

TDA7497

10 + 10W STEREO AMPLIFIER WITH MUTE/ST-BY

PRODUCT PREVIEW

- WIDE SUPPLY VOLTAGE RANGE (UP TO ±22V ABS MAX.)
- SPLIT SUPPLY
- HIGH OUTPUT POWER: 10 + 10W @ THD =10%, R_L = 8Ω, V_S = ±14V
 NO POP AT TURN-ON/OFF
- NO POP AT TURN-C
 MUTE (POP FREE)
- MOTE (POP FREE)
 STAND-BY FEATURE (LOW IQ)
- FEW EXTERNAL COMPONENTS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

DESCRIPTION

The TDA7497 is class AB dual Audio power amplifier assembled in the Multiwatt package, spe-

Figure 1: Typical Application Circuit



cially designed for high quality sound application as Hi-Fi music centers and stereo TV sets.



This is advanced information on a new product now in development or undergoing evaluation. Details are subject to change without notice.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	DC Supply Voltage	±22	V
lo	Output Peak Current (internally limited)	3	А
P _{tot}	Power Dissipation T _{case} = 70°C	12	W
T _{stg} , T _j	Storage and Junction Temperature	-40 to +150	°C

PIN CONNECTION (Top view)



THERMAL DATA

Syı	mbol	Description		Value	Unit
Rth	n j-case	Thermal Resistance Junction-case	Max	2	°C/W



Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Unit
Vs	Supply Range		<u>+</u> 5		<u>+</u> 20	V
lq	Total Quiescent Current			80		mA
Po	Output Power	d = 10% d = 1%		10 7.5		W W
d	Total Harmonic Distortion	P _O = 1W P _O = 0.1 to 5W f = 0.1 to 15KHz		0.02	0.5	% %
CT	Cross Talk	f = 1KHz f = 10KHz		70 60		dB dB
SR	Slew Rate			10		V/µs
Gv	Closed Loop Voltage Gain		29	30	31	dB
ΔG_V	Voltage Gain Matching			0.2		dB
e _N	Total Input Noise	A Curve f = 20Hz to 22KHz		2.5 3.5	8	μV μV
R _i	Input Resistance		15	20		KΩ
SVR	Supply Voltage Rejection (each channel)	fr = 100Hz; Vripple = 0.5VRMS		60		dB
Tj	Thermal Shut-down Junction Temperature			145		°C
MUTE FUN	ICTION [ref: +Vs]					
VT _{MUTE}	Mute / Play Threshold		-7	-6	-5	V
A _M	Mute Attenuation		60	90		dB
STAND-BY	FUNCTION [ref: +Vs]					
VT _{ST-BY}	Stand-by / Mute Threshold		-3.5	-2.5	-1.5	V
A _{ST-BY}	Stand-by Attenuation			110		dB
I _{q ST-BY}	Quiescent Current @ Stand-by			3		mA

ELECTRICAL CHARACTERISTICS (Refer to the test circuit, Vs \pm 14V; RL = 8 Ω ; Rs = 50 Ω ; f = 1KHz; T_{amb} = 25°C, unless otherwise specified.)

Note :

(*) FULL POWER up to. V_S = $\pm 22.5 V$ with R_L = 8Ω and V_S = $\pm 16 V$ with R_L = 4Ω

The recommended values of the external compo-

MUSIC POWER is the maximal power which the amplifier is capable of producing across the rated load resistance (regardless of non linearity) 1 sec after the application of a sinusoidal input signal of frequency 1KHz.

APPLICATIONS SUGGESTION

(Demo Board Schematic)

nents are those shown on the demo board schematic. Different values can be used: the following table can help the designer.

COMPONENTS RECOMMENDED VALUE		PURPOSE	LARGER THAN RECOMMENDED VALUE	SMALLER THAN RECOMMENDED VALUE	
R1	R1 10KΩ Mute Circuit		Increase of Dz Biasing Current		
R2	15KΩ	Mute Circuit	Vpin # 4 Shifted Downward	Vpin # 4 Shifted Upward	
R3	18KΩ	Mute Circuit	Vpin # 4 Shifted Upward	Vpin # 4 Shifted Downward	
R4	15KΩ	Mute Circuit	Vpin # 4 Shifted Upward	Vpin # 4 Shifted Downward	
R5, R6	4.7Ω	Frequency Stability	Danger of Oscillations	Danger of Oscillations	
C1, C2	1µF	Input DC Decoupling		Higher Low Frequency Cutoff	
C3	1µF	St-By/Mute Time Constant	Larger On/Off Time	Smaller On/Off Time	
C4, C6	1000µF	Supply Voltage Bypass		Danger of Oscillations	
C5, C7	0.1µF	Supply Voltage Bypass		Danger of Oscillations	
C8, C9	0.1µF	Frequency Stability			
Dz	5.1V	Mute Circuit			



Figure 2: Application circuit



Figure 3: Demo Board Schematic



MUTE STAND-BY FUNCTION

The pin 4 (MUTE/STAND-BY) controls the amplifier status by two different thresholds, referred to +Vs.

- When V_{pin4} higher than = +Vs 2.5V the amplifier is in Stand-by mode and the final stage generators are off
- when V_{pin4} is between +Vs 2.5V and +Vs
 6V the final stage current generators are switched on and the amplifier is in mute mode
- when V_{pin4} is lower than +Vs 6V the amplifier is play mode.



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Figure 4: Attenuation & Total Quiescent Current vs. Vpin4 Voltage

TDA7497

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А			5			0.197	
В			2.65			0.104	
С			1.6			0.063	
E	0.49		0.55	0.019		0.022	
F	0.78		0.85	0.030		0.033	
F1	0.68		0.75	0.027		0.029	
G	2.40	2.54	2.68	0.094	0.10	0.105	
G1	17.64	17.78	17.92	0.69	0.70	0.71	
H1	19.6			0.772			
H2			20.2			0.795	
L	20.35		20.65	0.80		0.81	
L1		15.7			0.62		
L2	17.05	17.20	17.35	0.67	0.68	0.68	
L3	17.25	17.5	17.75	0.679	0.689	0.699	
L4	10.3	10.7	10.9	0.406	0.421	0.429	
L5	15.45		15.75	0.61		0.62	
L7	2.65		2.9	0.104		0.114	
S	1.9		2.6	0.075		0.102	
S1	1.9		2.6	0.075		0.102	
U	0.40		0.55	0.015		0.022	
Z	0.70		0.85	0.028		0.034	
Dia1	3.65		3.85	0.144		0.152	

MULTIWATT8 PACKAGE MECHANICAL DATA



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