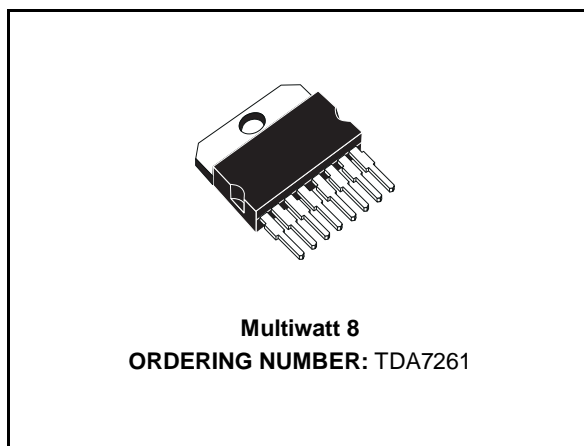


**25W MONO AMPLIFIER WITH MUTE/ST-BY**

- 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

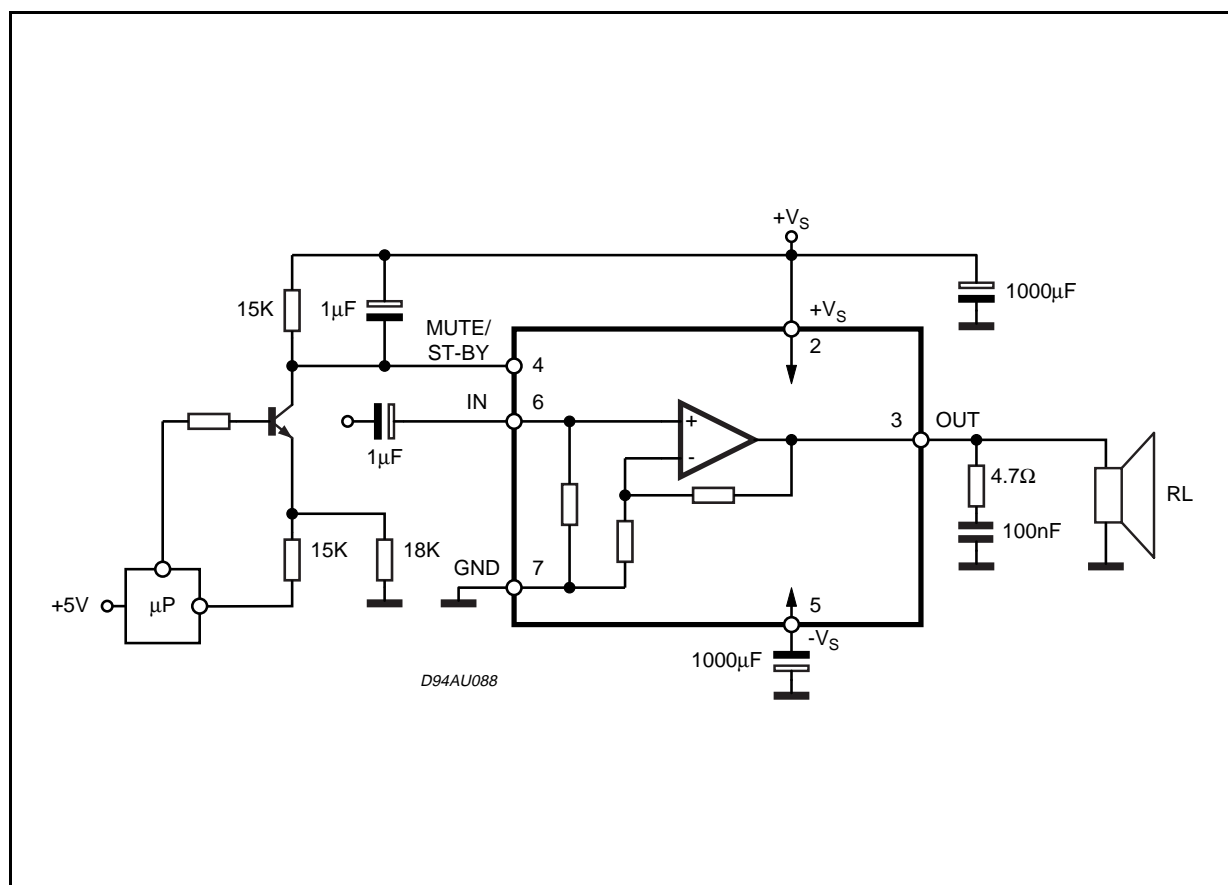


**DESCRIPTION**

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.

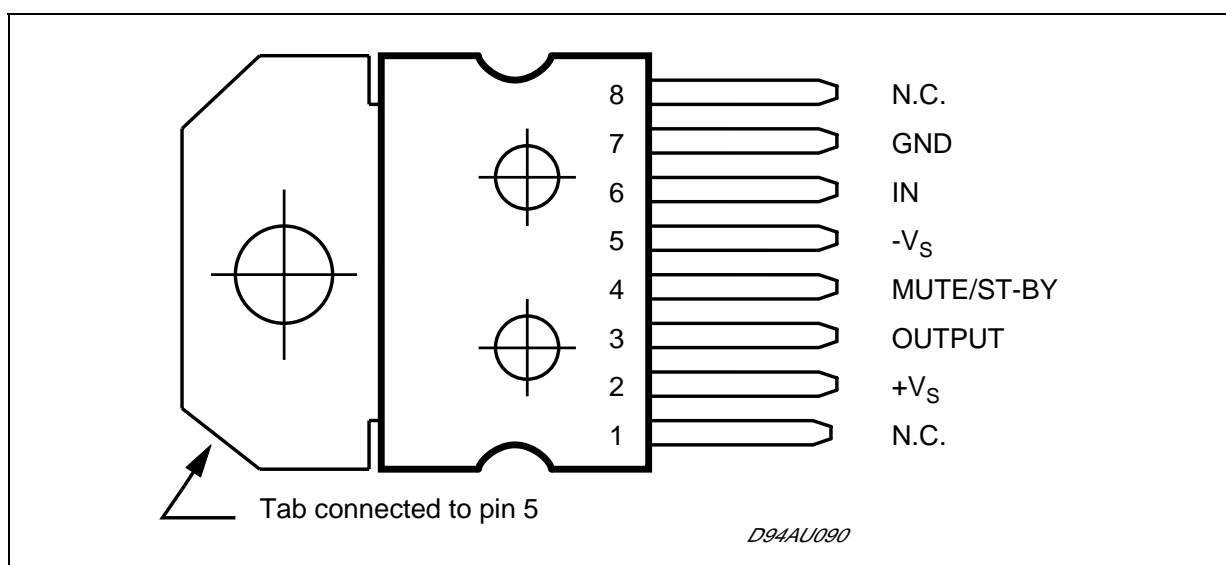
**Figure 1:** Typical Application Circuit



**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		$\pm 5$		$\pm 22.5$	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/ $\mu s$
$G_V$	Closed Loop Voltage Gain		29	30	31	dB
$\Delta G_V$	Voltage Gain Matching			0.2		dB
$e_N$	Total Input Noise	A Curve $f = 20Hz$ to $22KHz$		2.5 3.5	8	$\mu V$ $\mu V$
$R_i$	Input Resistance		15	20		K $\Omega$
SVR	Supply Voltage Rejection	$f_r = 100Hz$ ; $V_{ripple} = 0.5V_{RMS}$		60		dB
$T_j$	Thermal Shut-down Junction Temperature			145		$^\circ C$
<b>MUTE FUNCTION [ref: +Vs]</b>						
$V_{TMUTE}$	Mute / Play Threshold		-7	-6	-5	V
$A_M$	Mute Attenuation		60	90		dB
<b>STAND-BY FUNCTION [ref: +Vs]</b>						
$V_{TST-BY}$	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 <sub>pin # 4</sub> Shifted Downward	V <sub>pin # 4</sub> Shifted Upward
R3	18KΩ	Mute Circuit	V <sub>pin # 4</sub> Shifted Upward	V <sub>pin # 4</sub> Shifted Downward
R4	15KΩ	Mute Circuit	V <sub>pin # 4</sub> Shifted Upward	V <sub>pin # 4</sub> 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

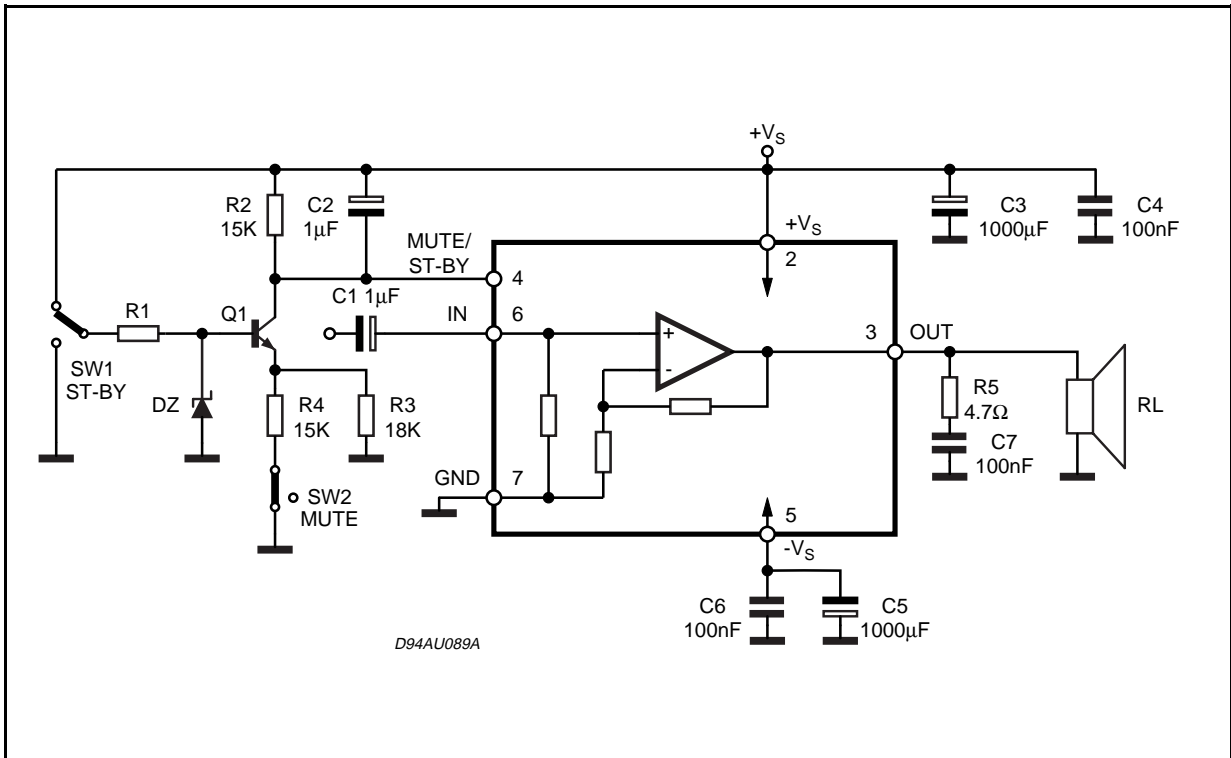


Figure 3: P.C. Board And Component Layout of the Demo Board Schematic (1:1 Scale)

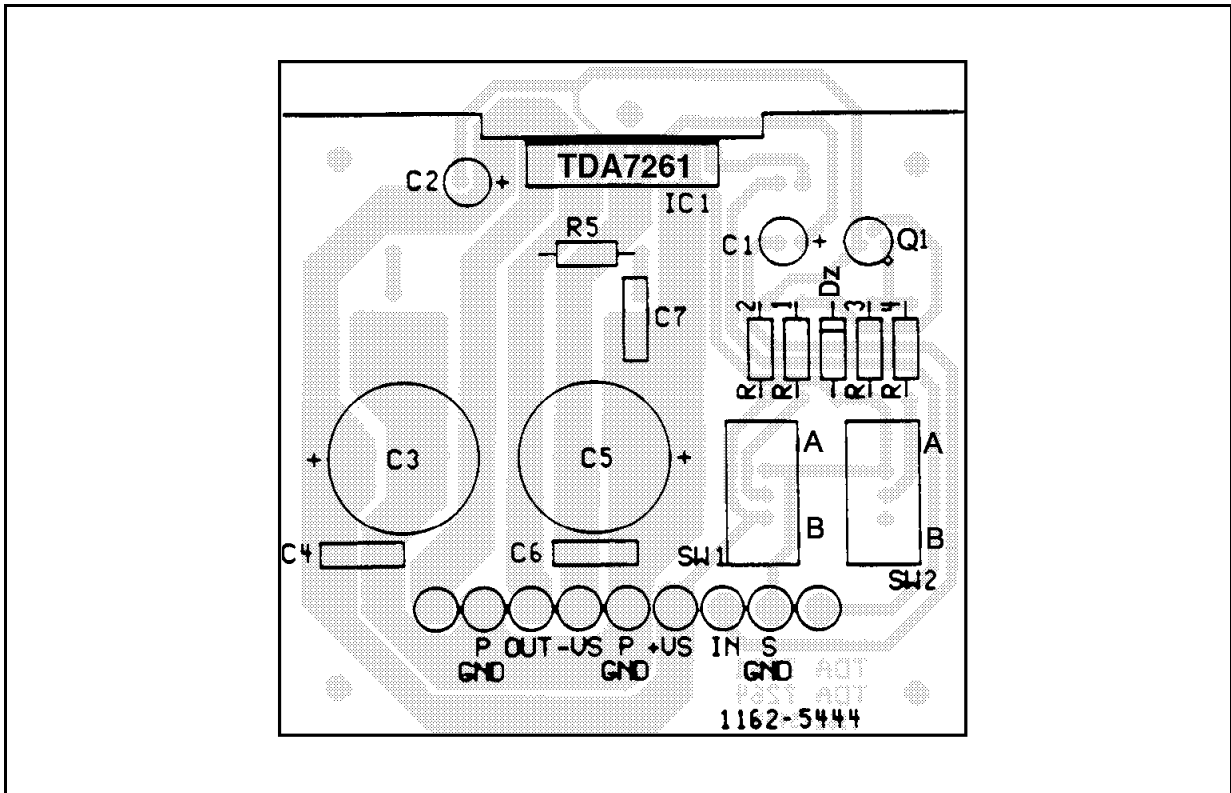


Figure 4: Quiescent Current vs. Supply Voltage

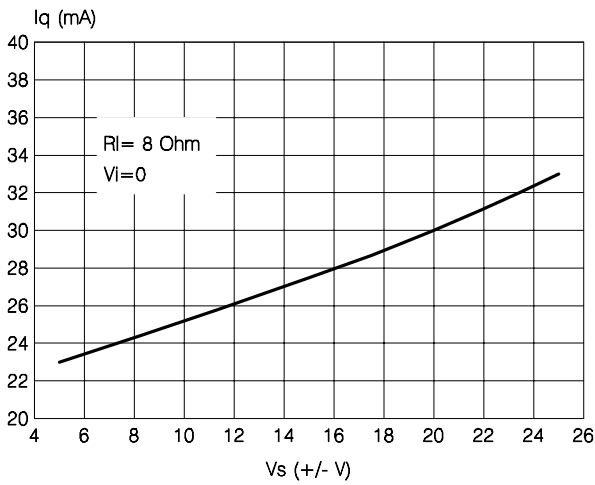


Figure 5: Output Power vs Supply Voltage

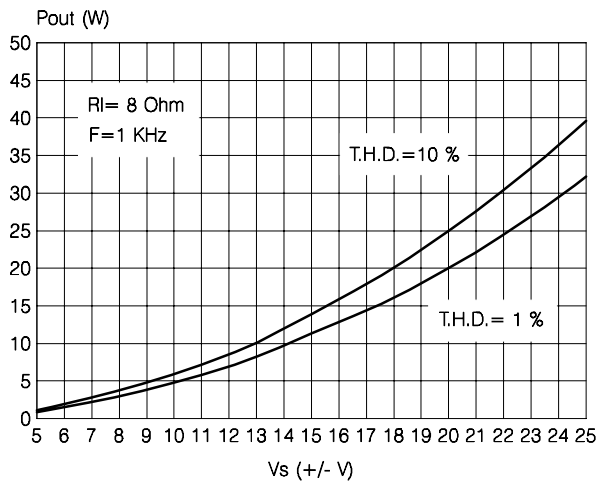


Figure 6: Distortion vs. Output Power

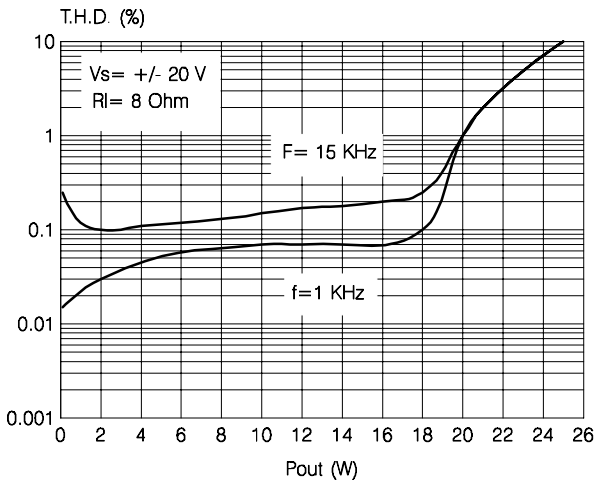


Figure 7: Supply Voltage Rejection vs. Frequency

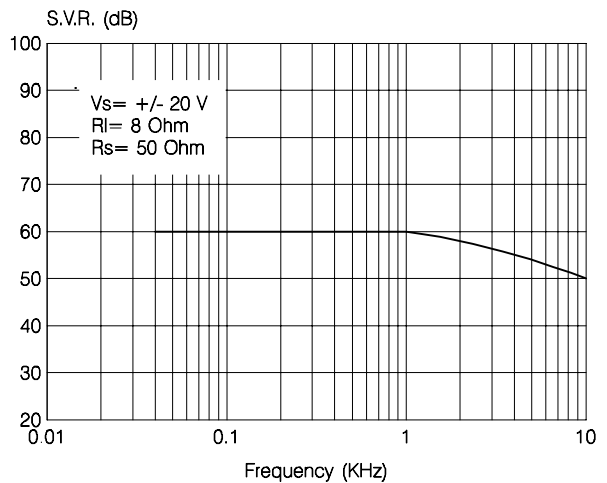


Figure 8: Attenuation & Total Quiescent Current vs.  $V_{pin4}$  Voltage

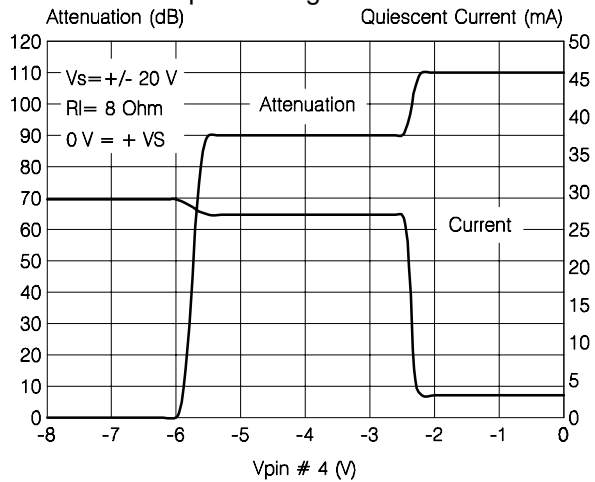
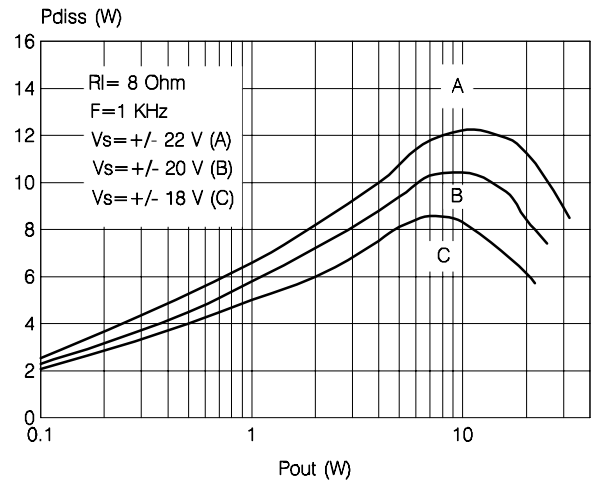


Figure 9: Power Dissipation vs. Output Power



**MUTE STAND-BY FUNCTION**

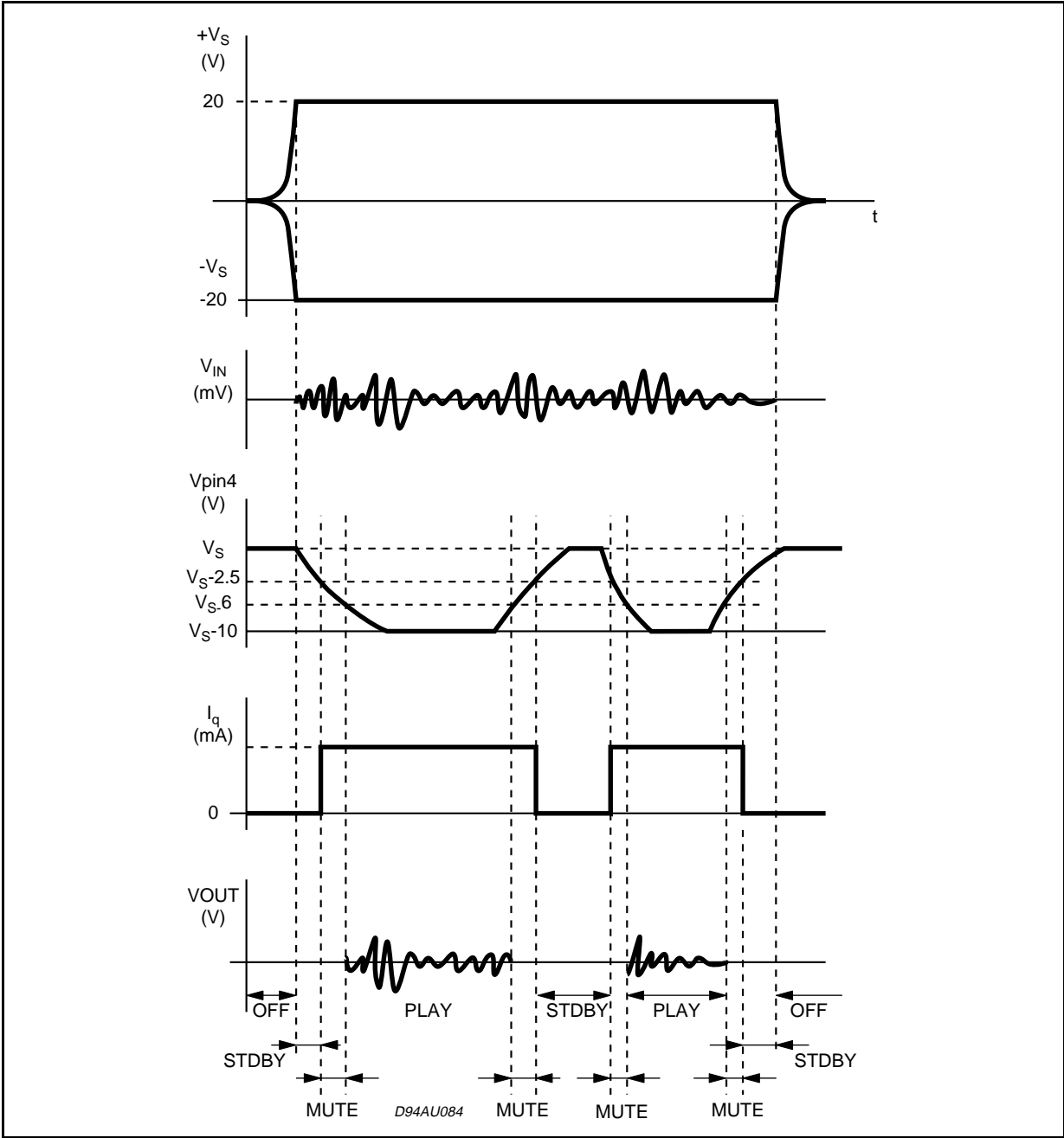
The pin 4 (MUTE/STAND-BY) controls the amplifier status by two different thresholds, referred to  $+V_S$ .

- 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.

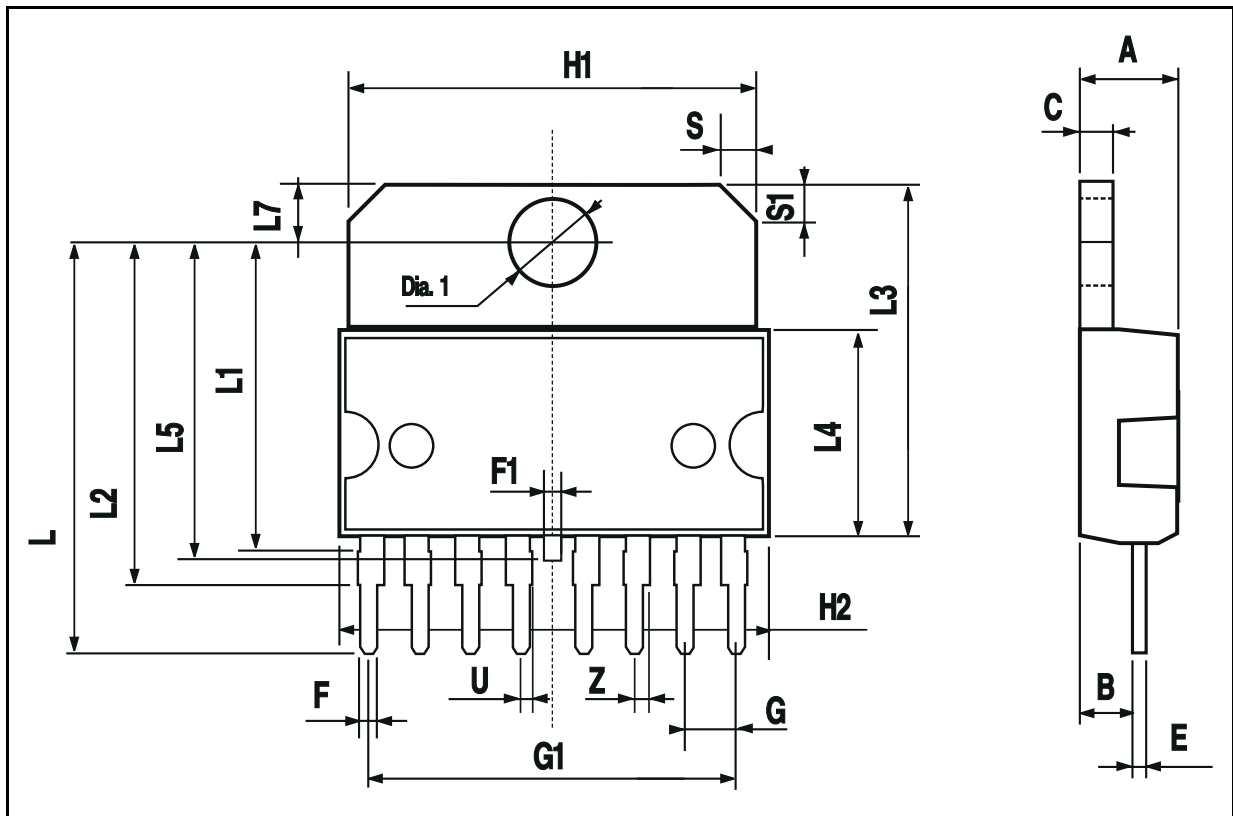
- When  $V_{pin4}$  is lower than  $+V_S - 6V$  the amplifier is play mode.

Figure 10



MULTIWATT8 PACKAGE MECHANICAL DATA

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
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





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