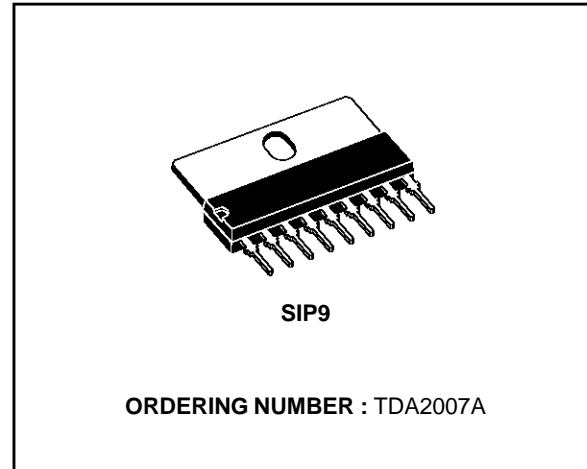


**6 + 6W STEREO AMPLIFIER**

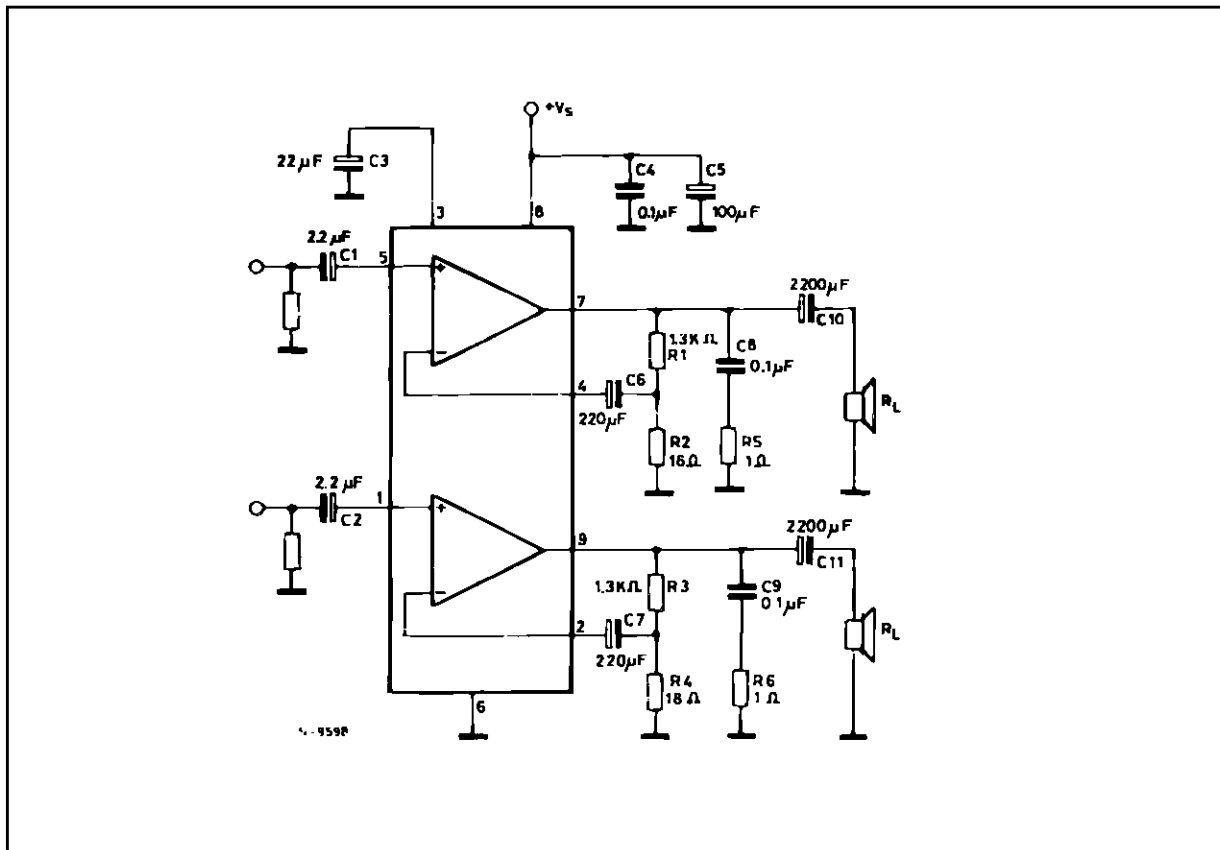
- HIGH OUTPUT POWER
- HIGH CURRENT CAPABILITY
- AC SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

**DESCRIPTION**

The TDA2007A is a class AB dual Audio power amplifier assembled in single in line 9 pins package, specially designed for stereo application in music centers TV receivers and portable radios.

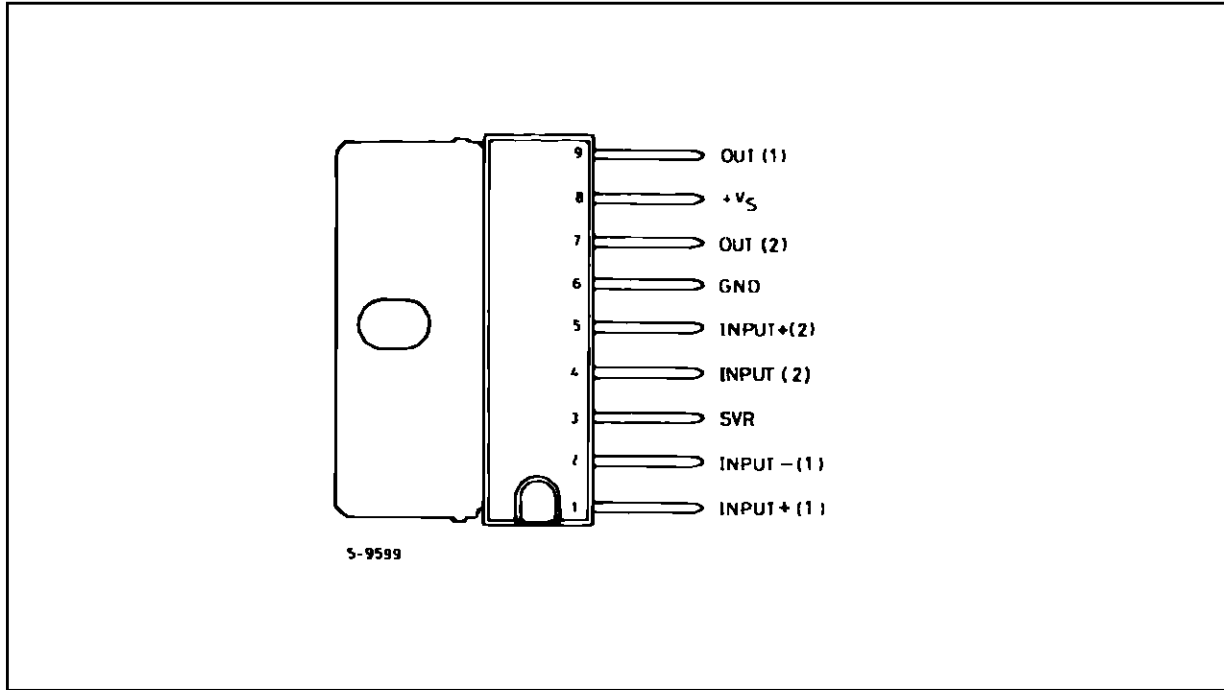


**STEREO TEST CIRCUIT**

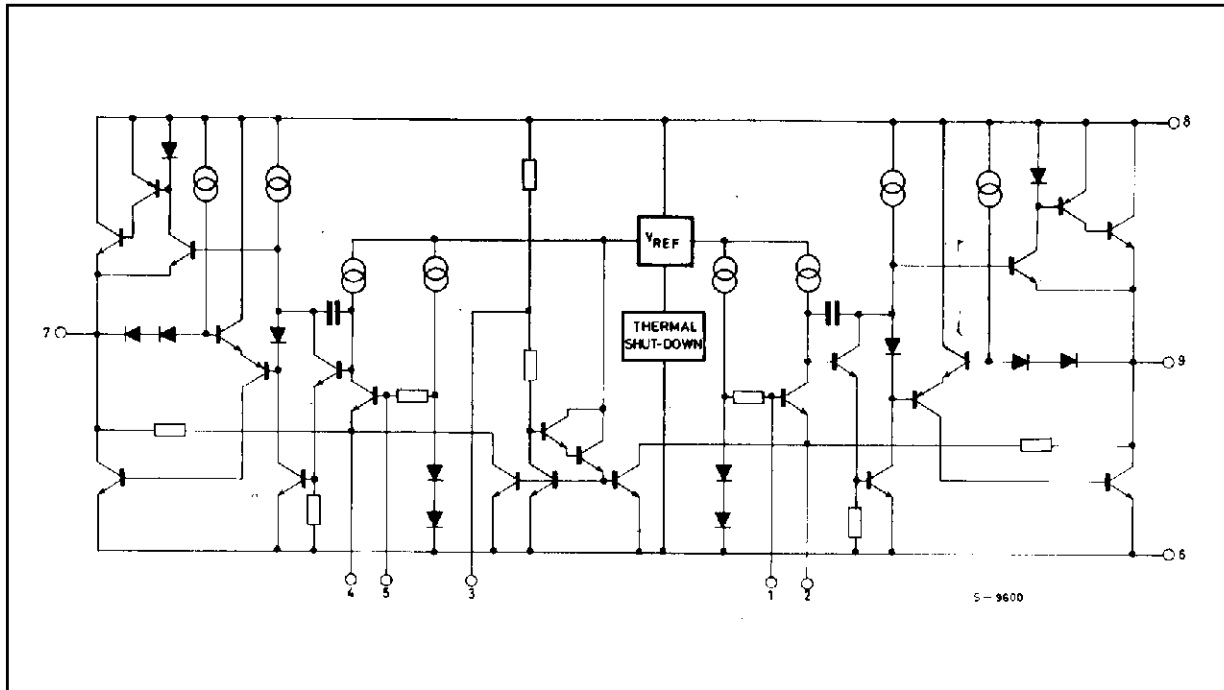


# TDA2007A

## PIN CONNECTION (top view)



## SCHEMATIC DIAGRAM



## THERMAL DATA

Symbol	Parameter	Value	Unit
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## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V <sub>S</sub>	Supply Voltage	28	V
I <sub>O</sub>	Output Peak Current (repetitive f ≥ 20Hz)	3	A
I <sub>O</sub>	Output Peak Current (non repetitive t = 100μs)	3.5	A
P <sub>tot</sub>	Power Dissipation at T <sub>case</sub> = 70°C	10	W
T <sub>stg</sub> , T <sub>j</sub>	Storage and Junction Temperature	-40 to 150	°C

ELECTRICAL CHARACTERISTICS (refer to the stereo application circuit, T<sub>amb</sub> = 25°C, V<sub>S</sub> = 18V, G<sub>V</sub> = 36dB, unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>S</sub>	Supply Voltage		8		26	V
V <sub>O</sub>	Quiescent Output Voltage			8.5		V
I <sub>d</sub>	Total Quiescent Drain Current			50	90	mA
P <sub>O</sub>	Output Power (each channel)	f = 100Hz to 6KHz d = 0.5% V <sub>S</sub> = 18V R <sub>L</sub> = 4Ω V <sub>S</sub> = 22V R <sub>L</sub> = 8Ω	5.5 5.5	6 6		W W
d	Distortion (each channel)	f = 1KHz, V <sub>S</sub> = 18V, R <sub>L</sub> = 4Ω P <sub>O</sub> = 100mW to 3W f = 1KHz, V <sub>S</sub> = 22V, R <sub>L</sub> = 8Ω P <sub>O</sub> = 100mW to 3W		0.1 0.05		% %
CT	Cross Talk (°°)	R <sub>L</sub> = ∞, R <sub>g</sub> = 10KΩ f = 1KHz f = 10KHz	50 40	60 50		dB dB
V <sub>i</sub>	Input Saturation Voltage (rms)		300			mV
R <sub>i</sub>	Input Resistance	f = 1KHz	70	200		KΩ
f <sub>L</sub>	Low Frequency Roll Off (-3dB)	R <sub>L</sub> = 4Ω, C <sub>10</sub> = C <sub>11</sub> = 2200μF		40		Hz
f <sub>H</sub>	Low Frequency Roll Off (-3dB)			80		KHz
G <sub>V</sub>	Voltage Gain (closed loop)	f = 1KHz	35.5	36	36.5	dB
ΔG <sub>V</sub>	Closed Loop Gain Matching			0.5		dB
e <sub>N</sub>	Total Input Noise Voltage	R <sub>g</sub> = 10kΩ (°) R <sub>g</sub> = 10kΩ (°°)		1.5 2.5	8	μV μV
SVR	Supply Voltage Rejection (each channel)	R <sub>g</sub> = 10KΩ f <sub>ripple</sub> = 100Hz, V <sub>ripple</sub> = 0.5V		55		dB
T <sub>j</sub>	Thermal Shut-down Junction Temperature			145		°C

(°) Curve A. (°°) 22Hz to 22KHz.

# TDA2007A

Figure 1 : Stereo Test Circuit ( $G_v = 36 \text{ dB}$ ).

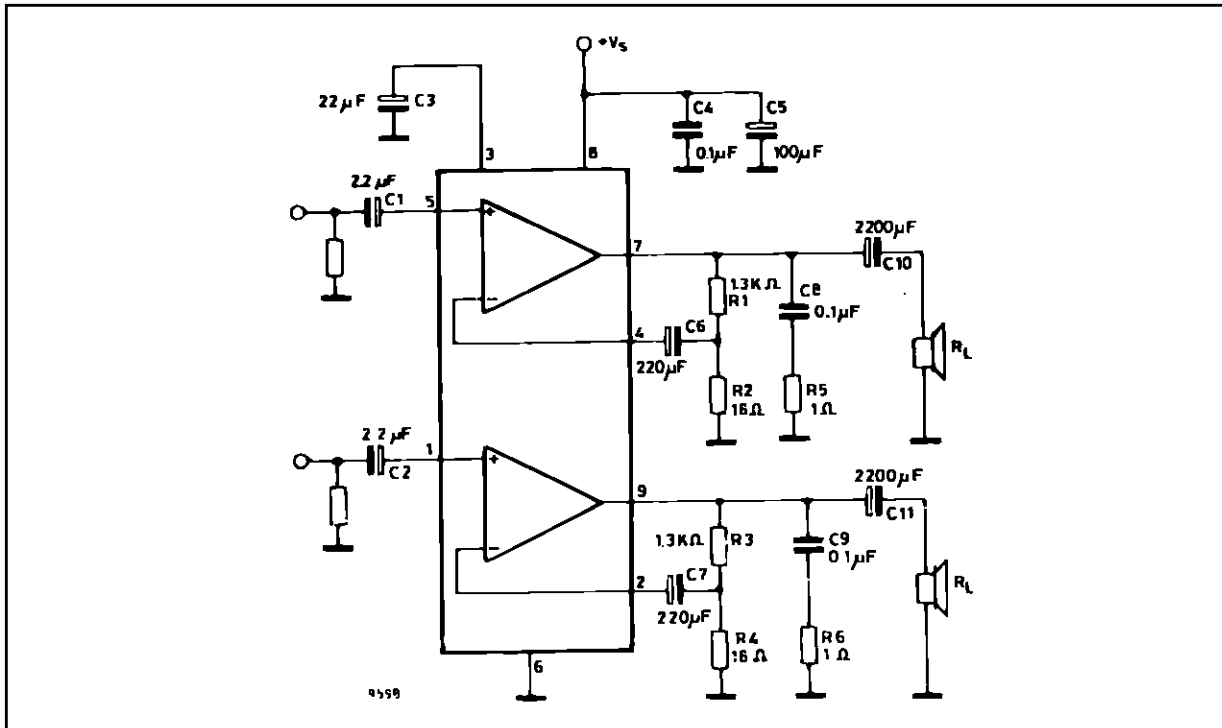
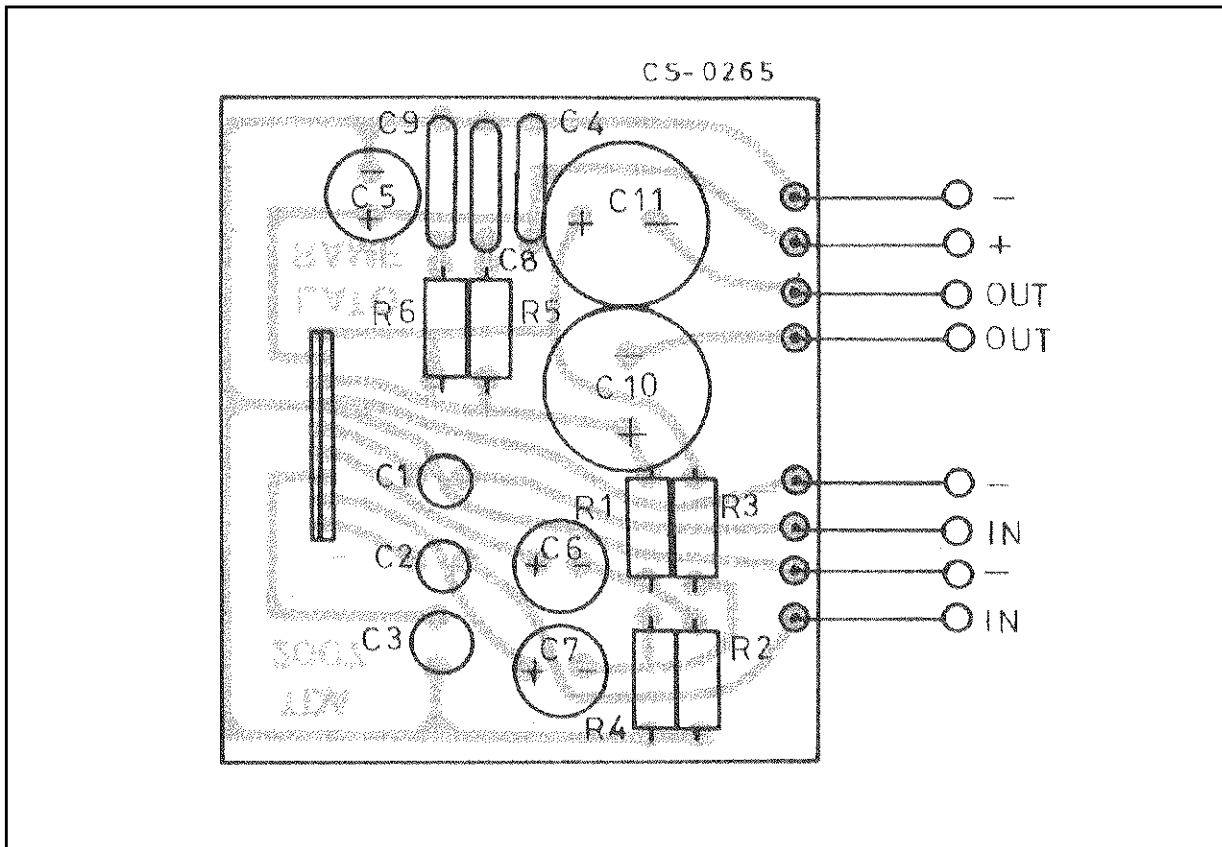


Figure 2 : P.C. Board and Components layout of the Circuit of Fig.1 (1 : 1 scale).



**APPLICATION SUGGESTION**

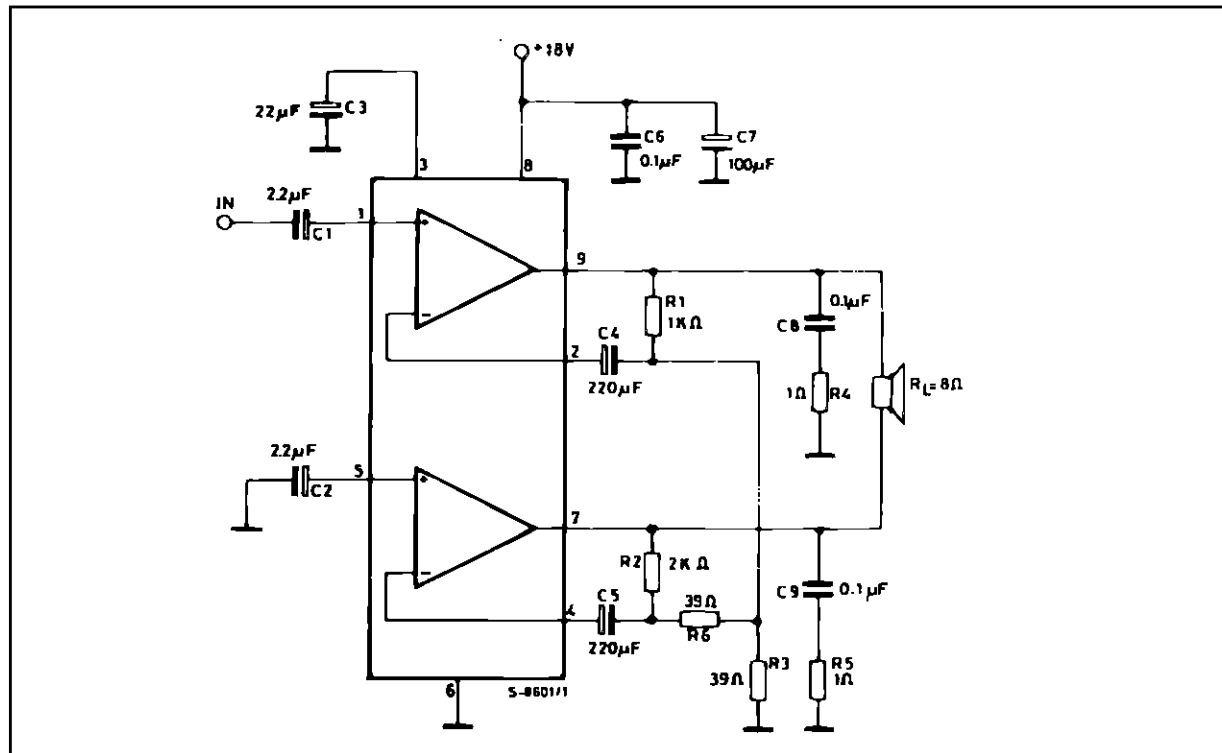
The recommended values of the components are those shown on application circuit of fig.1. Different values can be used ; the following table can help the designer.

Component	Recommended value	Purpose	Larger Than	Smaller Than
R1, R3	1.3K $\Omega$	Close Loop Gain Setting (*)	Increase of Gain	Decrease of Gain
R2 and R4	18 $\Omega$		Decrease of Gain	Increase of gain
R5 and R6	1 $\Omega$	Frequency stability	Danger of Oscillation at High Frequency with Inductive Load	
C1 and C2	2.2 $\mu$ F	Input DC Decoupling	High Turn-on Delay	High Turn-on Pop Higher Low Frequency Cutoff. Increase of Noise
C3	22 $\mu$ F	Ripple Rejection	Better SVR Increase of the Switch-on Time	Degradation of SVR
C6 and C7	220 $\mu$ F	Feedback Input DC Decoupling		
C8 and C9	0.1 $\mu$ F	Frequency Stability		Danger of Oscillation

(\*) The closed loop gain must be higher than 26 dB.

**APPLICATION INFORMATION**

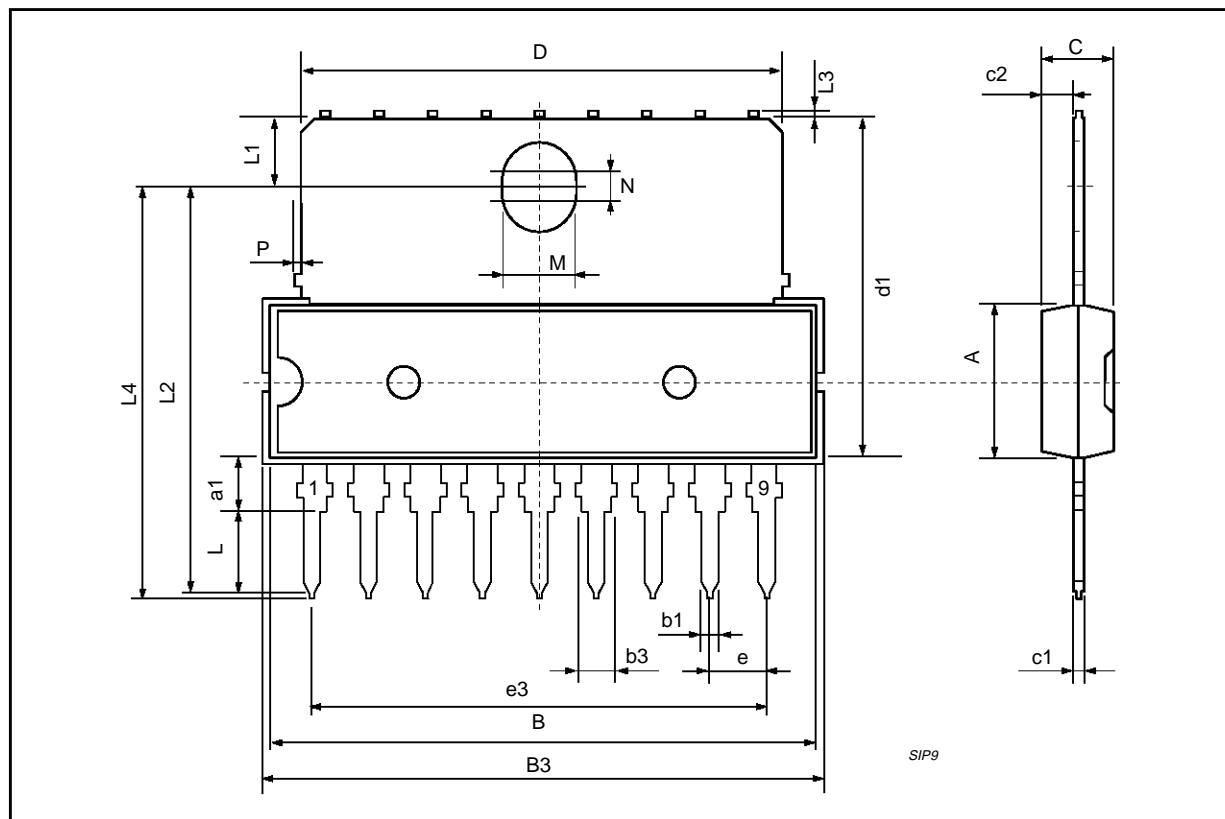
**Figure 3 : 12 W Bridge Amplifier (d = 0.5%, G<sub>V</sub> = 40 dB).**



# TDA2007A

## SIP9 PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			7.1			0.280
a1	2.7		3	0.106		0.118
B			23			0.90
B3			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			21.2			0.835
d1		14.5			0.571	
e		2.54			0.100	
e3		20.32			0.800	
L	3.1			0.122		
L1		3			0.118	
L2		17.6			0.693	
L3			0.25			0.010
L4	17.4		17.85	0.685		0.702
M		3.2			0.126	
N		1			0.039	
P			0.15			0.006



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