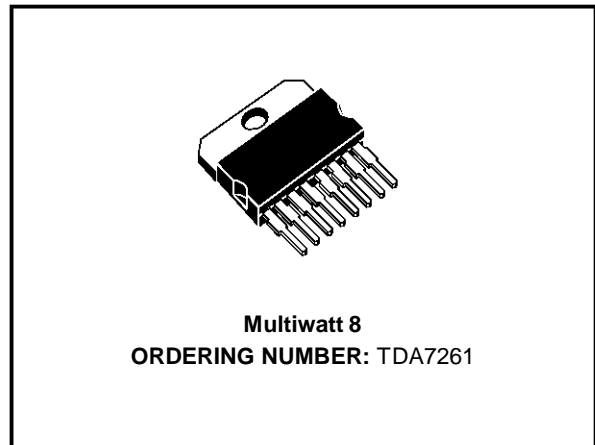


25W MONO AMPLIFIER WITH MUTE/ST-BY

- 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

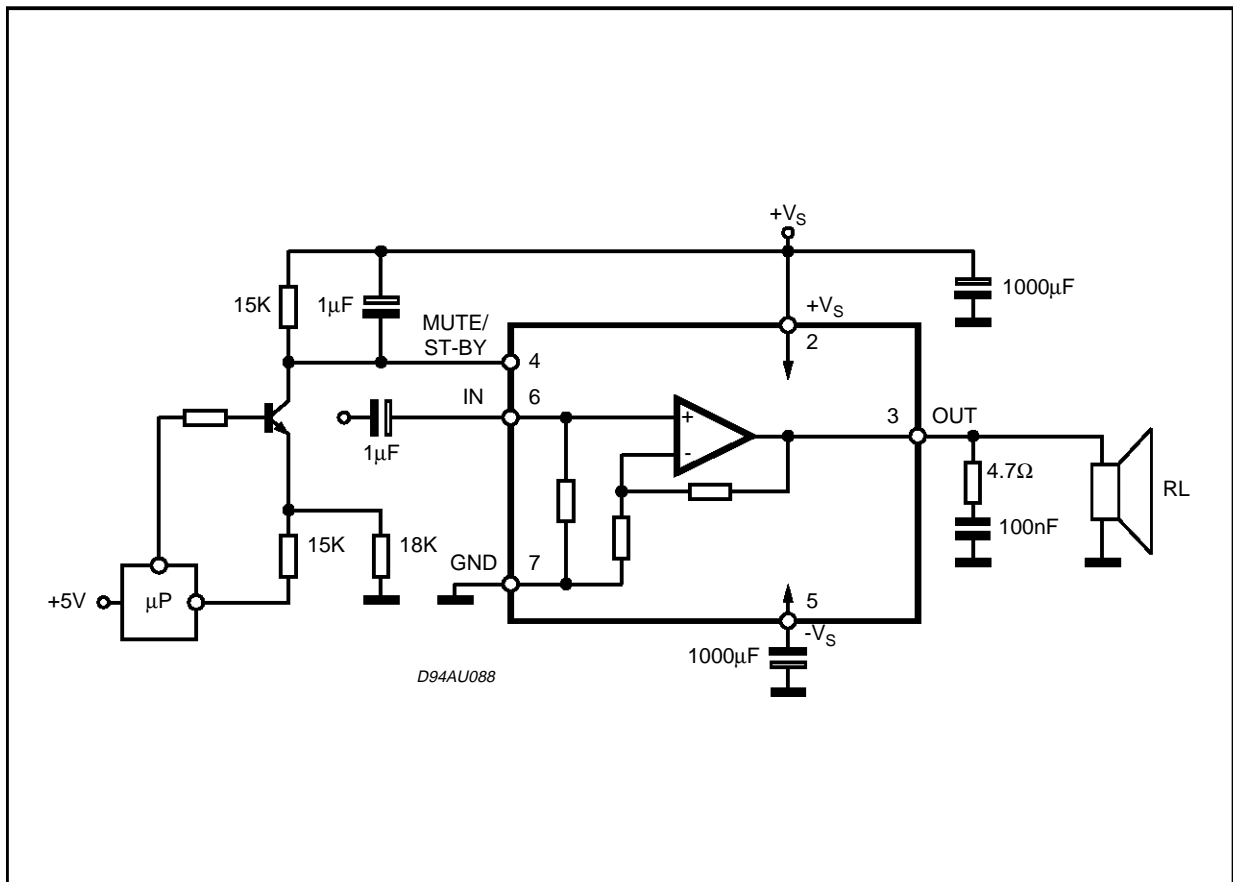


DESCRIPTION

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

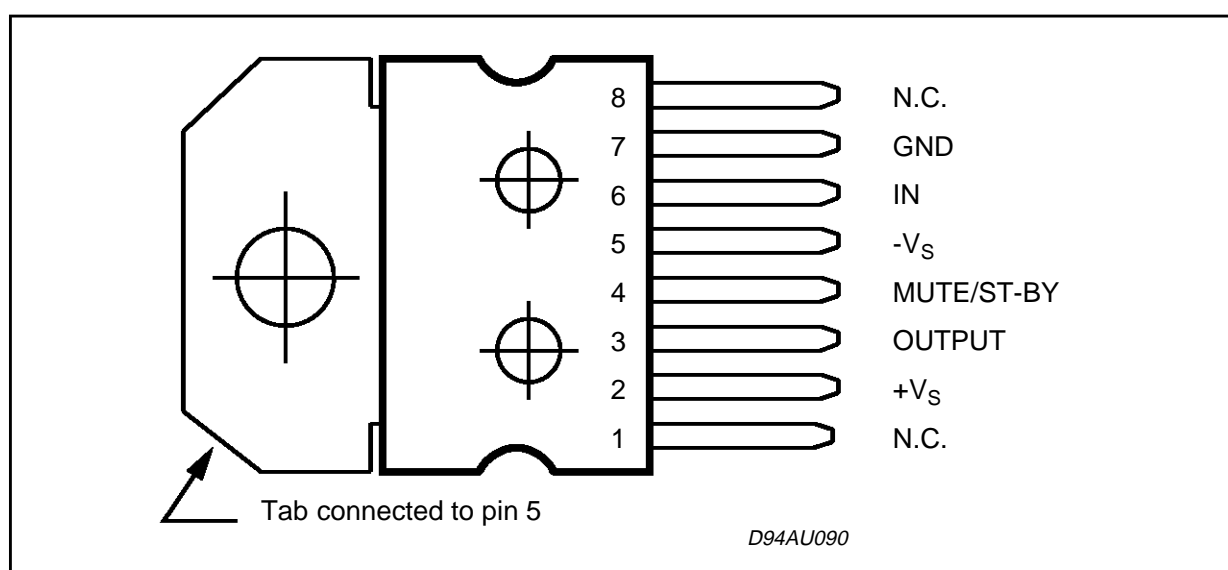


TDA7261

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.

TDA7261

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	10K Ω	Mute Circuit	Increase of Dz Biasing Current	
R2	15K Ω	Mute Circuit	V _{pin # 4} Shifted Downward	V _{pin # 4} Shifted Upward
R3	18K Ω	Mute Circuit	V _{pin # 4} Shifted Upward	V _{pin # 4} Shifted Downward
R4	15K Ω	Mute Circuit	V _{pin # 4} Shifted Upward	V _{pin # 4} Shifted Downward
R5	4.7 Ω	Frequency Stability	Danger of Oscillations	Danger of Oscillations
C1	1 μ F	Input DC Decoupling		Higher Low Frequency Cutoff
C2	1 μ F	St-By/Mute Time Constant	Larger On/Off Time	Smaller On/Of Time
C3, C5	1000 μ F	Supply Voltage Bypass		Danger of Oscillations
C4, C6	0.1 μ F	Supply Voltage Bypass		Danger of Oscillations
C7	0.1 μ F	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

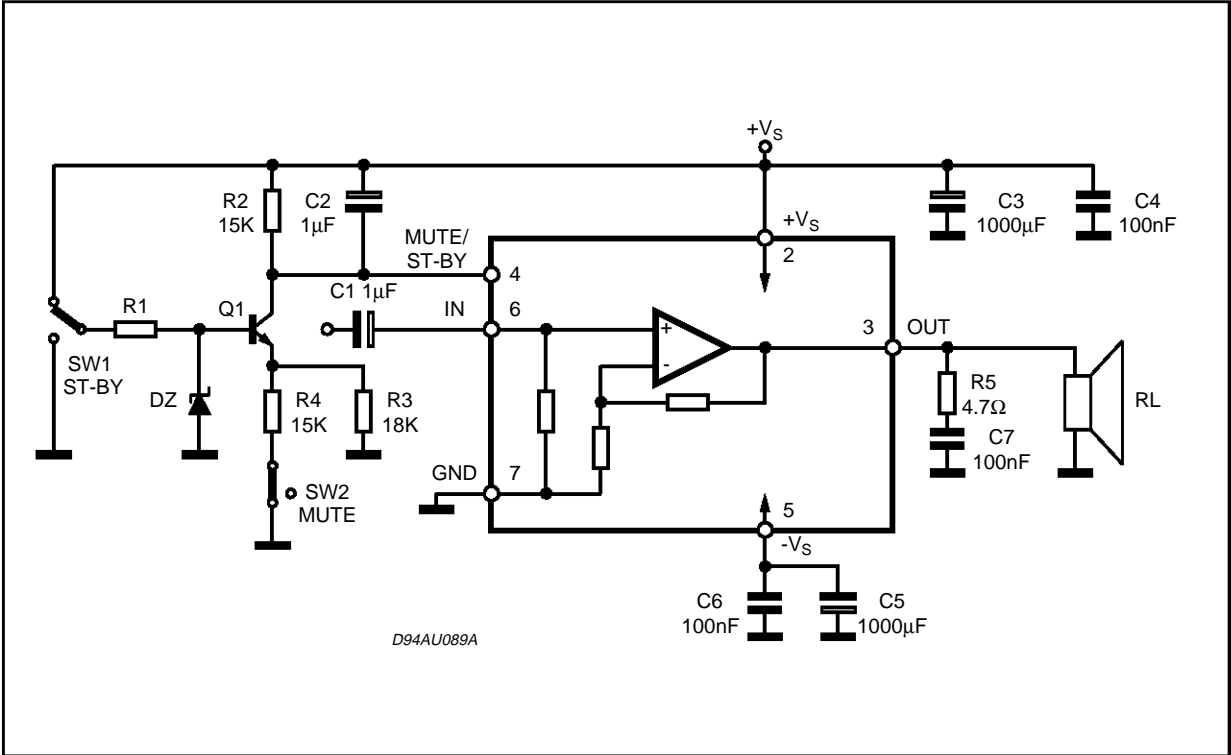


Figure 3: P.C. Board And Component Layout of the Demo Board Schematic (1:1 Scale)

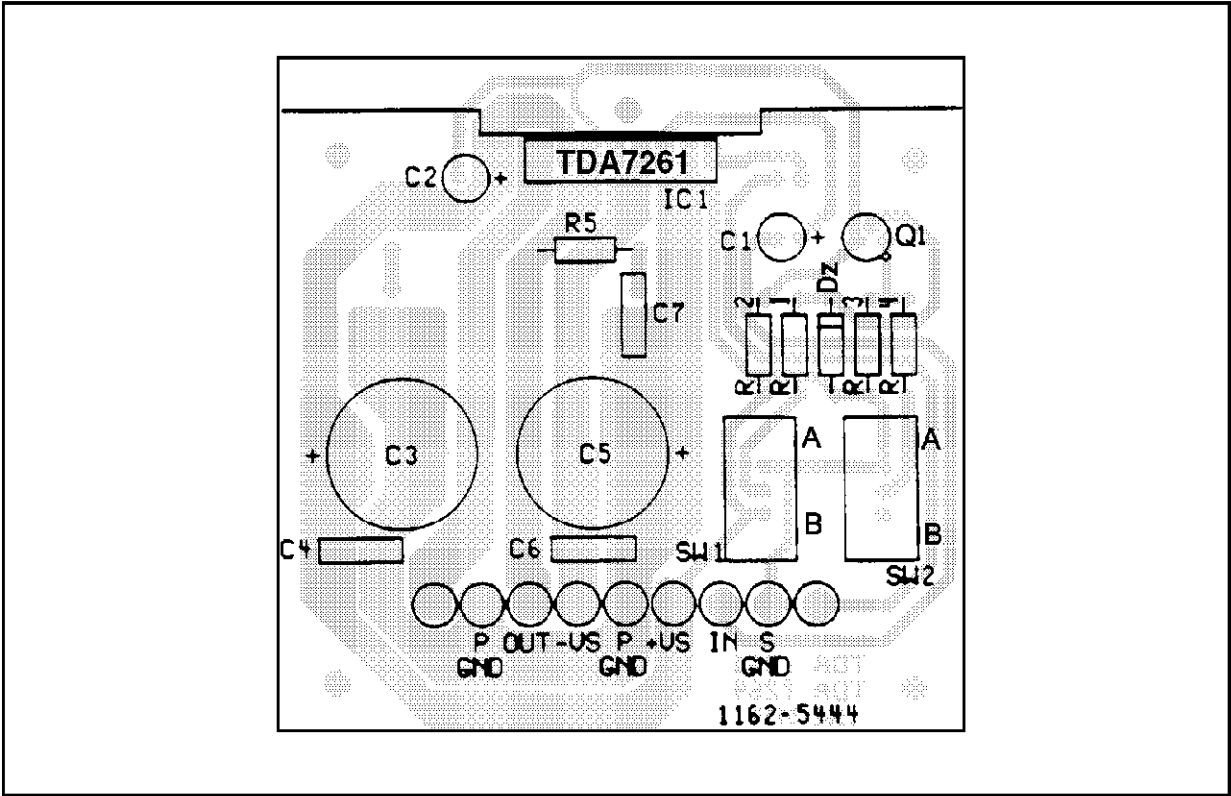


Figure 4: Quiescent Current vs. Supply Voltage

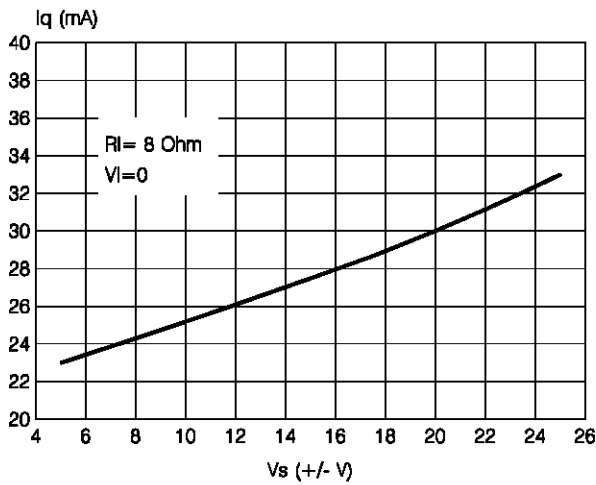


Figure 5: Output Power vs Supply Voltage

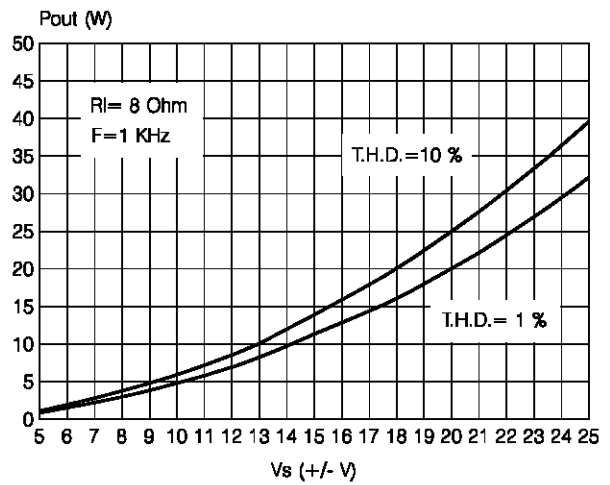


Figure 6: Distortion vs. Output Power

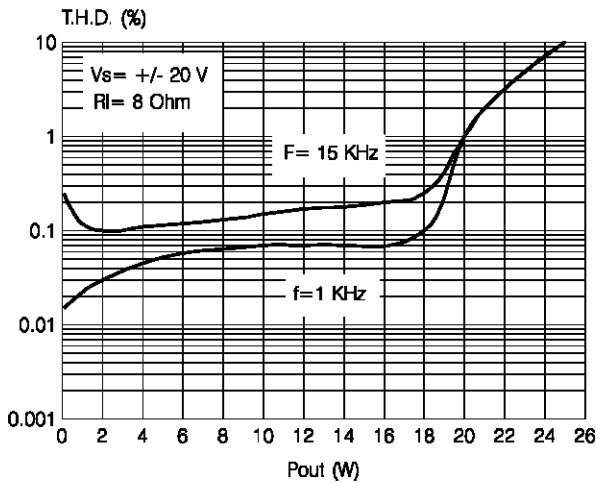


Figure 7: Supply Voltage Rejection vs. Frequency

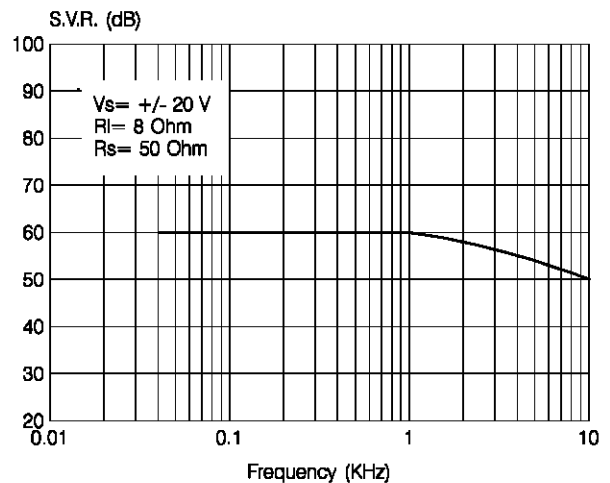


Figure 8: Attenuation & Total Quiescent Current vs. Vpin4 Voltage

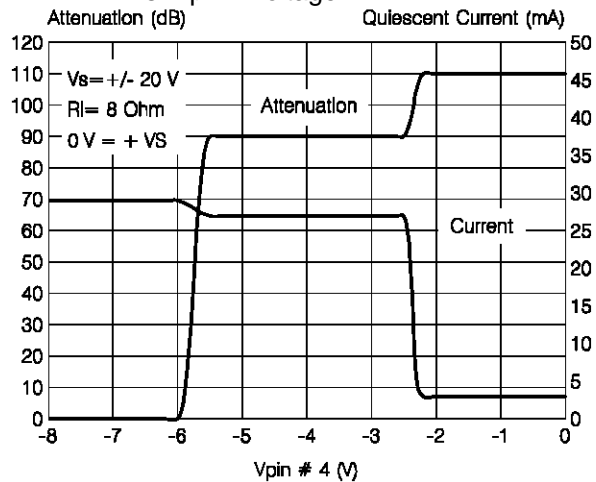
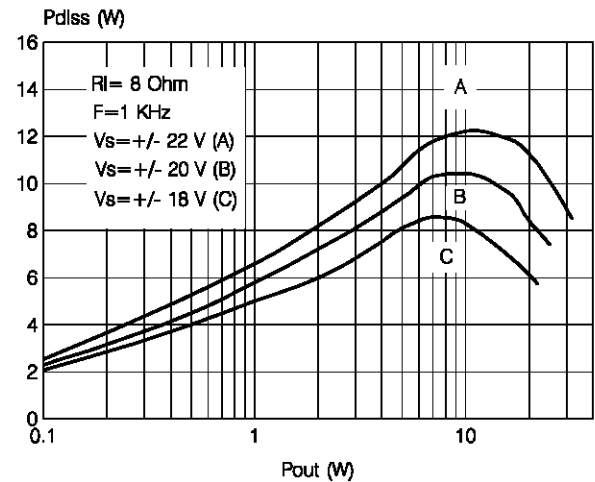


Figure 9: Power Dissipation vs. Output Power



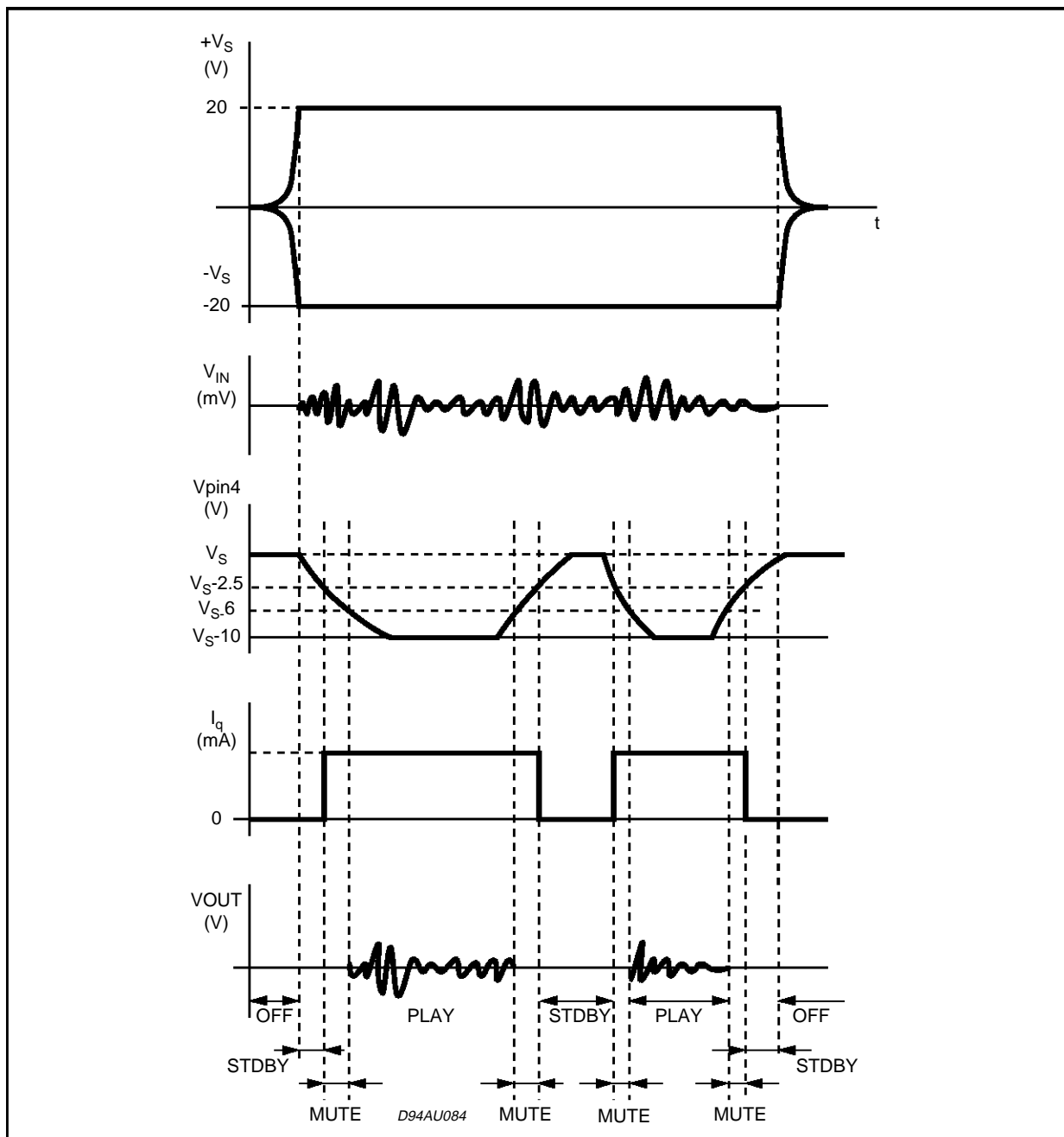
MUTE STAND-BY FUNCTION

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



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