

## 5W MONO BRIDGE AMPLIFIER

- WIDE SUPPLY VOLTAGE RANGE (3.5V-18V)
- MINIMUM EXTERNAL COMPONENTS
  - NO SVR CAPACITOR
  - NO BOOTSTRAP
  - NO BOUCHEROT CELLS
  - INTERNALLY FIXED GAIN
- STAND-BY & MUTE FUNCTIONS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

**TECHNOLOGY BI20II**



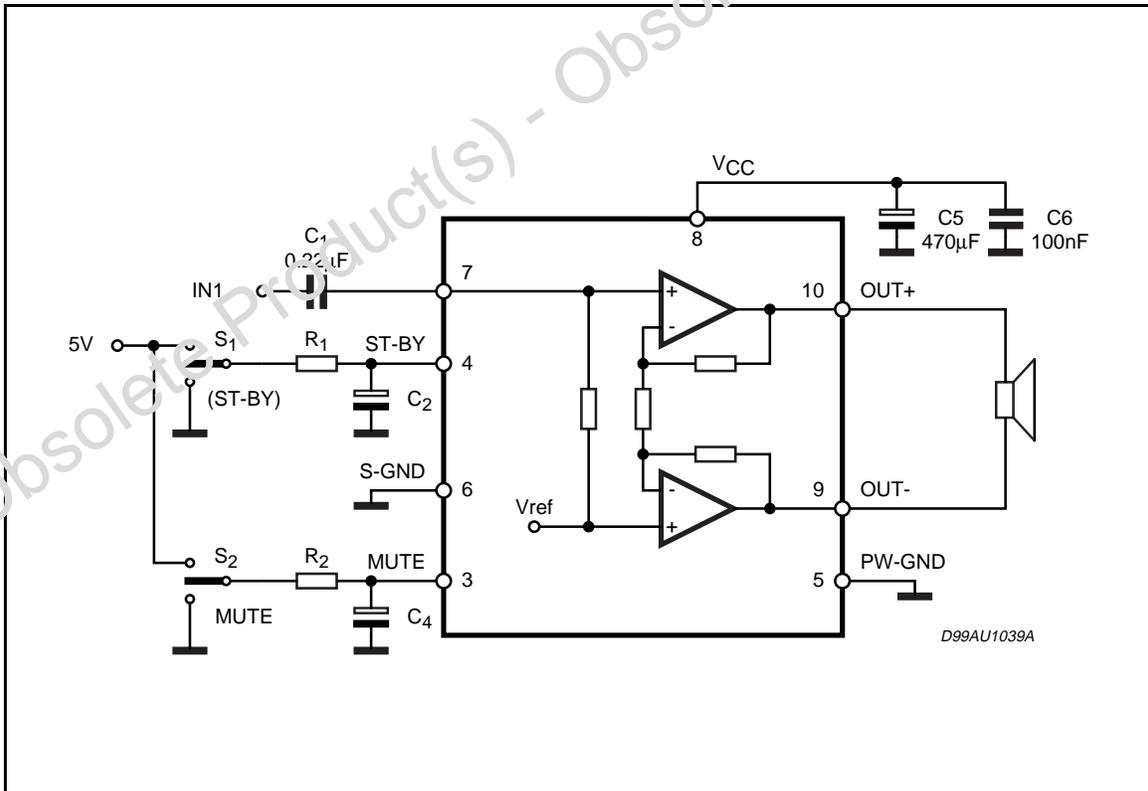
**SIP10**

**ORDERING NUMBER: TDA7266L**

### DESCRIPTION

The TDA7266L is a mono bridge amplifier specially designed for TV and Portable Radio applications.

### BLOCK AND APPLICATION DIAGRAM



# TDA7266L

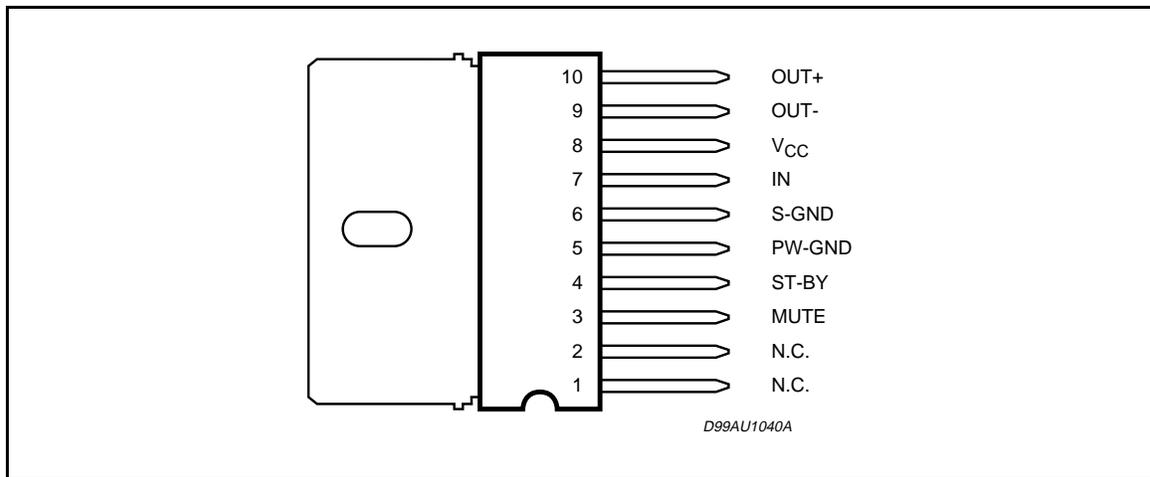
## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_S$	Supply Voltage	20	V
$I_O$	Output Peak Current (internally limited)	2	A
$P_{tot}$	Total Power Dissipation ( $T_{case} = 70^\circ\text{C}$ )	10	W
$T_{op}$	Operating Temperature	0 to 70	$^\circ\text{C}$
$T_{stg}, T_j$	Storage and Junction Temperature	-40 to +150	$^\circ\text{C}$

## THERMAL DATA

Symbol	Description	Value	Unit
$R_{th\ j-case}$	Thermal Resistance Junction to case	8	$^\circ\text{C}/\text{W}$
$R_{th\ j-amb}$	Thermal Resistance Junction to ambient	70	$^\circ\text{C}/\text{W}$

## PIN CONNECTION (Top view)



**ELECTRICAL CHARACTERISTICS** ( $V_{CC} = 11\text{V}$ ,  $R_L = 8\Omega$ ,  $f = 1\text{kHz}$ ,  $T_{amb} = 25^\circ\text{C}$  unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{CC}$	Supply Range		3.5	10	18	V
$I_q$	Total Quiescent Current			35	50	mA
$V_{OS}$	Output Offset Voltage				120	mV
$P_O$	Output Power	THD = 10%	5.5	7		W
THD	Total Harmonic Distortion	$P_O = 1\text{W}$		0.05	0.2	%
		$P_O = 0.1\text{W to } 2\text{W}$ $f = 100\text{Hz to } 15\text{kHz}$			1	%
SVR	Supply Voltage Rejection	$f = 100\text{Hz}$ VR = 0.5V	40	50		dB
$A_{MUTE}$	Mute Attenuation		60	80		dB
$T_W$	Thermal Threshold			150		$^\circ\text{C}$
$G_V$	Closed Loop Voltage Gain			32		dB
$R_i$	Input Resistance		31		33	$\text{K}\Omega$
$V_{T_{MUTE}}$	Mute Threshold	for $V_{CC} > 6.4\text{V}$ ; $V_O = -30\text{dB}$	2.3	2.9	4.1	V
		for $V_{CC} < 6.4\text{V}$ ; $V_O = -30\text{dB}$	$V_{CC}/2 - 1$	$V_{CC}/2 - 0.75$	$V_{CC}/2 - 0.5$	V

## ELECTRICAL CHARACTERISTICS (Continued)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{T_{ST-BY}}$	St-by Threshold		0.8	1.3	1.8	V
$I_{ST-BY}$	ST-BY current $V_6 = GND$				100	$\mu A$
$e_N$	Total Output Noise Voltage	A curve $f = 20\text{Hz to } 20\text{kHz}$		150		$\mu V$

## APPLICATION SUGGESTION

## STAND-BY AND MUTE FUNCTIONS

## (A) Microprocessor Application

In order to avoid annoying "Pop-Noise" during Turn-On/Off transients, it is necessary to guarantee the right St-by and mute signals sequence. It is quite simple to obtain this function using a microprocessor (Fig. 1 and 2).

At first St-by signal (from  $\mu P$ ) goes high and the voltage across the St-by terminal (Pin 7) starts to increase exponentially. The external RC network is intended to turn-on slowly the biasing circuits of the amplifier, this to avoid "POP" and "CLICK" on the outputs.

When this voltage reaches the St-by threshold level, the amplifier is switched-on and the external capacitors in series to the input terminals (C3, C5) start to charge.

It's necessary to maintain the mute signal low until the capacitors are fully charged, this to avoid that the device goes in play mode causing a loud "Pop Noise" on the speakers.

A delay of 100-200ms between St-by and mute signals is suitable for a proper operation.

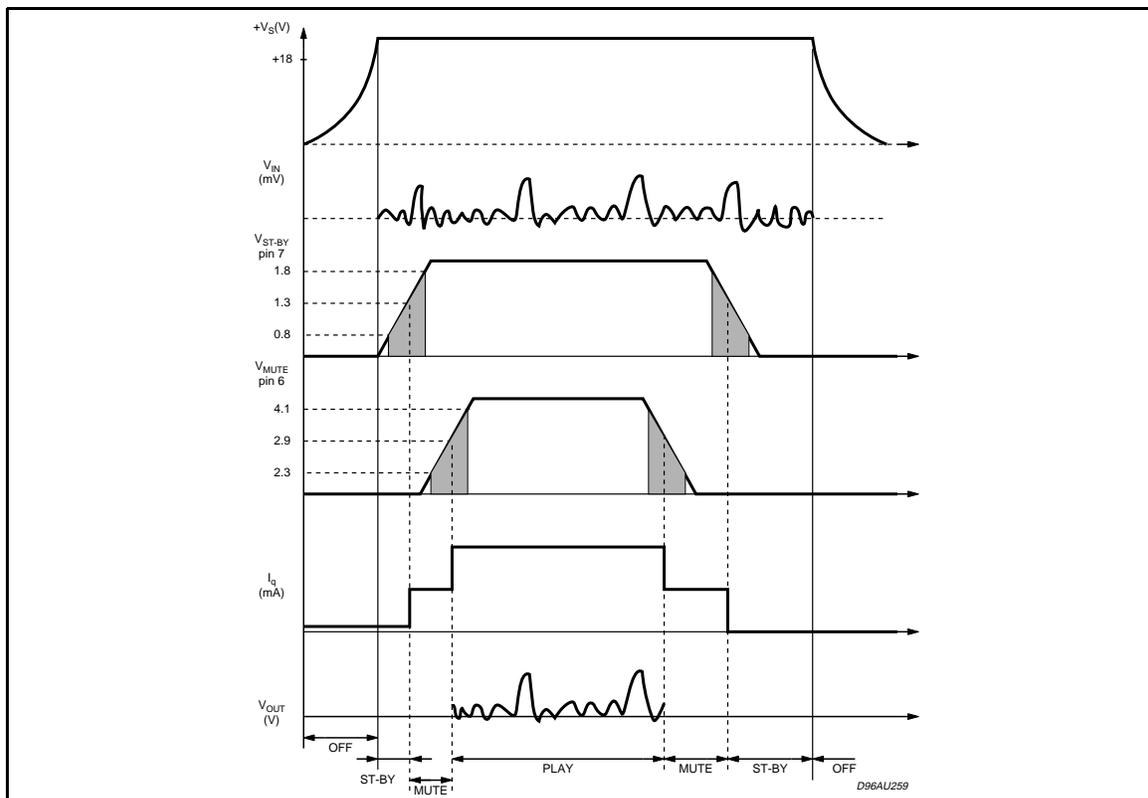
## (B) Low Cost Application

In low cost applications where the  $\mu P$  is not present, the suggested circuit is shown in fig.3.

The St-by and mute terminals are tied together and they are connected to the supply line via an external voltage divider.

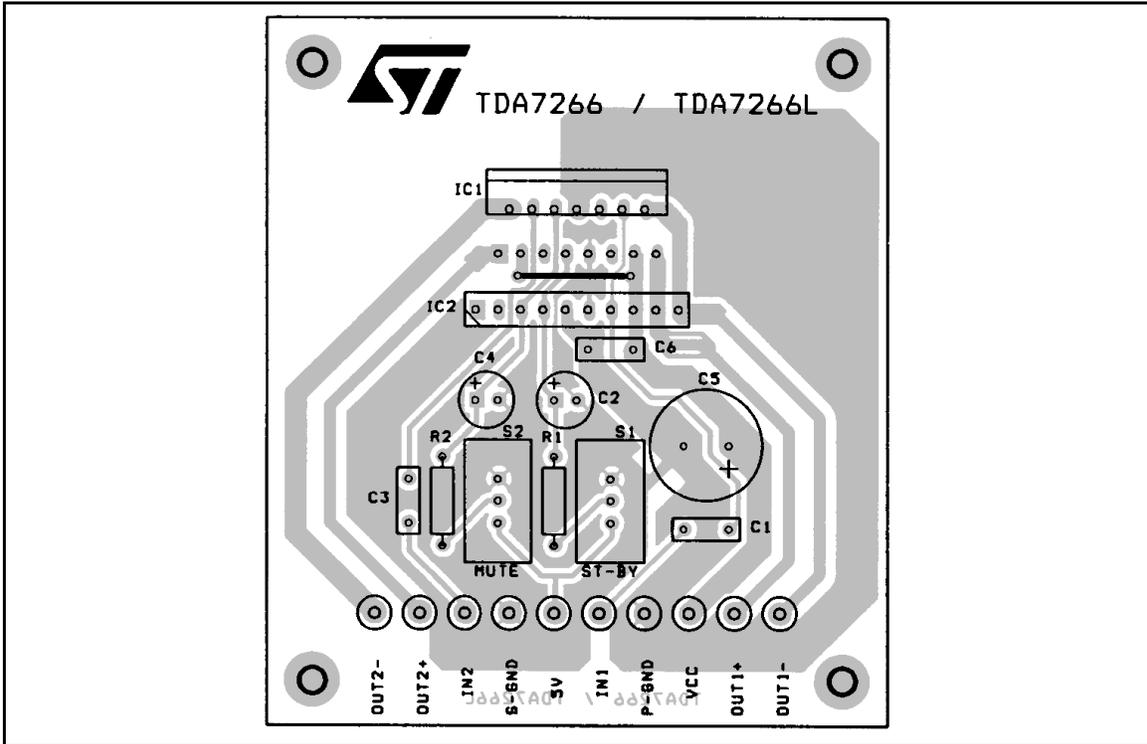
The device is switched-on/off from the supply line and the external capacitor C4 is intended to delay the St-by and mute threshold exceeding, avoiding "Popping" problems.

Figure 1: Microprocessor Driving Signals.



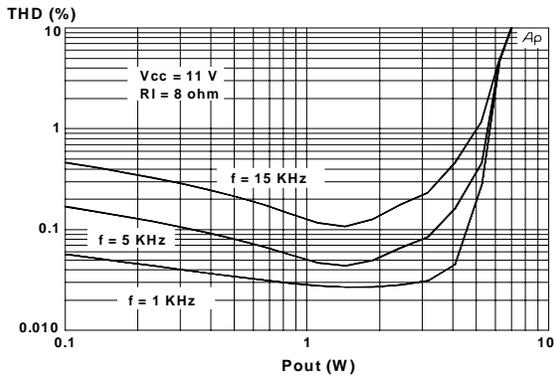
# TDA7266L

**Figure 2:** PCB and Component Layout of the Application Diagram

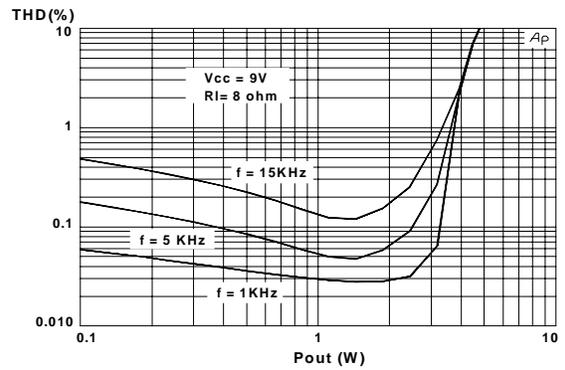


The PC board layout offers compatibility to TDA7266S, TDA7266, TDA7297, (the BTL power amplifiers in Multiwatt 15 package).

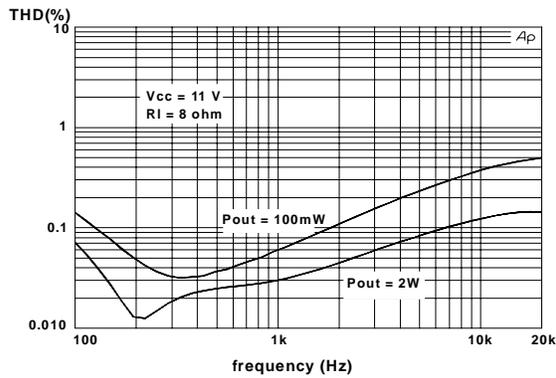
**Figure 3:** Distortion vs Output Power



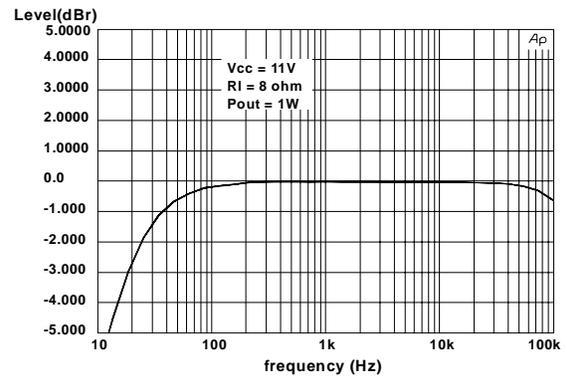
**Figure 4:** Distortion vs Output Power



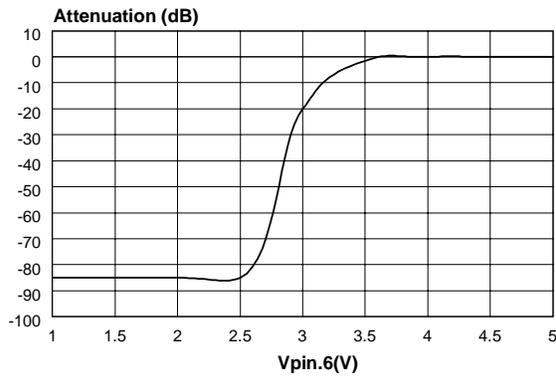
**Figure 5: Distortion vs Frequency**



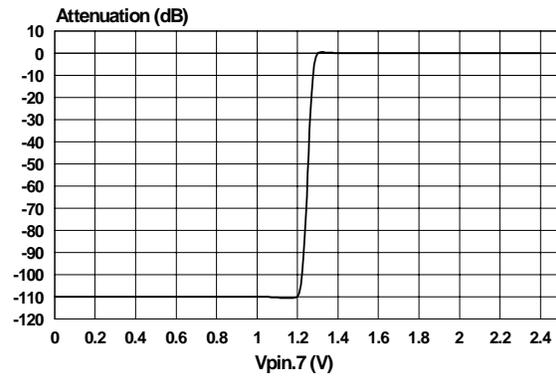
**Figure 6: Gain vs Frequency**



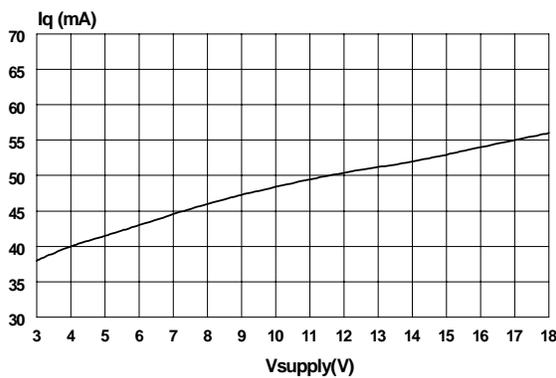
**Figure 7: Mute Attenuation vs. V pin.6**



**Figure 8: Stand-By Attenuation vs Vpin.7**



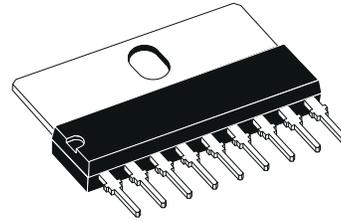
**Figure 9: Quiescent Current vs. Supply Voltage**



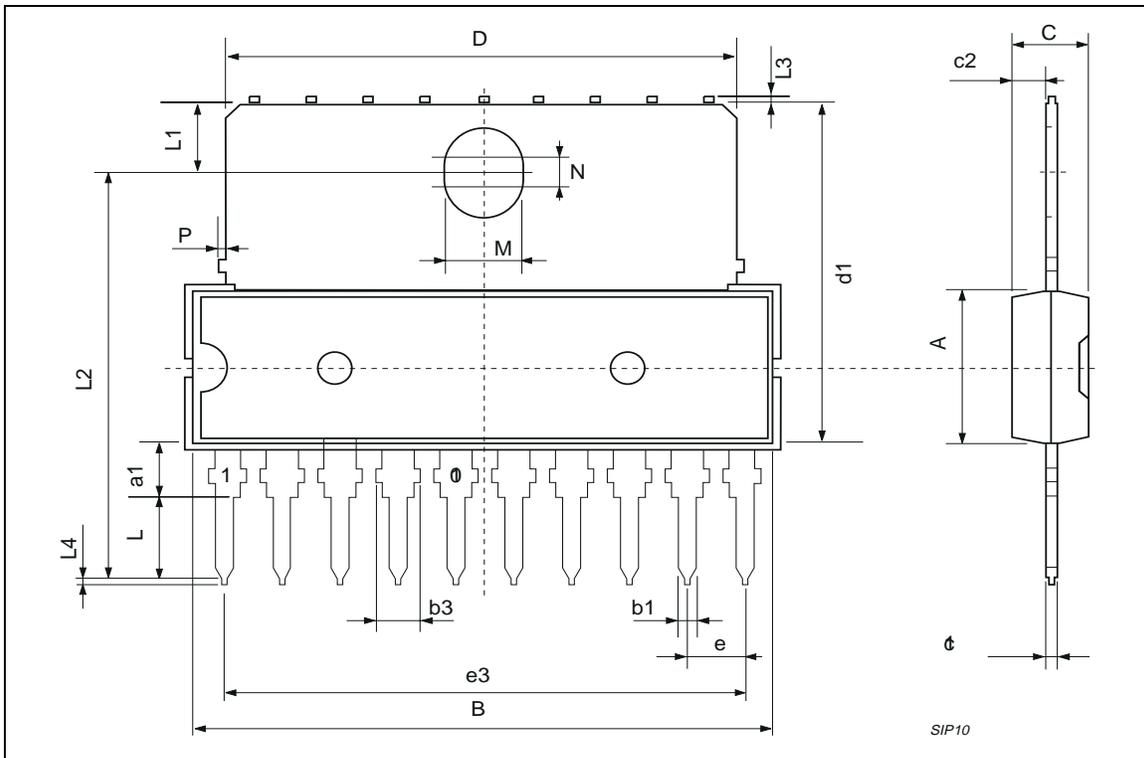
# TDA7266L

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			7.1			0.280
a1	2.7		3	0.106		0.118
B			24.8			0.976
b1		0.5			0.020	
b3	0.85		1.6	0.033		0.063
C		3.3			0.130	
c1		0.43			0.017	
c2		1.32			0.052	
D			23.7			0.933
d1		14.5			0.571	
e		2.54			0.100	
e3		22.86			0.900	
L	3.1			0.122		
L1		3			0.118	
L2		17.6			0.693	
L3			0.25		0.010	
L4			0.254		0.010	
M		3.2			0.126	
N		1			0.039	
P			0.15		0.006	

## OUTLINE AND MECHANICAL DATA



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