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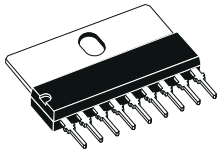
TDA7266L

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



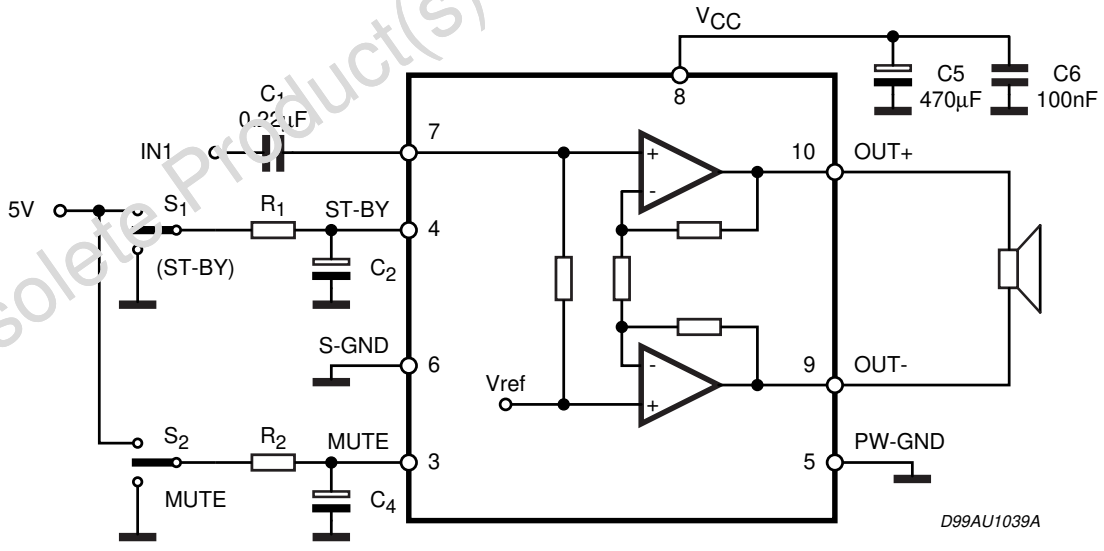
SIP10

ORDERING NUMBER: TDA7266L

DESCRIPTION

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

BLOCK AND APPLICATION DIAGRAM



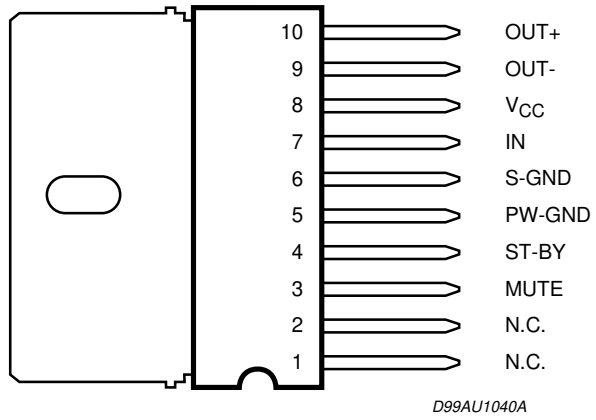
ABSOLUTE MAXIMUM RATINGS

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°C)	10	W
T_{op}	Operating Temperature	0 to 70	°C
T_{stg}, T_j	Storage and Junction Temperature	-40 to +150	°C

THERMAL DATA

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

PIN CONNECTION (Top view)



ELECTRICAL CHARACTERISTICS (V_{CC} = 11V, R_L = 8Ω, f = 1kHz, T_{amb} = 25°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 = 1W		0.05	0.2	%
		P_O = 0.1W to 2W f = 100Hz to 15kHz			1	%
SVR	Supply Voltage Rejection	f = 100Hz VR = 0.5V	40	50		dB
A_{MUTE}	Mute Attenuation		60	80		dB
T_W	Thermal Threshold			150		°C
G_V	Closed Loop Voltage Gain			32		dB
R_i	Input Resistance		31		33	KΩ
VT_{MUTE}	Mute Threshold	for V_{CC} > 6.4V; V_O = -30dB for V_{CC} < 6.4V; V_O = -30dB	2.3 $V_{CC}/2$ -1	2.9 $V_{CC}/2$ -0.75	4.1 $V_{CC}/2$ -0.5	V V

ELECTRICAL CHARACTERISTICS (Continued)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
VT_{ST-BY}	St-by Threshold		0.8	1.3	1.8	V
I_{ST-BY}	ST-BY current V6 = GND				100	µA
e_N	Total Output Noise Voltage	A curve f = 20Hz to 20kHz		150		µV

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 mP) 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 mantain 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 µP 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.

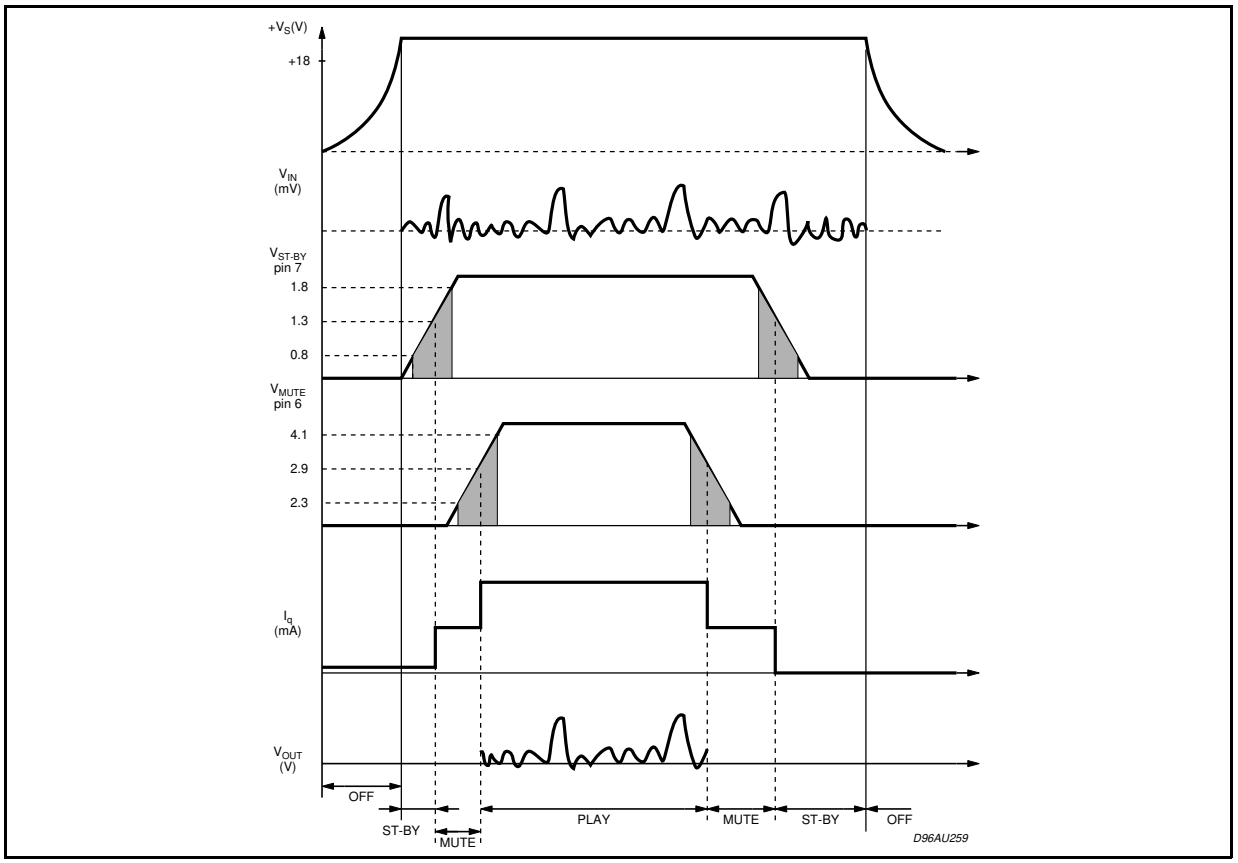
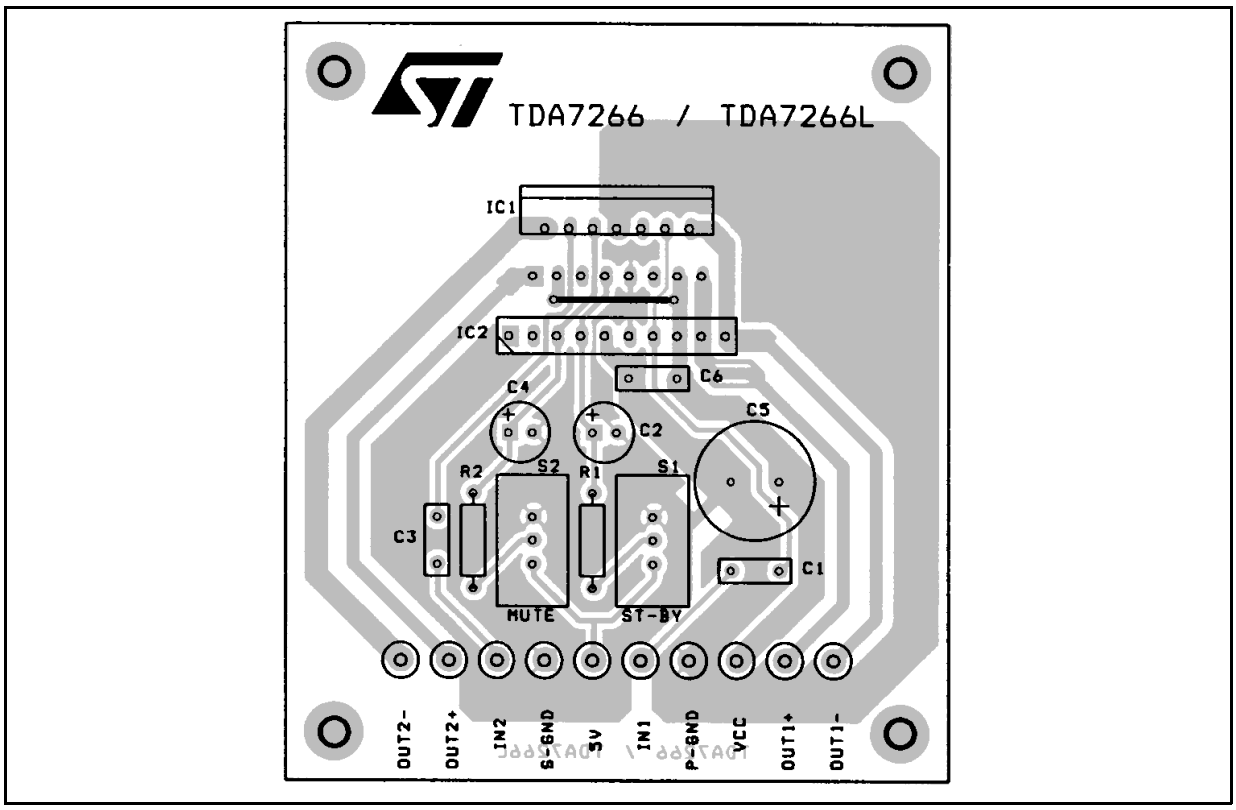


Figure 2: PCB and Component Layout of the Application Diagram



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

Figure 3: Distortion vs Output Power

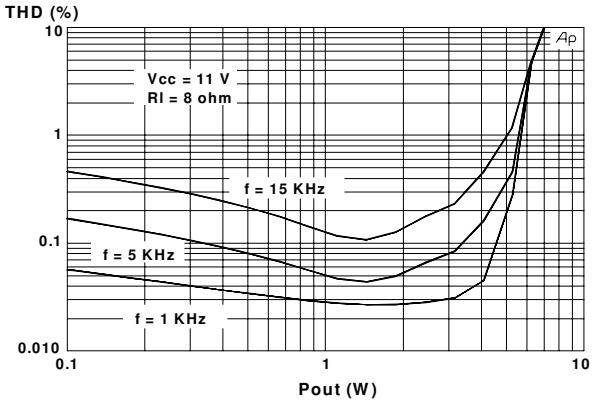


Figure 4: Distortion vs Output Power

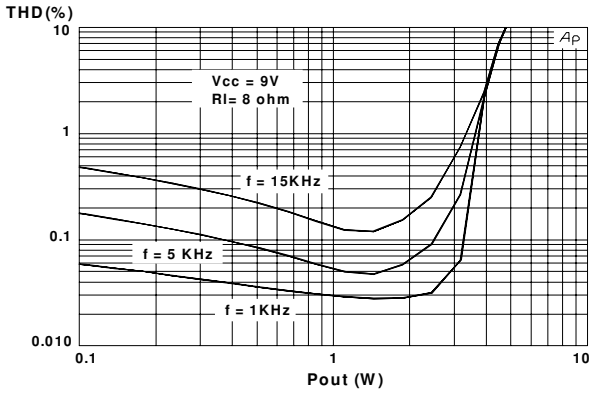


Figure 5: Distortion vs Frequency

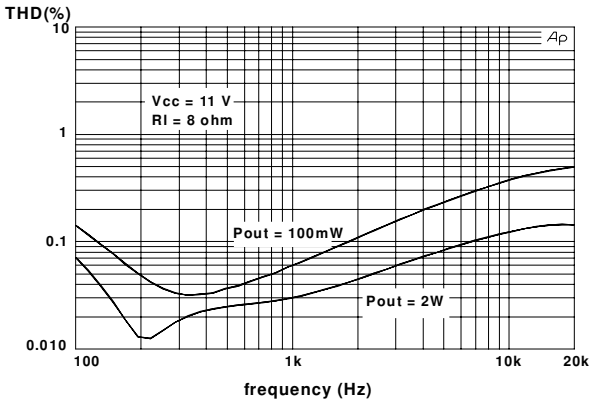


Figure 6: Gain vs Frequency

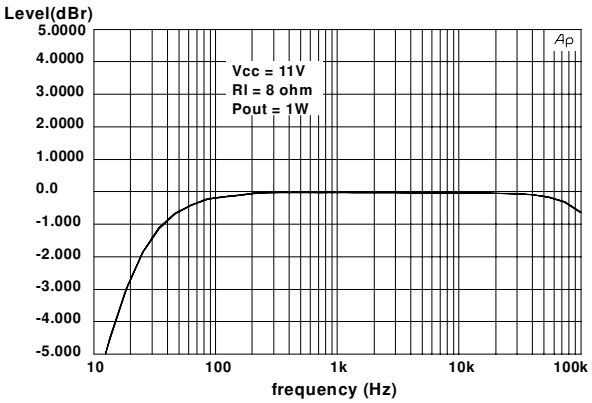


Figure 7: Mute Attenuation vs. V pin.6

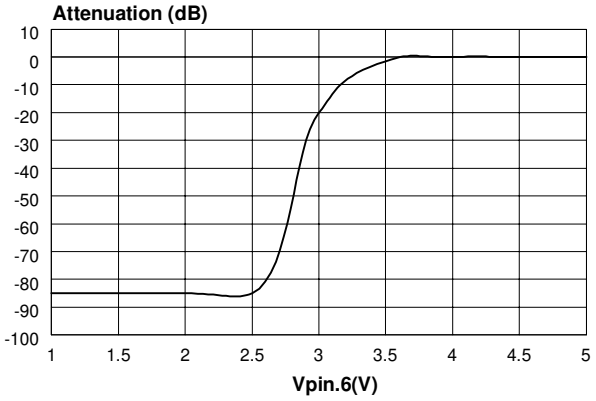


Figure 8: Stand-By Attenuation vs Vpin.7

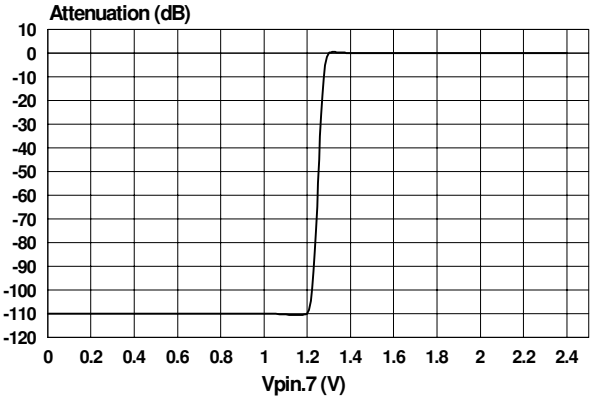
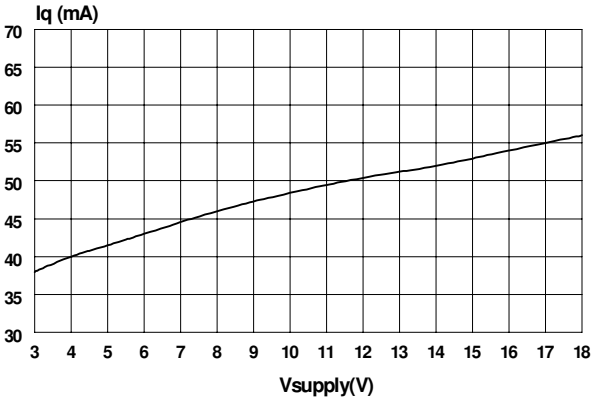
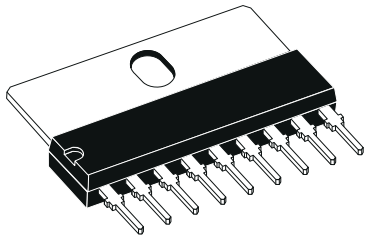


Figure 9: Quiescent Current vs. Supply Voltage



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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