TDA2822M Dual Low-Voltage Power Amplifier

The TDA2822M is a monolithic integrated circuit in 8 lead Minidip package.It is intended for use as dual audio power amplifier in portable cassette player and radios.

Features

- Supply Voltage Down to 1.8V
- Low Crossover Distorsion
- Low Quiescent Current
- Bridge or Stereo Configuration

8-DIP

1.OUTPUT(1)	5.INPUT(2)
2.SUPPLY VOLTAGE	6.INPUT(2)
3.OUTPUT(2)	7.INPUT(1)
4.GROUND	8.INPUT(1)

Absolute Maximum Ratings

Symbol	Parameter	Value	Unite
Vs	Supply Voltage	16	V
Io	Peak Output Current	1	A
Ptot	Total Power Dissipation at Tamb=50°C	1	W
	Tcase=50°C	1.4	W
Tstg,Tj	Storage and Junction Temperature	-40,+150	°C

Thermal Data

Symbol	Parameter	Value	Unite
Rthj-amb	Thermal Resistance Junction-ambient Max.	100	°C/W
Rthj-case	Thermal Resistance Junction-pin(4) Max.	70	°C/W

Electrical Characteristics(Vs=6V,Tamb=25°C,unless otherwise specified)

Symbol	Paramete	Test Conditions	Min.	Typ.	Max.	Unit
STEREO(test circuit of Figure 1)						
Vs	Suppy Voltage		1.8		15	V
Vo	Quiescent Ouput Voltage			2.7		V
		Vs=3V		1.2		V
Id	Quiescent Drain Current			6	9	mA
Ib	Input Bias Current			100		nA
Po	Outut Power (each channel) (f=1KHz, d=10%)	R_L=32Ω Vs=9V		300		mW
		Vs=6V	90	120		
		Vs=4.5V		60		
		Vs=3V	15	20		
		Vs=2V		5		
		R_L=16Ω Vs=6V	170	220		
		R_L=8Ω Vs=9V		1000		
		Vs=6V	300	380		
		R_L=4Ω Vs=6V	450	650		
		Vs=4.5V		320		
		Vs=3V		110		
d	Distortion(f=1KHz)	R_L=32Ω Po=40mW		0.2		%
		R_L=16Ω Po=75mW		0.2		%
		R_L=8Ω Po=150mW		0.2		%
Gv	Close Loop Voltage Gain	f=1KHz	36	39	41	dB
ΔGv	Channel Balance				±1	dB
Ri	Input Resistance	f=1KHz	100			KΩ
e_N	Total Input Noise	Rs=10KΩ B=Curve A		2		μV
		B=22Hz to 22KHz		2.5		μV
SVR	Supply Voltage Rejection	f=100Hz, C1=C2=100μF		24	30	dB
Cs	Channel Separation	f=1KHz			50	dB
BRIDGE(test circuit of Figure 2)						
Vs	Supply Voltage		1.8		15	V
Id	Quiescent Drain Current	R_L=∞				
Vos	Output Offset Voltage (between the outputs)	R_L=8Ω				
Ib	Input Bias Current					
Po	Output Bias Current	R_L=32Ω Vs=9V		1000		mW
		Vs=6V	320	400		
		Vs=4.5V		200		
		Vs=3V	50	65		
		Vs=2V		8		
		R_L=16Ω Vs=9V		2000		
		Vs=6V		800		
		Vs=3V		120		
		R_L=8Ω Vs=6V	900	1350		
		Vs=4.5V		700		
		Vs=3V		220		
		R_L=4Ω Vs=4.5V		1000		
		Vs=3V	200	350		
		Vs=2V		80		
d	Output Power (f=1KHz,d=10%)	Po=0.5W,R_L=8Ω ,f=1KHz		0.2		%
Gv	Closed Loop Voltage Gain	f=1KHz		39		dB
Ri	Input Resistance	f=1KHz	100			KΩ
e_N	Total Input Noise	Rs=10KΩ B=Curve A		2.5		μV
		B=22Hz to 22KHz		3		μV
SVR	Supply Voltage Rejection	f=100Hz		40		dB
B	Power Bandwidth (-3dB)	R_L=8Ω ,Po=1W		120		KHz

Schematic Diagram

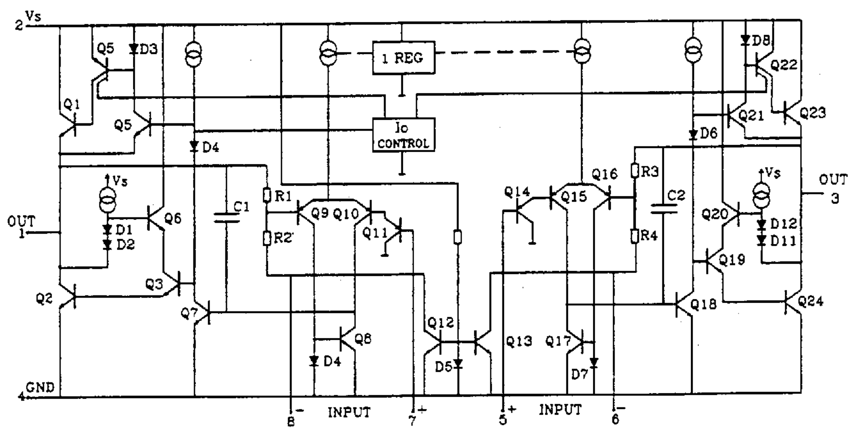


Figure 1:Test Circuit(Stereo)

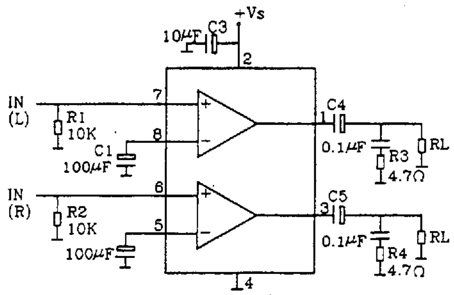


Figure 2.Test Circuit (Bridge)

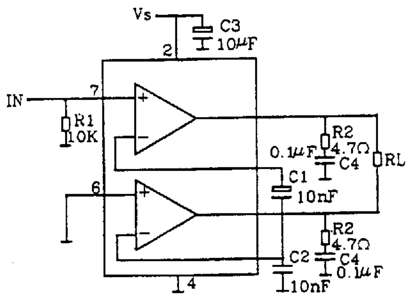


Figure 3.Typical Application in Portable Players

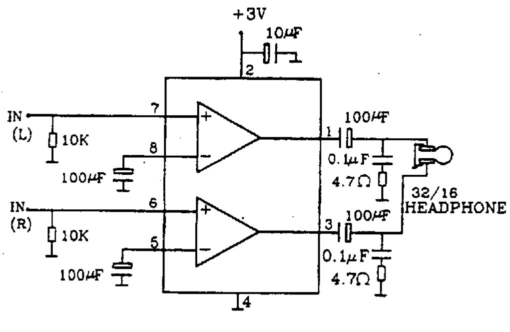


Figure 4.Application in Portable Radio Receivers

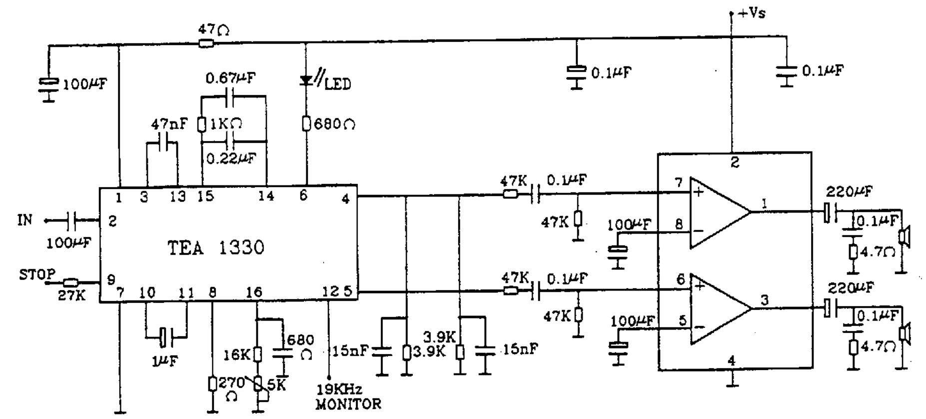
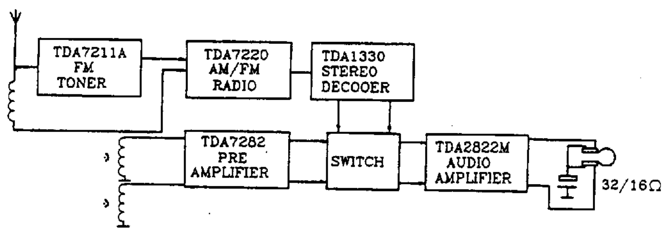
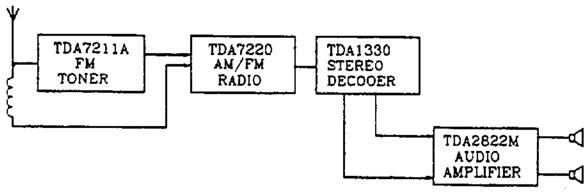


Figure 5.Portable Radio Cassette Players



Type	Supply Voltage
TDA7220	1.5V to 6V
TDA7221A	1.2V to 6V
TEA1330	3V to 15V
TDA7282	1.5V to 6V
TDA2822A	1.8V to 15V

Figure 6.Portable Stereo Radio



Type	Supply Voltage
TDA7220	1.5V to 6V
TDA7221A	1.2V to 6V
TEA1330	3V to 15V
TDA2822A	1.8V to 15V

Figure 7.Low Cose Application in Portable Players(using only one 100μ F output capacitor)

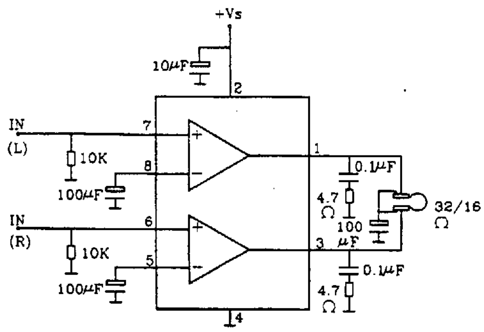


Figure 8.3V Stereo Cassette Player with Motor Speed Control

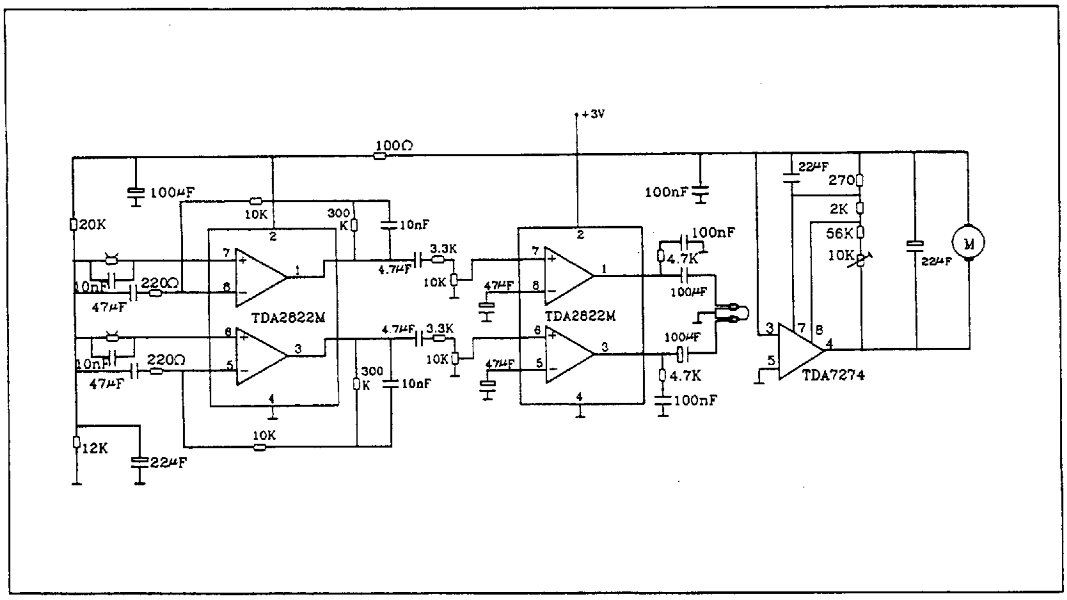


Figure 9.Quiescent Current versus Supply Voltage

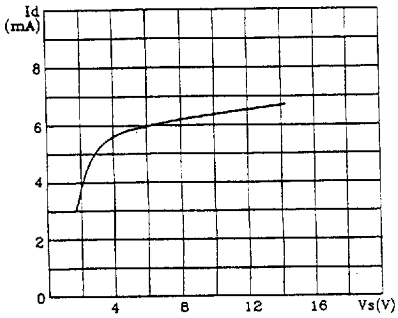


Figure 10.Supply Voltage Rejection versus Frequency

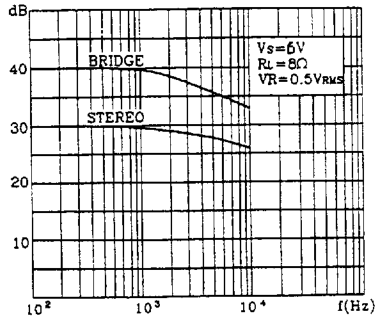


Figure 11.Output Power versus Supply Voltage (THD=10%,f=1KHz Stereo)

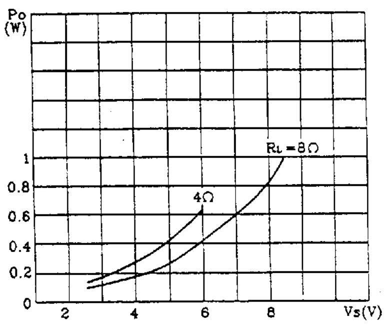


Figure 12.Distorsion versus Output Power (Stereo)

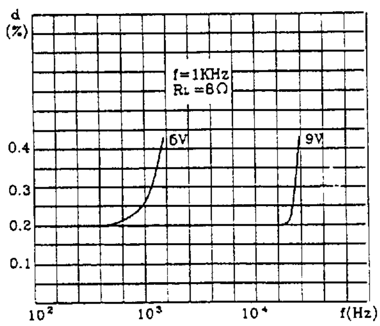


Figure 13.Distorsion versus Output Power (Stereo)

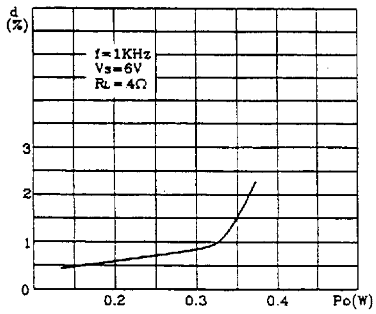


Figure 14.Output Power versus Supply Voltage (Bridge)

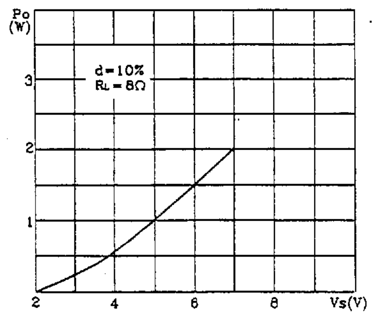


Figure 15.Distorsion versus Output Power (Bridge)

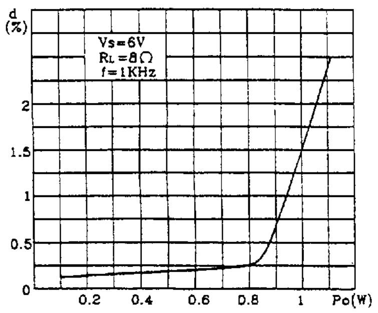


Figure 16.Total Power Dissipation versus Output Power (Bridge)

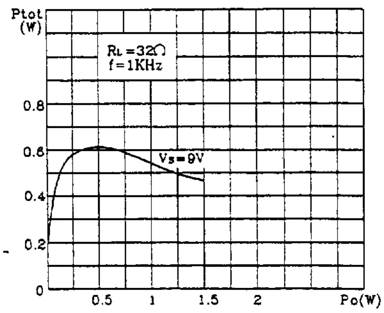


Figure 17.Total Power Dissipation versus Output Power(Bridge)

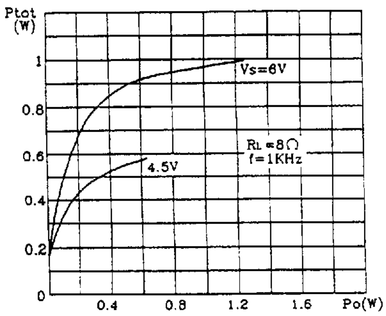


Figure 18.Total Power Dissipation versus Output Power(Bridge)

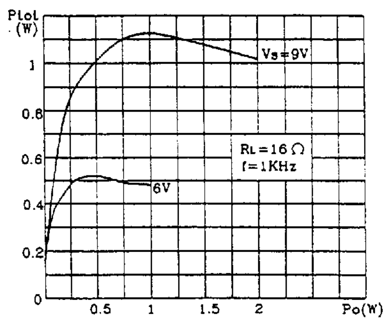


Figure 19.Total Power Dissipation versus Output Power(Bridge)