Voltage	Vcc	15	V
Output Peak Current	Ipk	1	A
Total Power Dissipation(at Tamb=50°C)	P_D	1	W
Total Power Dissipation(at Tcase=50°C)	P_D	1.4	W
Operating Ambient Temperature Range	Ta	-20~70	°C
Storage Temperature Range	Tstg	-40~150	°C

ELECTRICAL CHARACTERISTICS

1.Stereo Test Circuit(Unless otherwise specified Vcc=6V,Tamb=25°C)

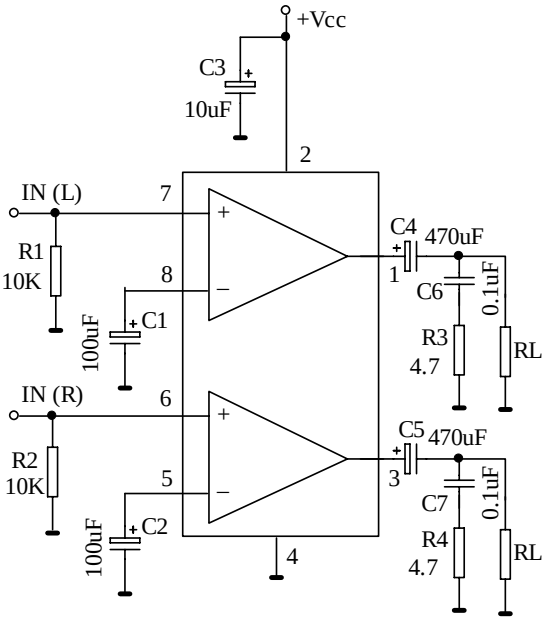
Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc		1.8		15	V
Quiescent Output Voltage	Vo			2.7		V
		Vcc=3V		1.2		V
Quiescent Drain Current	Id			6	9	mA
Input Bias Current	I_{BA}			100		nA
Output Power (Each Channel)	Po	d=10% f=1kHz Vcc=3V R_L=4Ω Vcc=3V R_L=32Ω		110 20		mW
		d=10% f=1kHz Vcc=9V R_L=8Ω Vcc=6V R_L=4Ω Vcc=4.5V R_L=4Ω	0.4	1 0.65 0.32		W
Distortion	THD	Po=0.5W R_L=8Ω f=1kHz Vcc=9V		0.3		%
Closed Loop Voltage Gain	Avf	f=1kHz		40		dB
Channel Balance	ΔAvf				±1	dB
Input Resistance	Ri	f=1kHz	100			kΩ
Total Input Noise	V_{NI}	Rs=10kΩ B=Cure A		2		μV
		Rs=10kΩ B=22Hz to22kHz		3		
Supply Voltage rejection	SVR	f=100Hz C1=C2=100μF	24	30		dB
Channel Separation	CSR	f=1kHz		50		dB

2.Bridge Test Circuit (Unless otherwise specified Vcc=6V,Tamb=25°C)

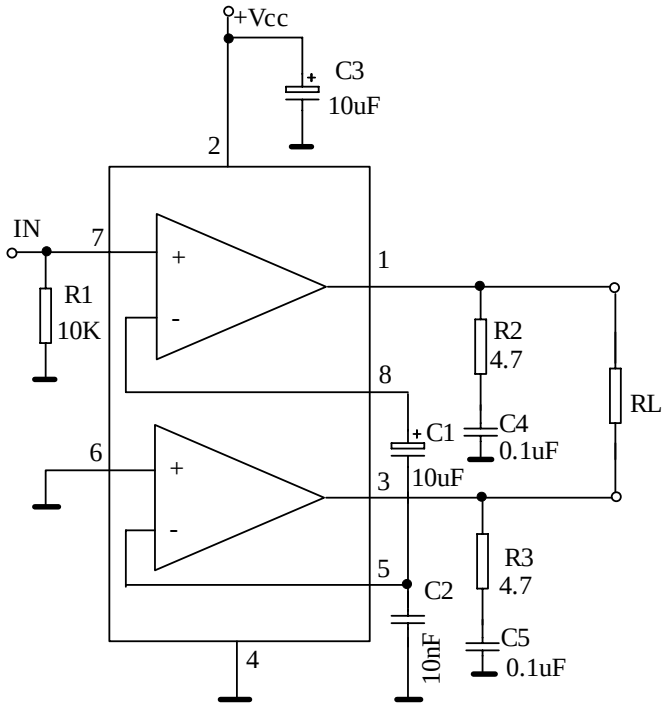
Characteristic	Sym-bol	Test Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc		1.8		15	V
Quiescent Drain Current	Id	$R_L=\infty$		6	9	mA
Output Offset Voltage (Between the Outputs)	Vos	$R_L=8\Omega$			±50	mV
Input Bias Current	Ib			100		nA
Output Power	Po	d=10% f=1kHz Vcc=9V $R_L=16\Omega$ Vcc=6V $R_L=8\Omega$ Vcc=4.5V $R_L=8\Omega$ Vcc=4.5V $R_L=4\Omega$		2 1.35 0.7 1		W
		Vcc=3V $R_L=4\Omega$ Vcc=2V $R_L=4\Omega$	200	350 80		mW
Distortion	THD	Po=0.5W $R_L=8\Omega$ f=1kHz		0.2		%
Closed Loop Voltage Gain	Avf	f=1kHz		40		dB
Input Resistance	Ri	f=1kHz	100			kΩ
Total Input Noise	V_{NI}	Rs=10kΩ Curve A		2.5		μV
		Rs=10kΩ B=22Hz to 22kHz		3		
Supply Voltage Rejection	SVR	f=100Hz		40		dB
Power Bandwidth (-3dB)	B	$R_L=8\Omega$ Po=1W		120		kHz

TEST CIRCUIT

1.STEREO TEST CIRCUIT

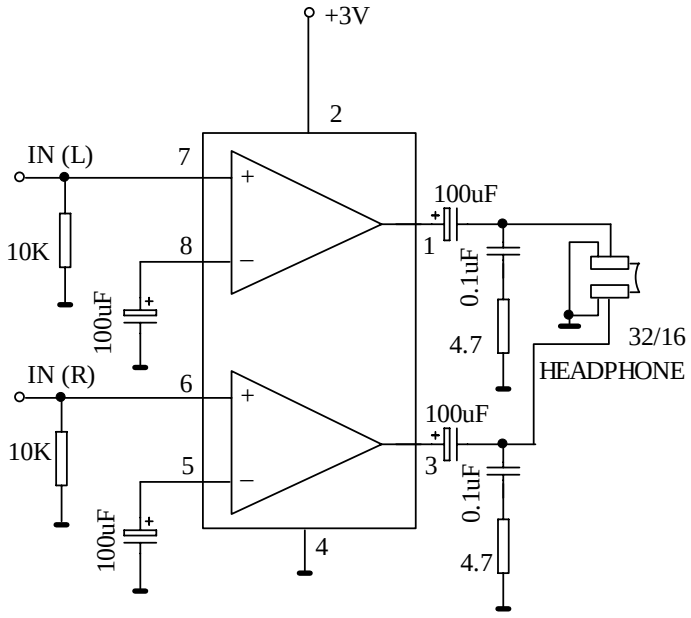


2.BRIDGE TEST CIRCUIT



APPLICATION CIRCUIT

1. Typical application in portable players



CHARACTERISTICS CURVES

Fig. 4 – Quiescent current vs. supply voltage

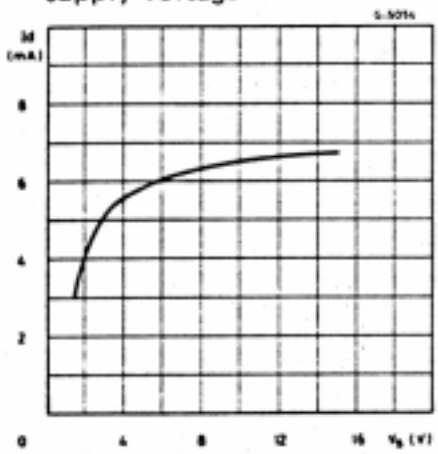


Fig. 5 – Supply voltage rejection vs. frequency (stereo)