

# **TDA7261**

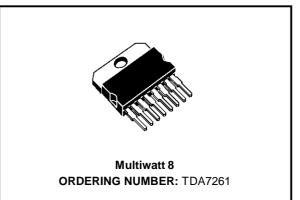
# 25W MONO AMPLIFIER WITH MUTE/ST-BY

- WIDE SUPPLY VOLTAGE RANGE (UP TO -50V ABS MAX.)
- SPLIT SUPPLY
- HIGH OUTPUT POWER:
- 25W @ THD =10%,  $R_L = 8\Omega$ ,  $V_S = \pm 20V$ NO POP AT TURN-ON/OFF
- MUTE (POP FREE)
- STAND-BY FEATURE (LOW IQ)
- FEW EXTERNAL COMPONENTS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

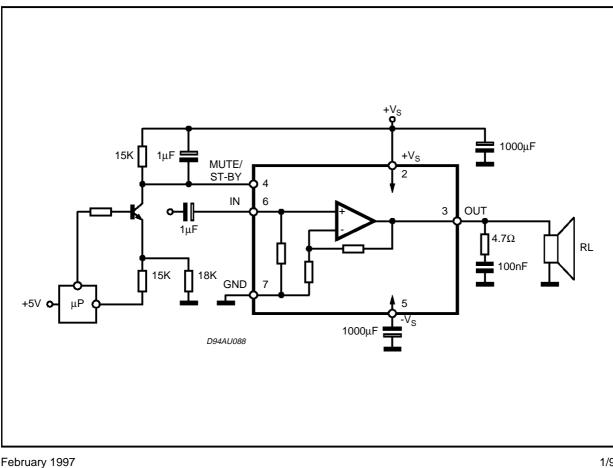
#### DESCRIPTION

The TDA7261 is class AB Audio power amplifier assembled in the Multiwatt package, specially de-

Figure 1: Typical Application Circuit



signed for high quality sound application in mono TV chassis.

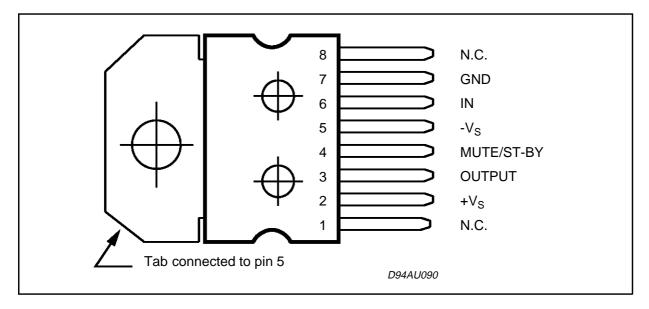


### TDA7261

#### **ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
Vs	DC Supply Voltage	50	V
lo	Output Peak Current (internally limited)	4.5	А
P <sub>tot</sub>	Power Dissipation T <sub>case</sub> = 70°C	30	W
T <sub>stg</sub> , T <sub>j</sub>	Storage and Junction Temperature	-40 to +150	°C

# PIN CONNECTION (Top view)



#### THERMAL DATA

Symbol	Description		Value	Unit
R <sub>th j-case</sub>	Thermal Resistance Junction-case	Max	2.5	°C/W



Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Unit
Vs	Supply Range		<u>+</u> 5		<u>+</u> 22.5	V
ا <sub>م</sub>	Total Quiescent Current			30		mA
Po	Music Output Power (*)	$\label{eq:thdef} \begin{array}{l} THD = 10\%;  R_L = 8\Omega \; ; \\ V_S \; \underline{\textbf{+}} \; 28.5 V; \end{array}$		32		W
Po	Output Power	$\begin{array}{l} THD = 10\% \\ R_L = 8\Omega \; ; \\ V_S \pm 16V; \; R_L = 4\Omega \\ THD = 1\% \\ R_L = 8\Omega \; ; \end{array}$	20	25 25 20		W W W
		$V_{\rm S} \pm 16V; R_{\rm L} = 4\Omega$		20		W
THD	Total Harmonic Distortion	$R_L = 8\Omega$ ; $P_O = 1W$ ; $f = 1KHz$		0.02		%
		$ \begin{array}{l} R_L = 8\Omega \ ; \\ P_O = 0.1 \ \text{to} \ 15 W; \\ f = 100Hz \ \text{to} \ 15KHz \end{array} $			0.5	%
		$R_L = 4\Omega$ ; $P_O = 1W$ ; $f = 1KHz$		0.03		%
		$R_L = 4\Omega$ ; $V_S \pm 16V$ ; $P_O = 0.1$ to 12W; f = 100Hz to 15KHz			1	%
SR	Slew Rate			10		V/µs
Gv	Closed Loop Voltage Gain		29	30	31	dB
$\Delta G_V$	Voltage Gain Matching			0.2		dB
e <sub>N</sub>	Total Input Noise	A Curve f = 20Hz to 22KHz		2.5 3.5	8	μV μV
Ri	Input Resistance		15	20		KΩ
SVR	Supply Voltage Rejection	fr = 100Hz; Vripple = 0.5V <sub>RMS</sub>		60		dB
Tj	Thermal Shut-down Junction Temperature			145		°C
MUTE FUN	CTION [ref: +Vs]					
VT <sub>MUTE</sub>	Mute / Play Threshold		-7	-6	-5	V
A <sub>M</sub>	Mute Attenuation		60	90		dB
STAND-BY	FUNCTION [ref: +Vs]					
VT <sub>ST-BY</sub>	Stand-by / Mute Threshold		-3.5	-2.5	-1.5	V
A <sub>ST-BY</sub>	Stand-by Attenuation			110		dB
Iq ST-BY	Quiescent Current @ Stand-by			3		mA

**ELECTRICAL CHARACTERISTICS** (Refer to the test circuit,  $V_S \pm 20V$ ;  $R_L = 8\Omega$ ;  $R_s = 50\Omega$ ; f = 1 KHz;  $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified.)

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

The recommended values of the external compo-

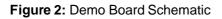
nents are those shown on the demo board schematic. Different values can be used: the following table can help the designer.

COMPONENTS	RECOMMENDED VALUE	PURPOSE	LARGER THAN RECOMMENDED VALUE	SMALLER THAN RECOMMENDED VALUE	
R1	10KΩ	Mute Circuit	Increase of Dz Biasing Current		
R2	15ΚΩ	Mute Circuit	Vpin # 4 Shifted Downward	Vpin # 4 Shifted Upward	
R3	18KΩ	Mute Circuit	Vpin # 4 Shifted Upward	Vpin # 4 Shifted Downward	
R4	15ΚΩ	Mute Circuit	Vpin # 4 Shifted Upward	Vpin # 4 Shifted Downward	
R5	4.7Ω	Frequency Stability Danger of Oscillations		Danger of Oscillations	
C1	1µF	Input DC Decoupling		Higher Low Frequency Cutoff	
C2	1µF	St-By/Mute Time Constant	Larger On/Off Time	Smaller On/Of Time	
C3, C5	1000µF	Supply Voltage Bypass		Danger of Oscillations	
C4, C6	0.1µF	Supply Voltage Bypass	age Danger of Osci		
C7	0.1µF	Frequency Stability			
Dz	5.1V	Mute Circuit			
Q1	BC107	Mute Circuit			

#### MUTE, STAND-BY TRUTH TABLE

SW1	SW2	
A	А	STAND-BY
А	В	STAND-BY
В	В	MUTE
В	A	PLAY





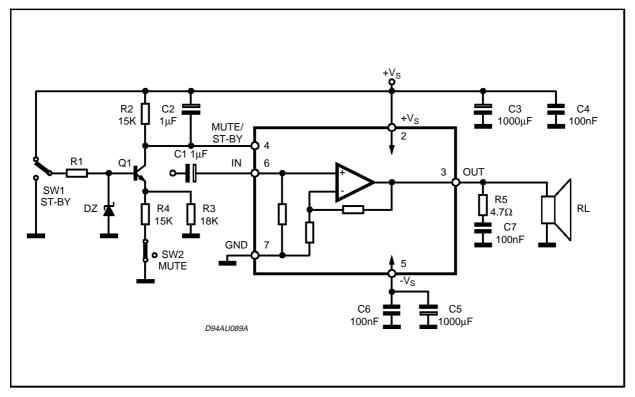
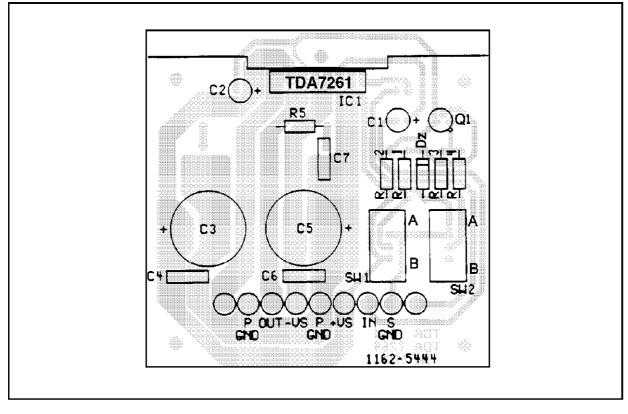


Figure 3: P.C. Board And Component Layout of the Demo Board Schematic (1:1 Scale)





10 <sub>F</sub>

1

0.1

0.01

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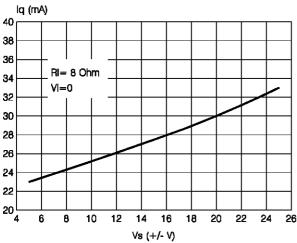


Figure 4: Quiescent Current vs. Supply Voltage

Figure 5: Output Power vs Supply Voltage

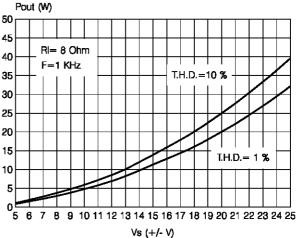
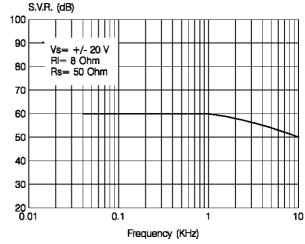
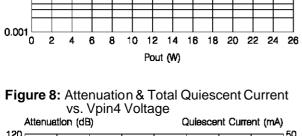
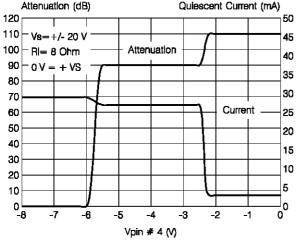


Figure 7: Supply Voltage Rejection vs. Fequency





f=1 KHz



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Figure 9: Power Dissipation vs. Output Power

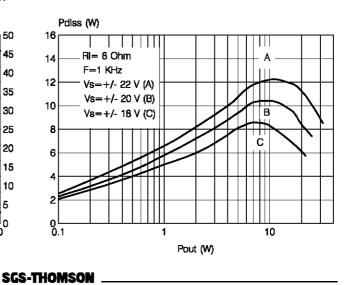




Figure 6: Distortion vs. Output Power

T.H.D. (%)

Vs= +/- 20 V RI= 8 Ohm F= 15 KHz

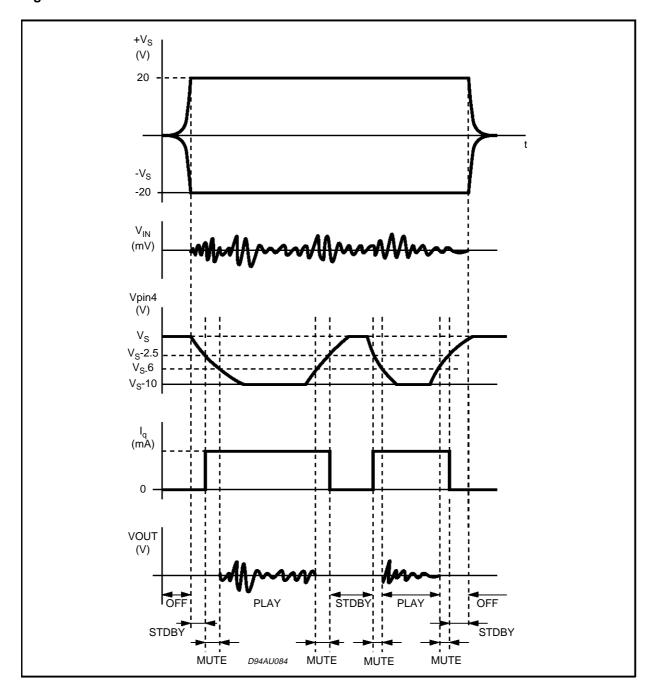
#### **MUTE STAND-BY FUNCTION**

The pin 4 (MUTE/STAND-BY) controls the amplifier status by two different theresholds, referred to  $+V_{S}.$ 

- When  $V_{pin4}$  higher than = +Vs - 2.5V the amplifier is in Stand-by mode and the final stage generators are off.

## Figure 10

- When  $V_{\text{pin4}}$  is between +Vs 2.5V and +Vs 6V the final stage current generators are switched on and the amplifier is in mute mode.
- When  $V_{\text{pin4}}$  is lower than +V\_S 6V the amplifier is play mode.

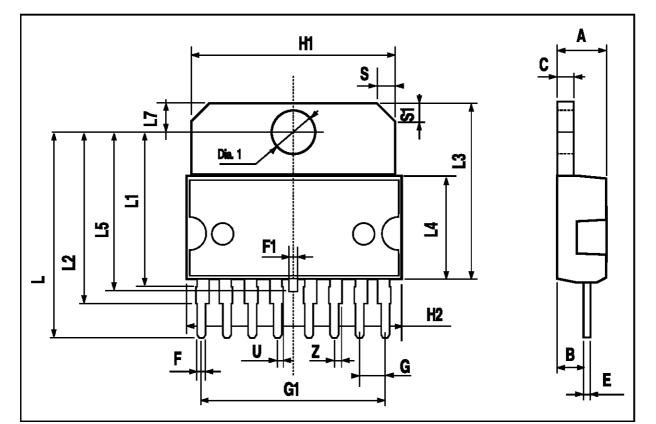




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DIM.	mm			inch		
Diwi.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А			5			0.197
В			2.65			0.104
С			1.6			0.063
E	0.49		0.55	0.019		0.022
F	0.78		0.85	0.030		0.033
G	2.40	2.54	2.68	0.094	0.10	0.105
G1	17.64	17.78	17.92	0.69	0.70	0.71
H1	19.6			0.772		
H2			20.2			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
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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