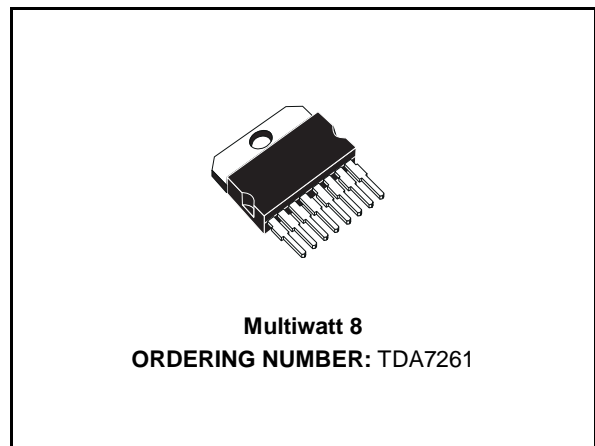


25W MONO AMPLIFIER WITH MUTE/ST-BY

- 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 I_Q)
- FEW EXTERNAL COMPONENTS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

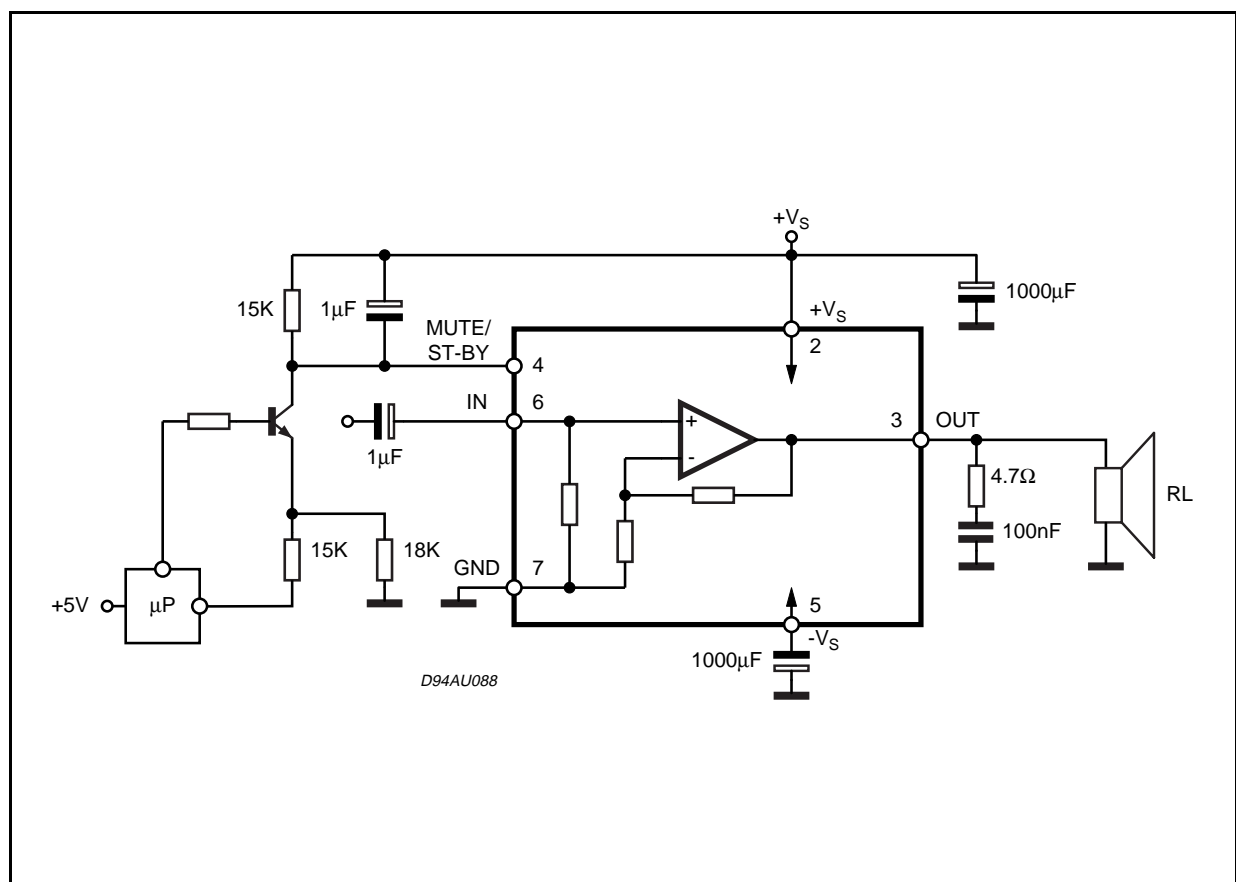


DESCRIPTION

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

signed for high quality sound application in mono TV chassis.

Figure 1: Typical Application Circuit

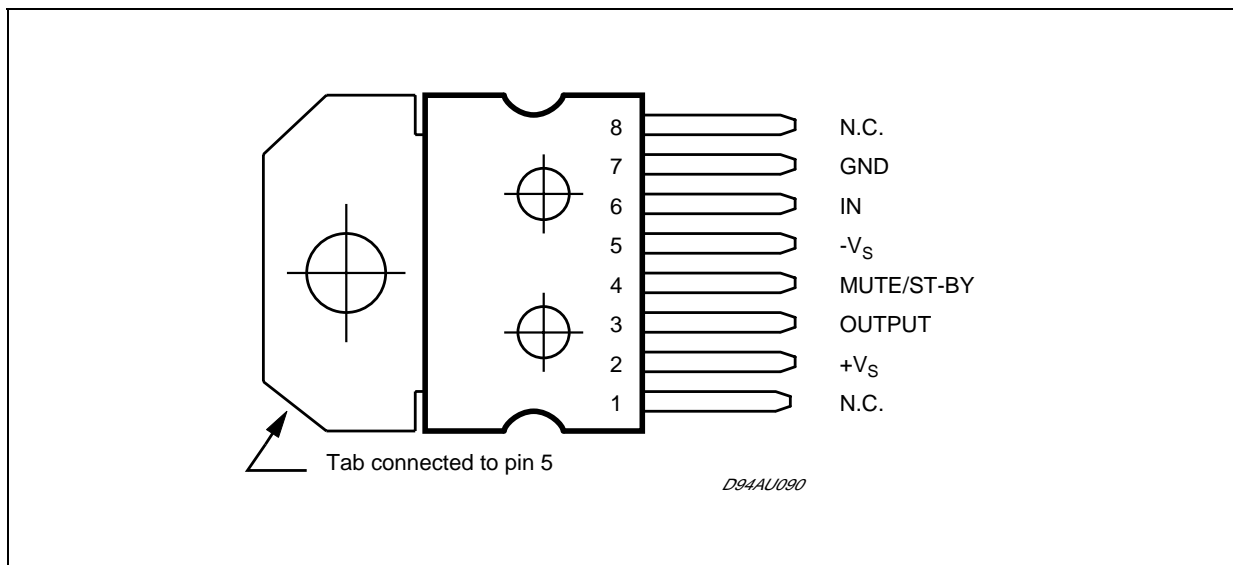


TDA7261

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	DC Supply Voltage	50	V
I_o	Output Peak Current (internally limited)	4.5	A
P_{tot}	Power Dissipation $T_{case} = 70^\circ\text{C}$	30	W
T_{stg}, T_j	Storage and Junction Temperature	-40 to +150	$^\circ\text{C}$

PIN CONNECTION (Top view)



THERMAL DATA

Symbol	Description	Value	Unit
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max 2.5	$^\circ\text{C/W}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Range		± 5		± 22.5	V
I_q	Total Quiescent Current			30		mA
P_O	Music Output Power (*)	THD = 10%; $R_L = 8\Omega$; $V_S \pm 28.5V$;		32		W
P_O	Output Power	THD = 10% $R_L = 8\Omega$; $V_S \pm 16V$; $R_L = 4\Omega$	20	25 25		W W
		THD = 1% $R_L = 8\Omega$; $V_S \pm 16V$; $R_L = 4\Omega$		20 20		W W
THD	Total Harmonic Distortion	$R_L = 8\Omega$; $P_O = 1W$; $f = 1KHz$		0.02		%
		$R_L = 8\Omega$; $P_O = 0.1$ to $15W$; $f = 100Hz$ to $15KHz$			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
G_V	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		K Ω
SVR	Supply Voltage Rejection	$f_r = 100Hz$; $V_{ripple} = 0.5V_{RMS}$		60		dB
T_j	Thermal Shut-down Junction Temperature			145		$^\circ C$
MUTE FUNCTION [ref: +Vs]						
V_{TMUTE}	Mute / Play Threshold		-7	-6	-5	V
A_M	Mute Attenuation		60	90		dB
STAND-BY FUNCTION [ref: +Vs]						
V_{TST-BY}	Stand-by / Mute Threshold		-3.5	-2.5	-1.5	V
A_{ST-BY}	Stand-by Attenuation			110		dB
I_{qST-BY}	Quiescent Current @ Stand-by			3		mA

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	15KΩ	Mute Circuit	V _{pin # 4} Shifted Downward	V _{pin # 4} Shifted Upward
R3	18KΩ	Mute Circuit	V _{pin # 4} Shifted Upward	V _{pin # 4} Shifted Downward
R4	15KΩ	Mute Circuit	V _{pin # 4} Shifted Upward	V _{pin # 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		Danger of Oscillations
C7	0.1μF	Frequency Stability		
Dz	5.1V	Mute Circuit		
Q1	BC107	Mute Circuit		

MUTE, STAND-BY TRUTH TABLE

SW1	SW2	
A	A	STAND-BY
A	B	STAND-BY
B	B	MUTE
B	A	PLAY

Figure 2: Demo Board Schematic

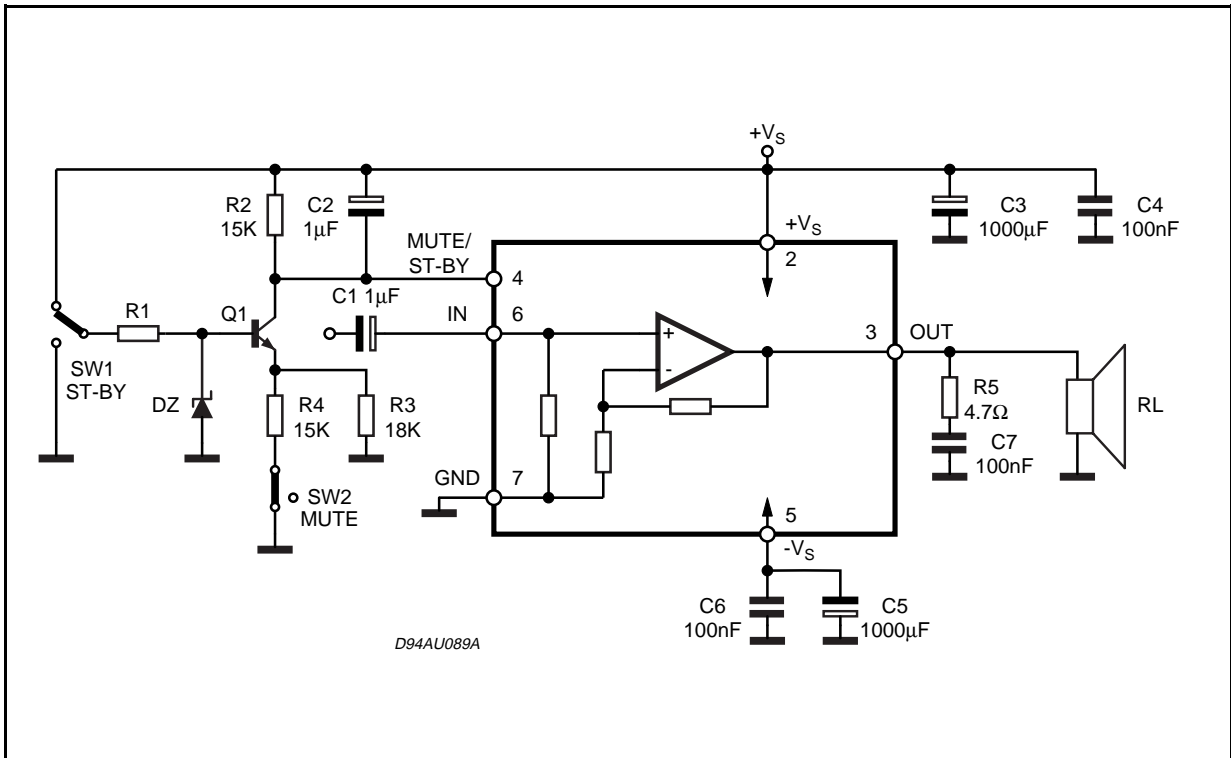


Figure 3: P.C. Board And Component Layout of the Demo Board Schematic (1:1 Scale)

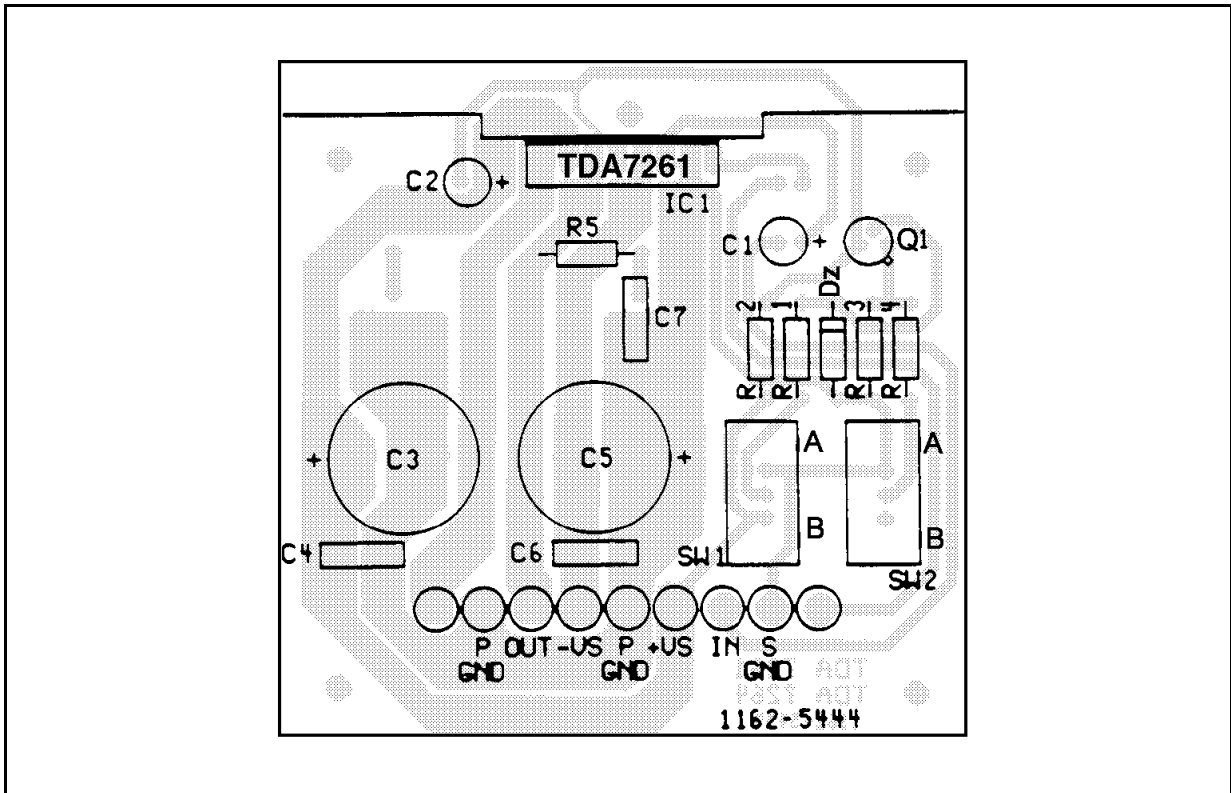


Figure 4: Quiescent Current vs. Supply Voltage

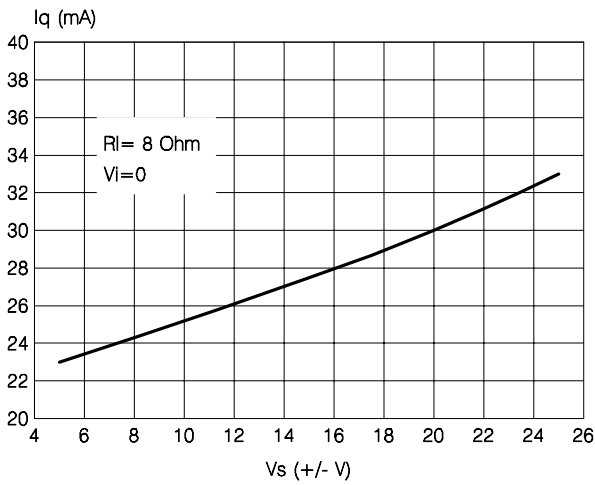


Figure 5: Output Power vs Supply Voltage

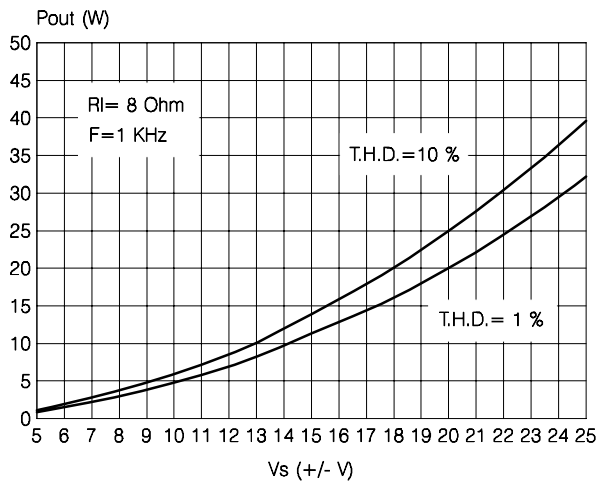


Figure 6: Distortion vs. Output Power

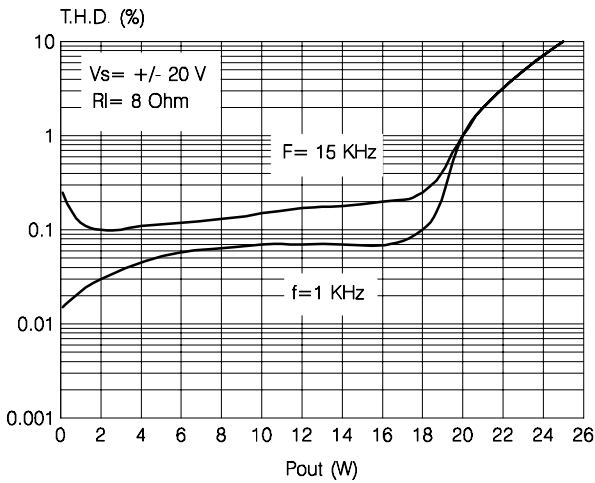


Figure 7: Supply Voltage Rejection vs. Frequency

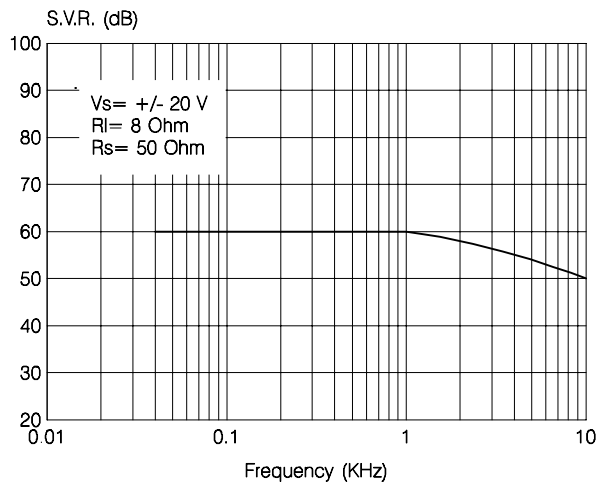


Figure 8: Attenuation & Total Quiescent Current vs. Vpin4 Voltage

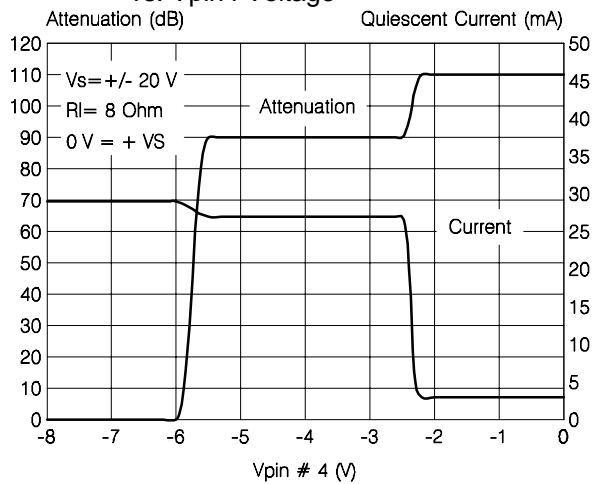
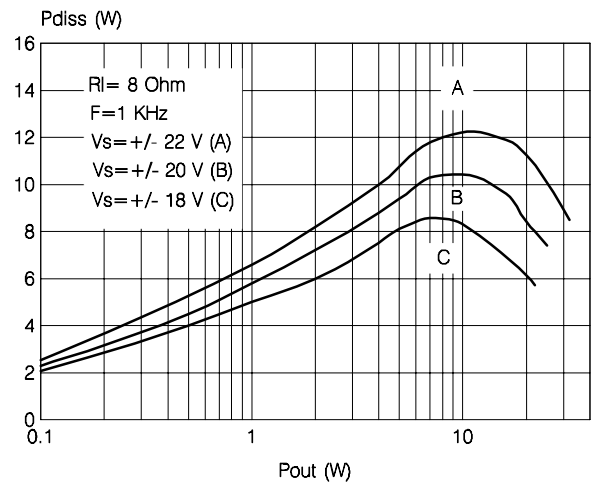


Figure 9: Power Dissipation vs. Output Power



MUTE STAND-BY FUNCTION

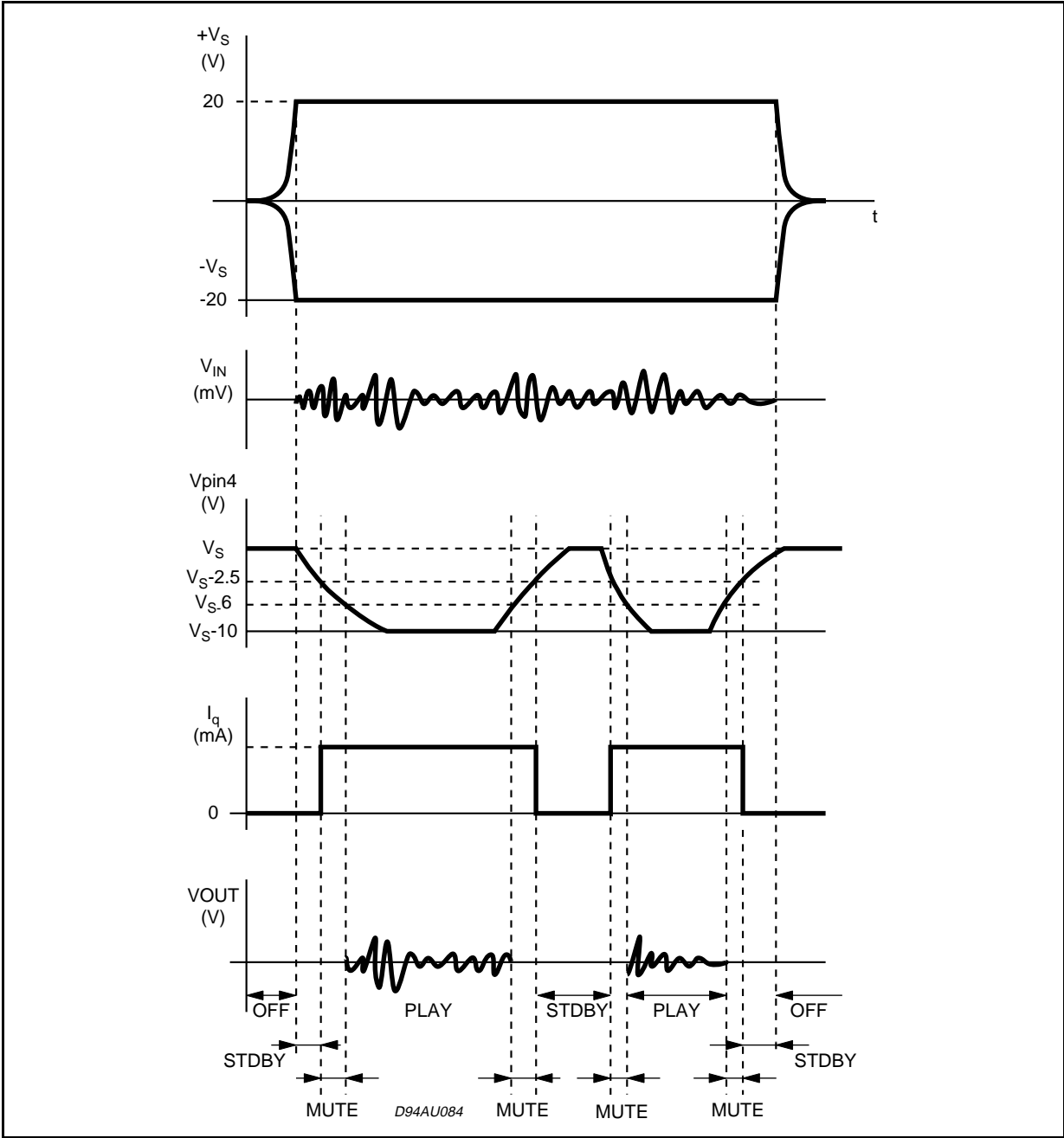
The pin 4 (MUTE/STAND-BY) controls the amplifier status by two different thresholds, referred to $+V_S$.

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

- When V_{pin4} is between $+V_S - 2.5V$ and $+V_S - 6V$ the final stage current generators are switched on and the amplifier is in mute mode.

- When V_{pin4} is lower than $+V_S - 6V$ the amplifier is play mode.

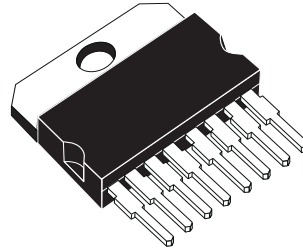
Figure 10



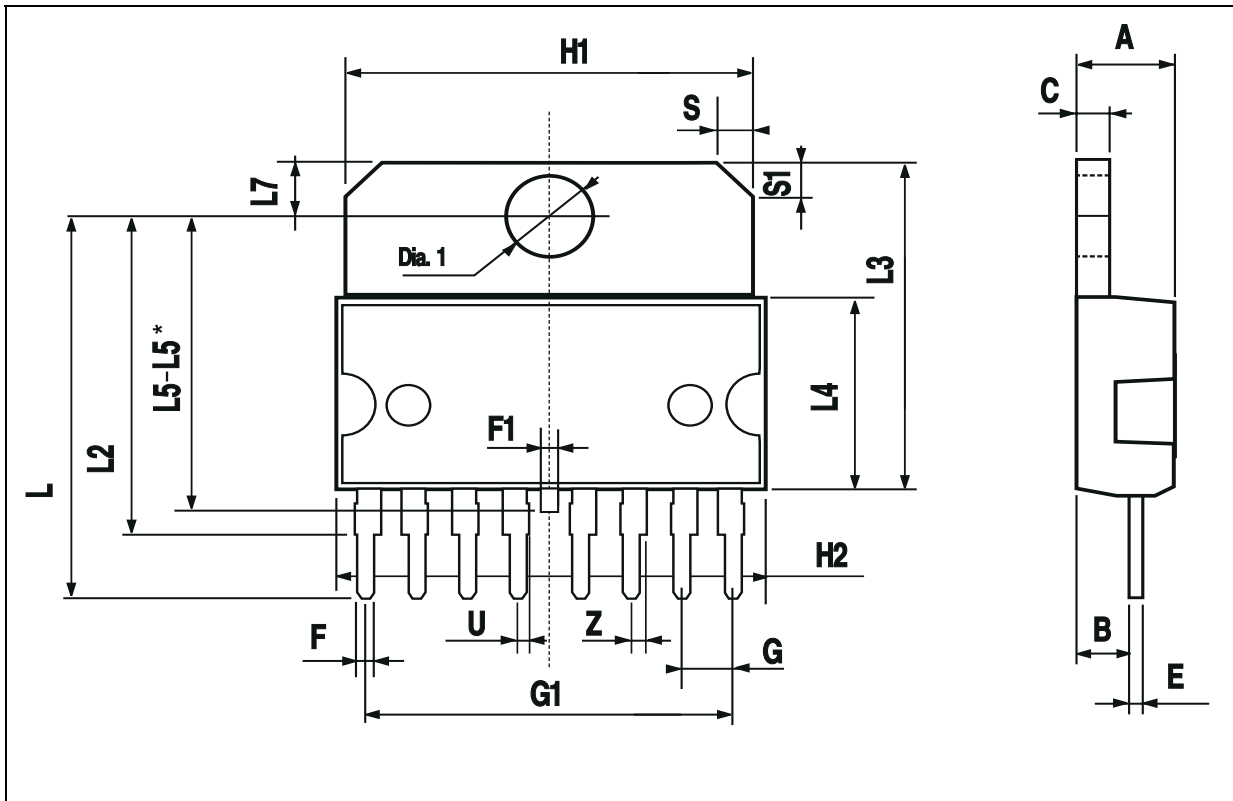
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			5			0.197
B			2.65			0.104
C			1.6			0.063
E	0.49		0.55	0.019		0.022
F	0.78		0.85	0.030		0.033
F1	0.68		0.75	0.027		0.029
G	2.40	2.54	2.68	0.094	0.10	0.105
G1	17.64	17.78	17.92	0.69	0.70	0.71
H1	19.6			0.772		
H2			20.2			0.795
L	20.35		20.65	0.80		0.81
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
L5*	15.05		15.35	0.59		0.60
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

L5 = with wedged frame std.
 L5* = with wedged frame anchor holes.

OUTLINE AND MECHANICAL DATA



Multiwatt8 (Floating)



Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.
All other names are the property of their respective owners

© 2003 STMicroelectronics - All rights reserved

STMicroelectronics GROUP OF COMPANIES

Australia – Belgium - Brazil - Canada - China – Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan -
Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States

www.st.com

