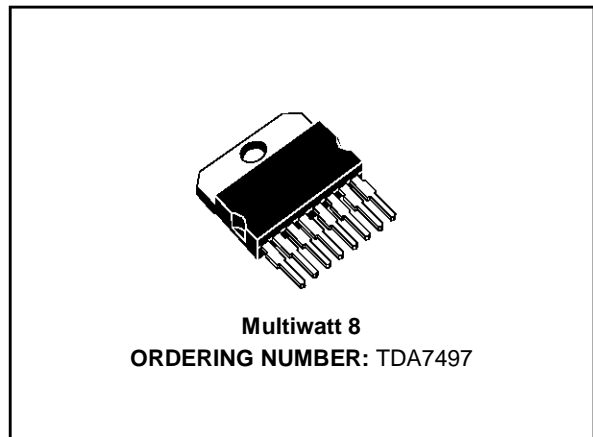


10 + 10W STEREO AMPLIFIER WITH MUTE/ST-BY

PRODUCT PREVIEW

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

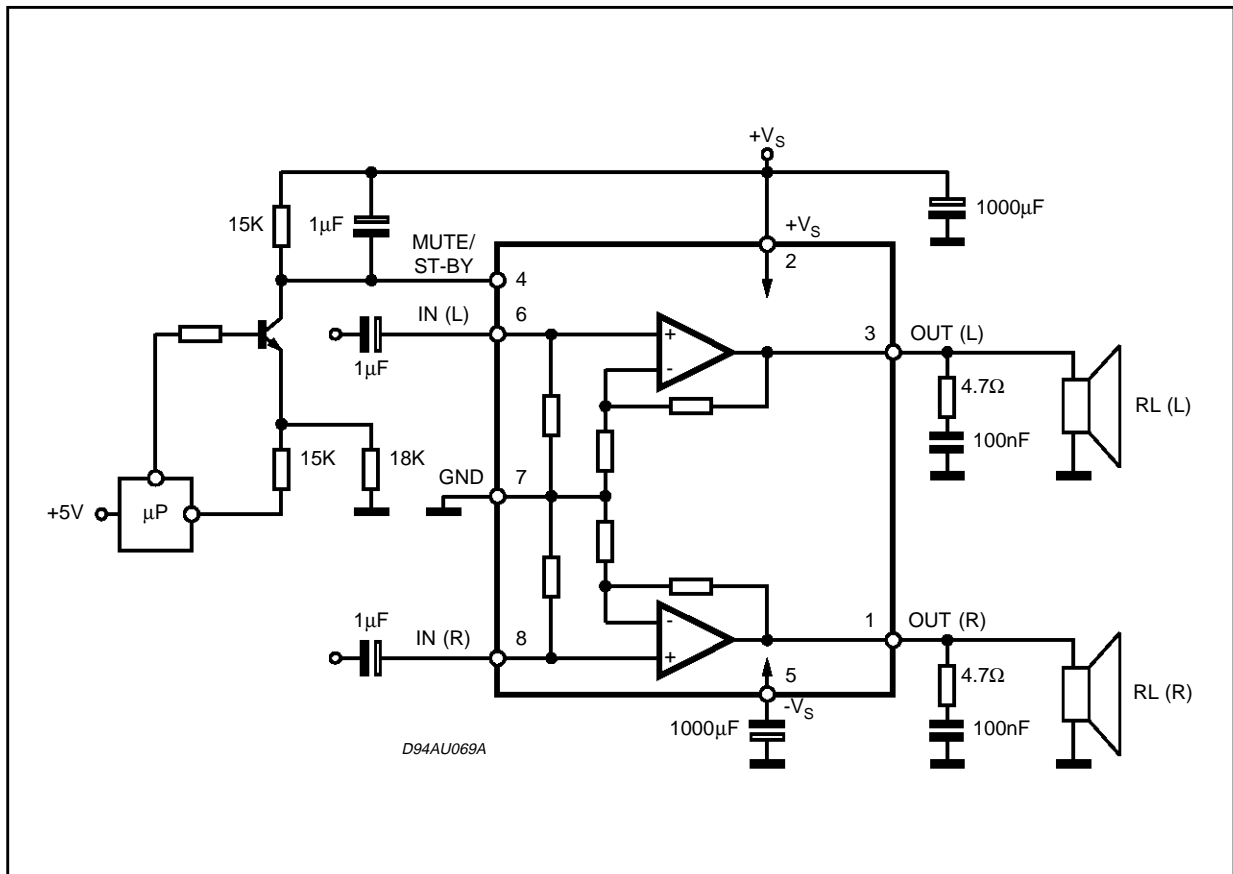


DESCRIPTION

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

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

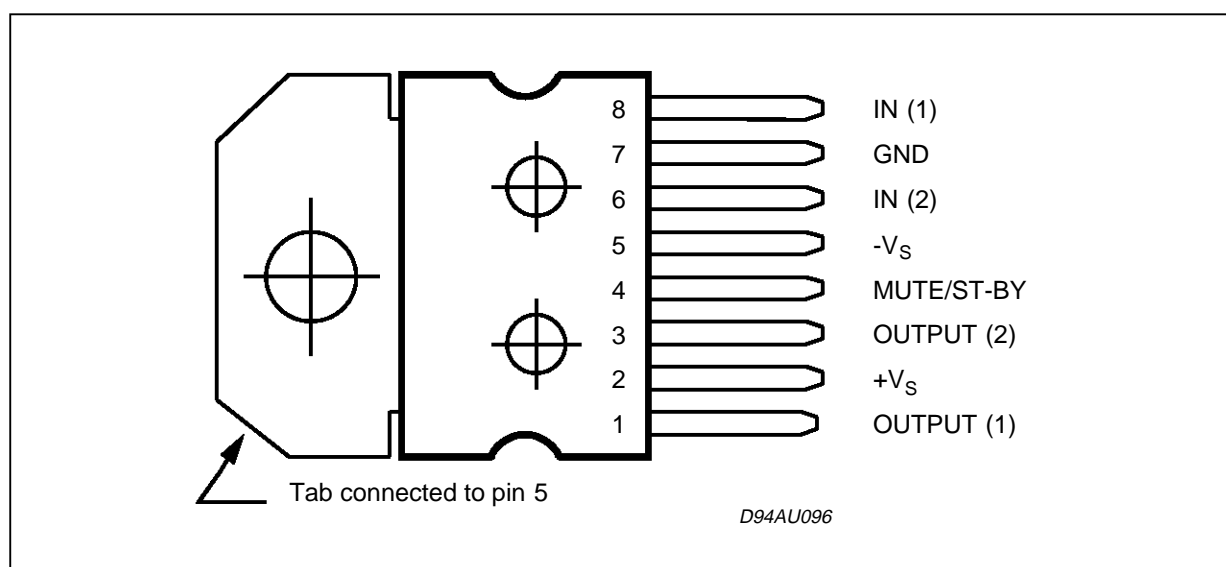
Figure 1: Typical Application Circuit



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	DC Supply Voltage	± 22	V
I_O	Output Peak Current (internally limited)	3	A
P_{tot}	Power Dissipation $T_{case} = 70^\circ\text{C}$	12	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	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS (Refer to the test circuit, $V_S \pm 14V$; $R_L = 8\Omega$; $R_S = 50\Omega$; $f = 1KHz$; $T_{amb} = 25^\circ C$, unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Range		± 5		± 20	V
I_q	Total Quiescent Current			80		mA
P_O	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	% %
C_T	Cross Talk	$f = 1KHz$ $f = 10KHz$		70 60		dB dB
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 (each channel)	$f_r = 100Hz$; $V_{ripple} = 0.5V_{RMS}$		60		dB
T_j	Thermal Shut-down Junction Temperature			145		$^\circ C$
MUTE FUNCTION [ref: +Vs]						
$V_{T_{MUTE}}$	Mute / Play Threshold		-7	-6	-5	V
A_M	Mute Attenuation		60	90		dB
STAND-BY FUNCTION [ref: +Vs]						
$V_{T_{ST-BY}}$	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

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	10K Ω	Mute Circuit	Increase of D_z 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, R6	4.7 Ω	Frequency Stability	Danger of Oscillations	Danger of Oscillations
C1, C2	1 μF	Input DC Decoupling		Higher Low Frequency Cutoff
C3	1 μF	St-By/Mute Time Constant	Larger On/Off Time	Smaller On/Off Time
C4, C6	1000 μF	Supply Voltage Bypass		Danger of Oscillations
C5, C7	0.1 μF	Supply Voltage Bypass		Danger of Oscillations
C8, C9	0.1 μF	Frequency Stability		
D_z	5.1V	Mute Circuit		

Figure 2: Application circuit

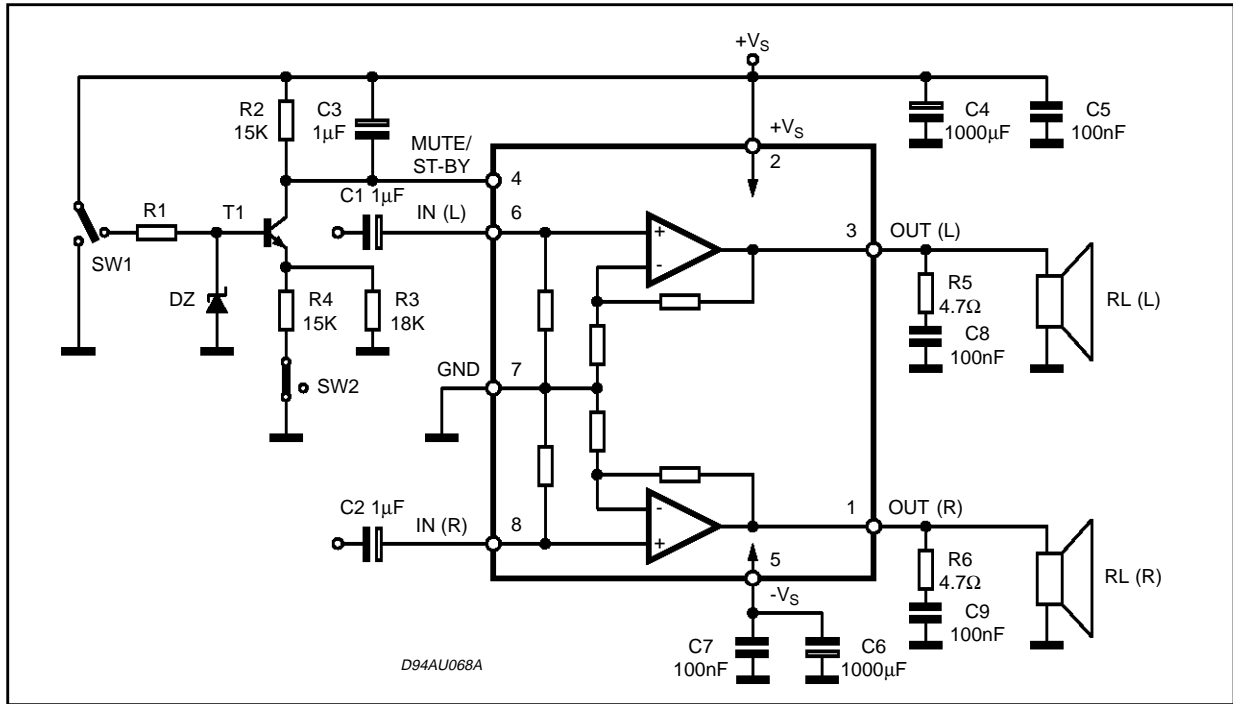
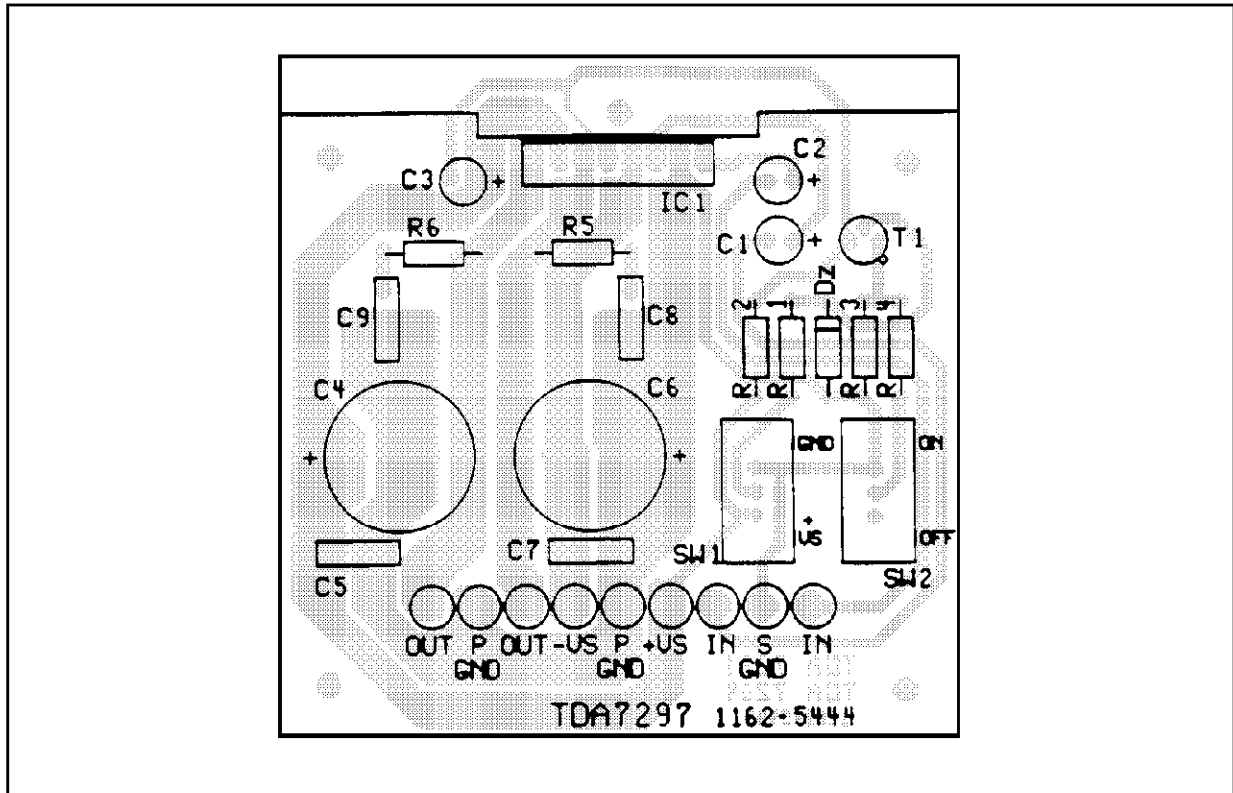


Figure 3: Demo Board Schematic



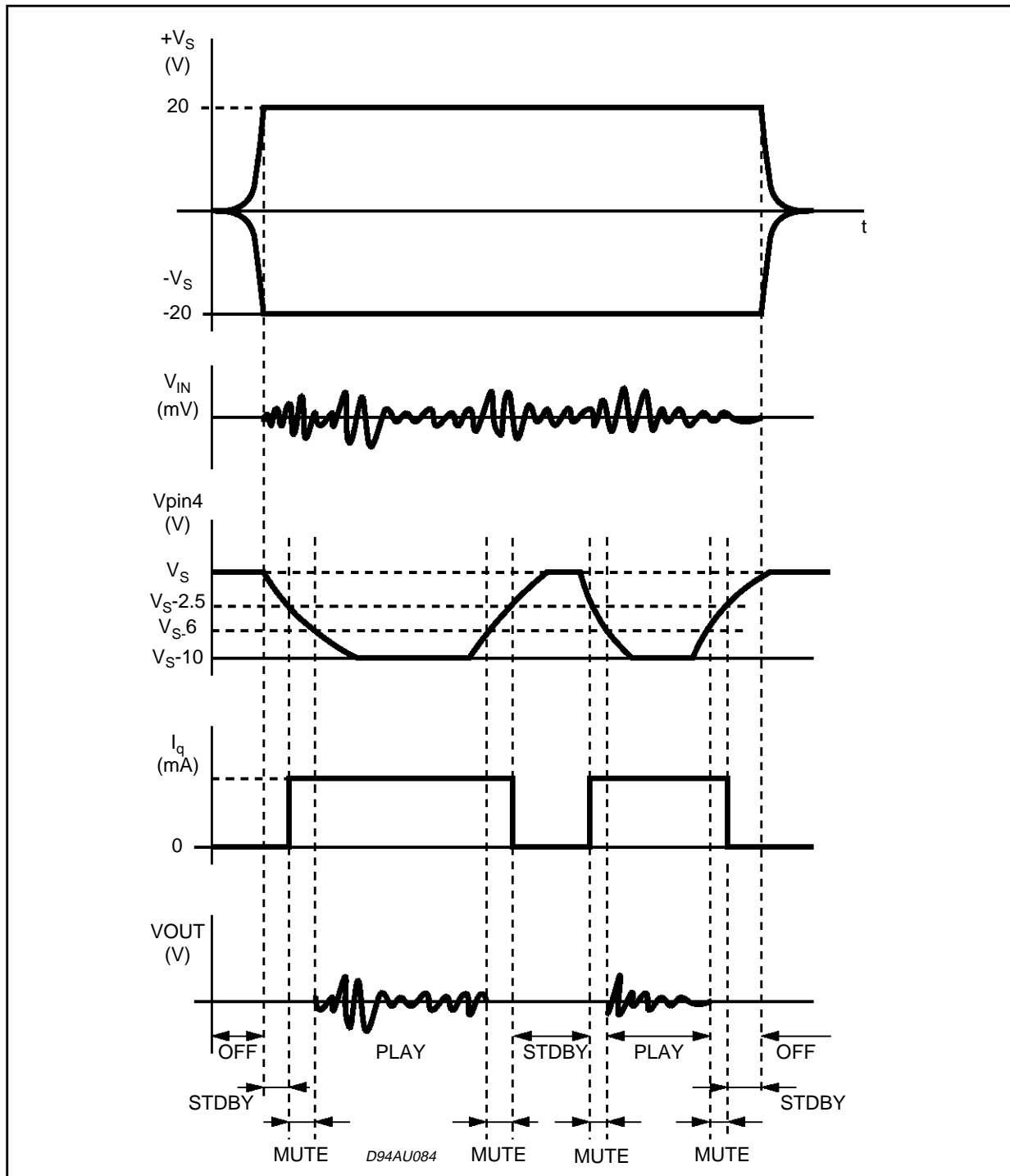
MUTE STAND-BY FUNCTION

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

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

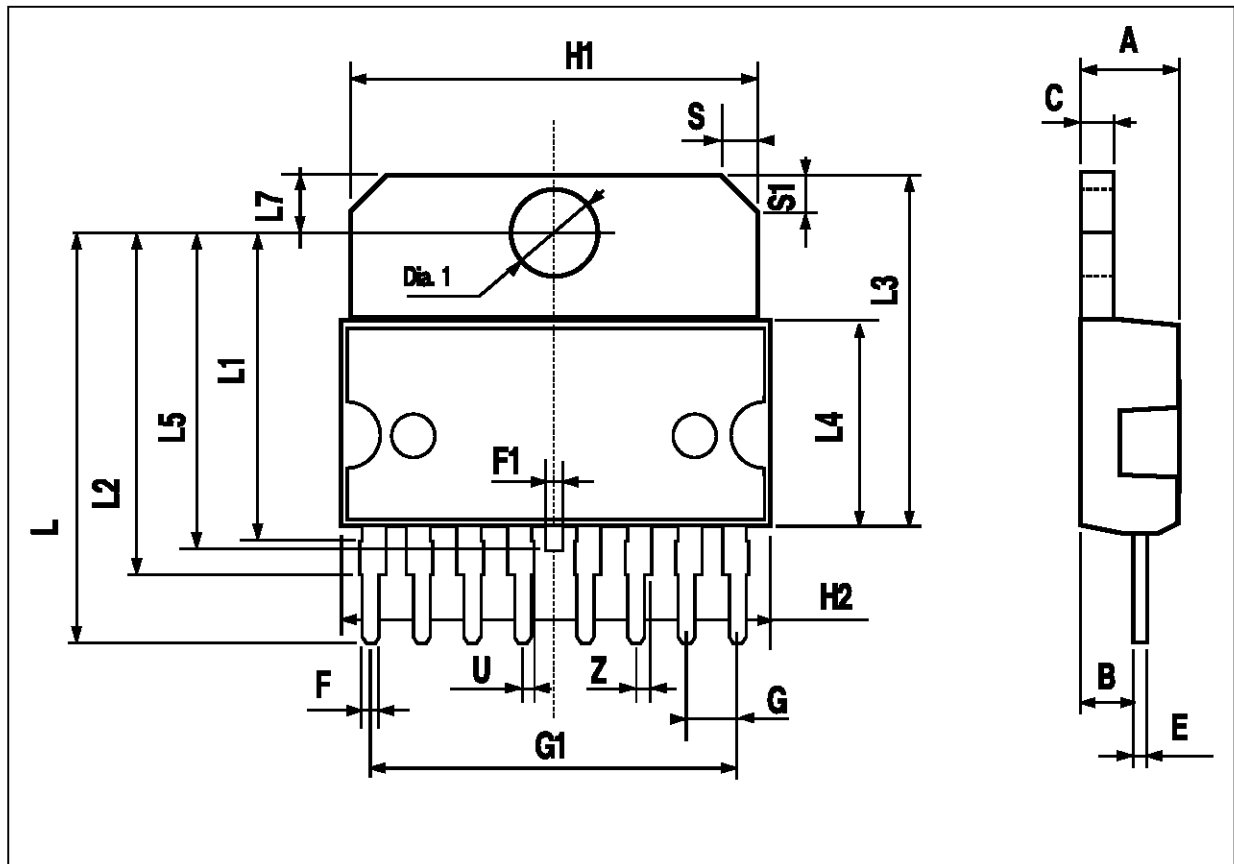
- when V_{pin4} is between $+V_s - 2.5V$ and $+V_s - 6V$ the final stage current generators are switched on and the amplifier is in mute mode
- when V_{pin4} is lower than $+V_s - 6V$ the amplifier is play mode.

Figure 4: Attenuation & Total Quiescent Current vs. V_{pin4} Voltage



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
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



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