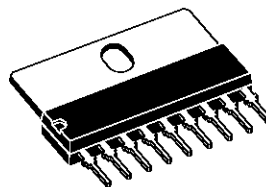


6 + 6W STEREO AMPLIFIER

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

DESCRIPTION

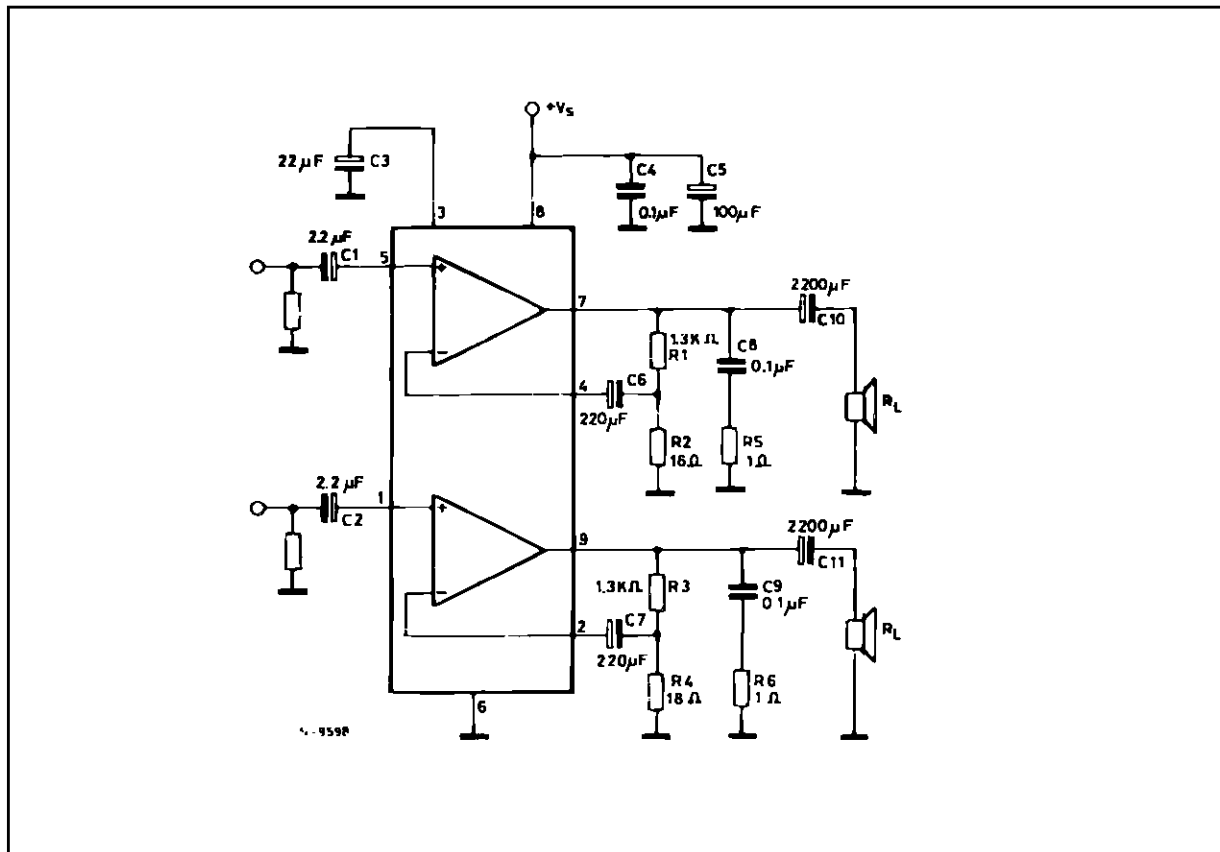
The TDA2007A is a class AB dual Audio power amplifier assembled in single in line 9 pins package, specially designed for stereo application in music centers TV receivers and portable radios.



SIP9

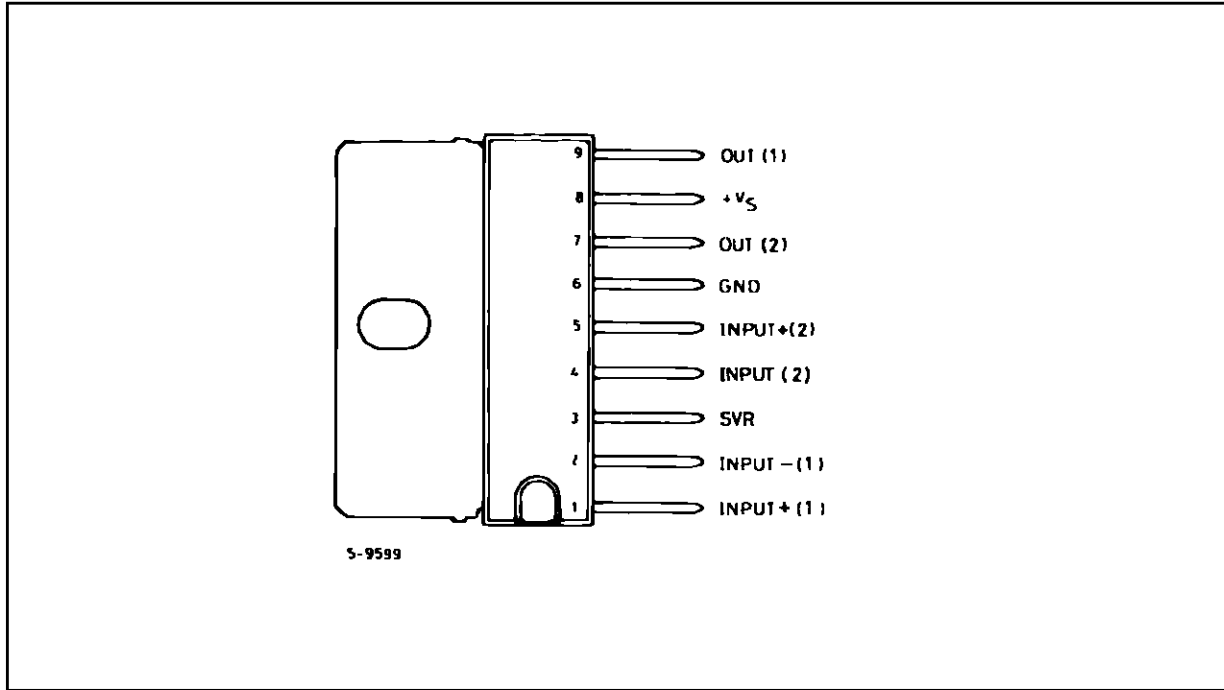
ORDERING NUMBER : TDA2007A

STEREO TEST CIRCUIT

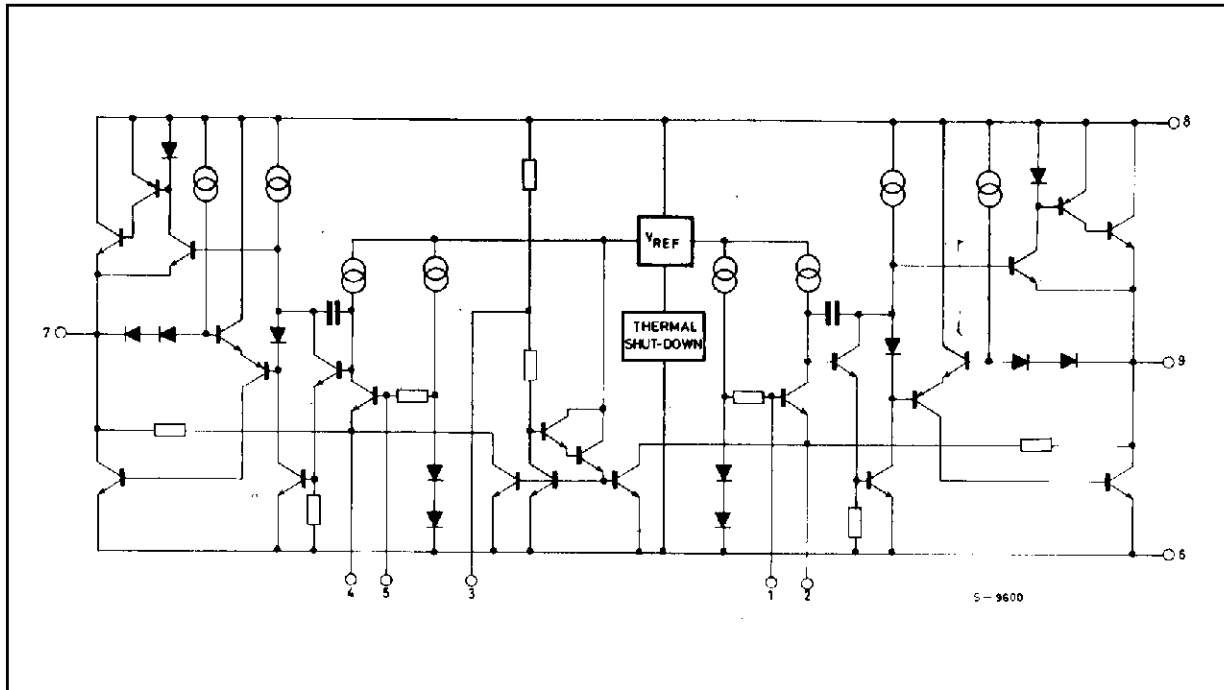


TDA2007A

PIN CONNECTION (top view)



SCHEMATIC DIAGRAM



THERMAL DATA

Symbol	Parameter	Value	Unit
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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _S	Supply Voltage	28	V
I _O	Output Peak Current (repetitive f ≥ 20Hz)	3	A
I _O	Output Peak Current (non repetitive t = 100μs)	3.5	A
P _{tot}	Power Dissipation at T _{case} = 70°C	10	W
T _{stg} , T _j	Storage and Junction Temperature	-40 to 150	°C

ELECTRICAL CHARACTERISTICS (refer to the stereo application circuit, T_{amb} = 25°C, V_S = 18V, G_V = 36dB, unless otherwise specified)

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

(°) Curve A. (°°) 22Hz to 22KHz.

TDA2007A

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

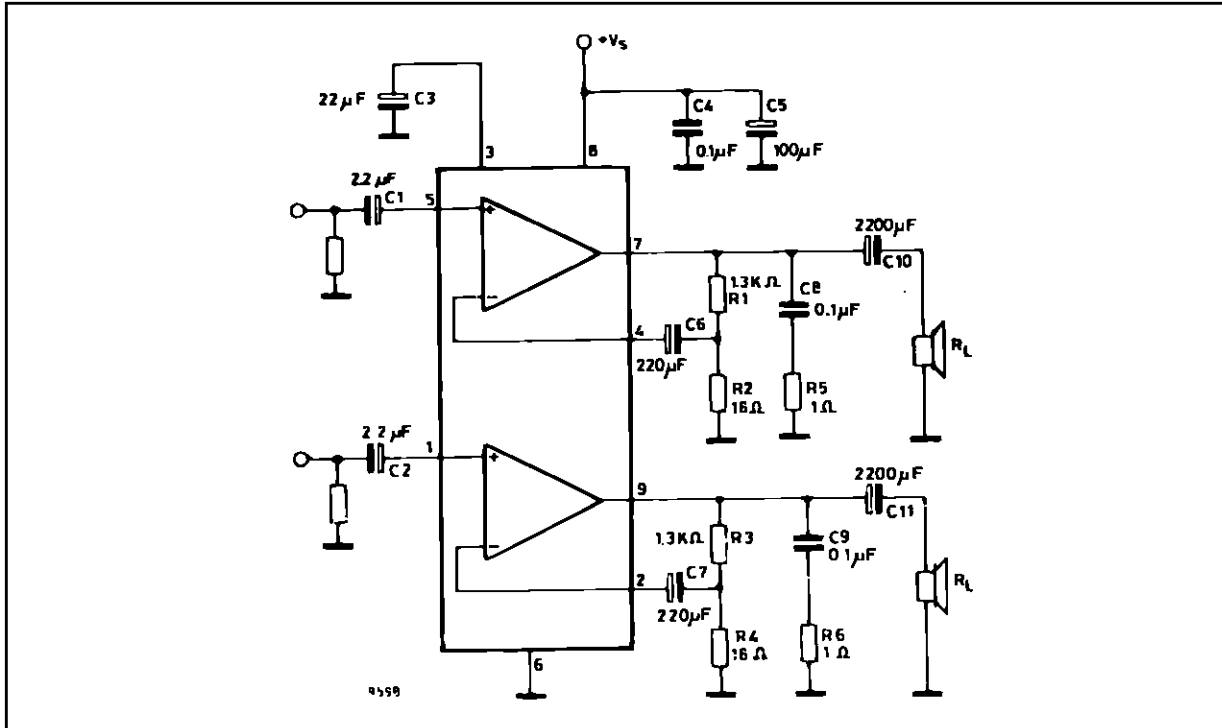
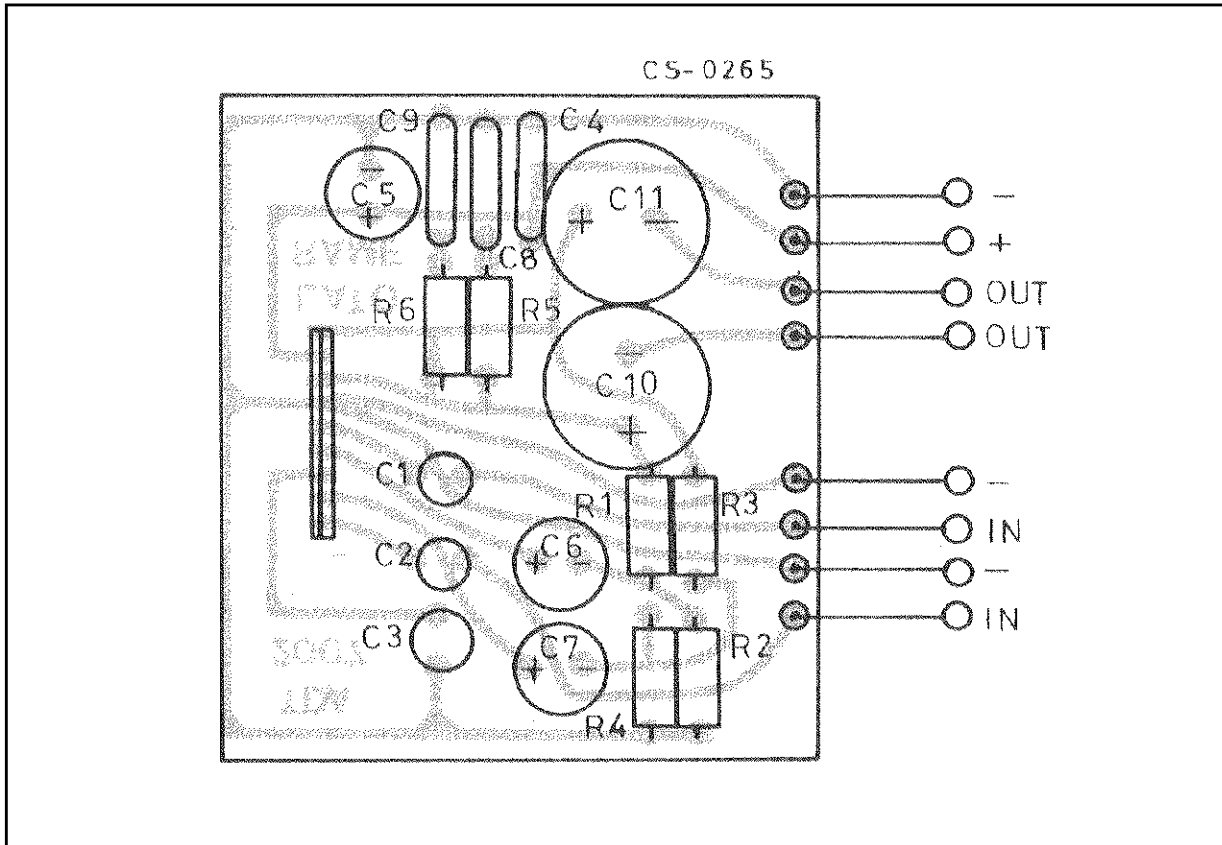


Figure 2 : P.C. Board and Components layout of the Circuit of Fig.1 (1 : 1 scale).



APPLICATION SUGGESTION

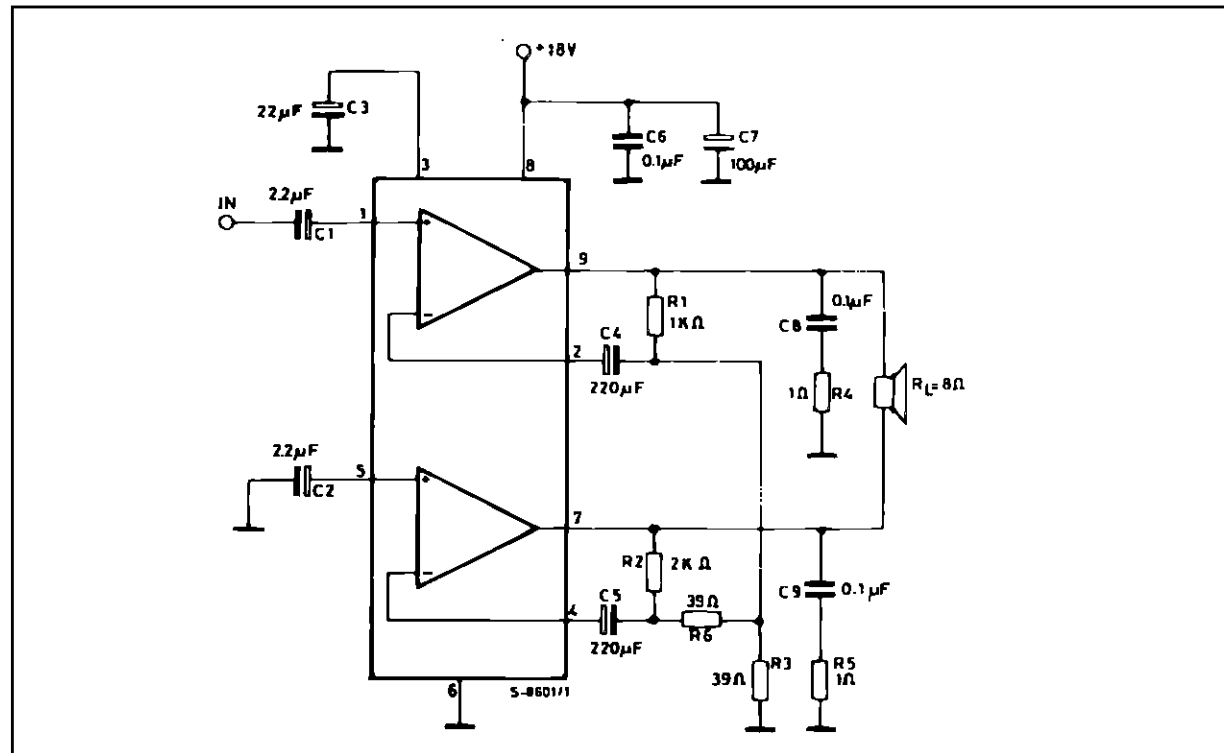
The recommended values of the components are those shown on application circuit of fig.1. Different values can be used ; the following table can help the designer.

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

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

APPLICATION INFORMATION

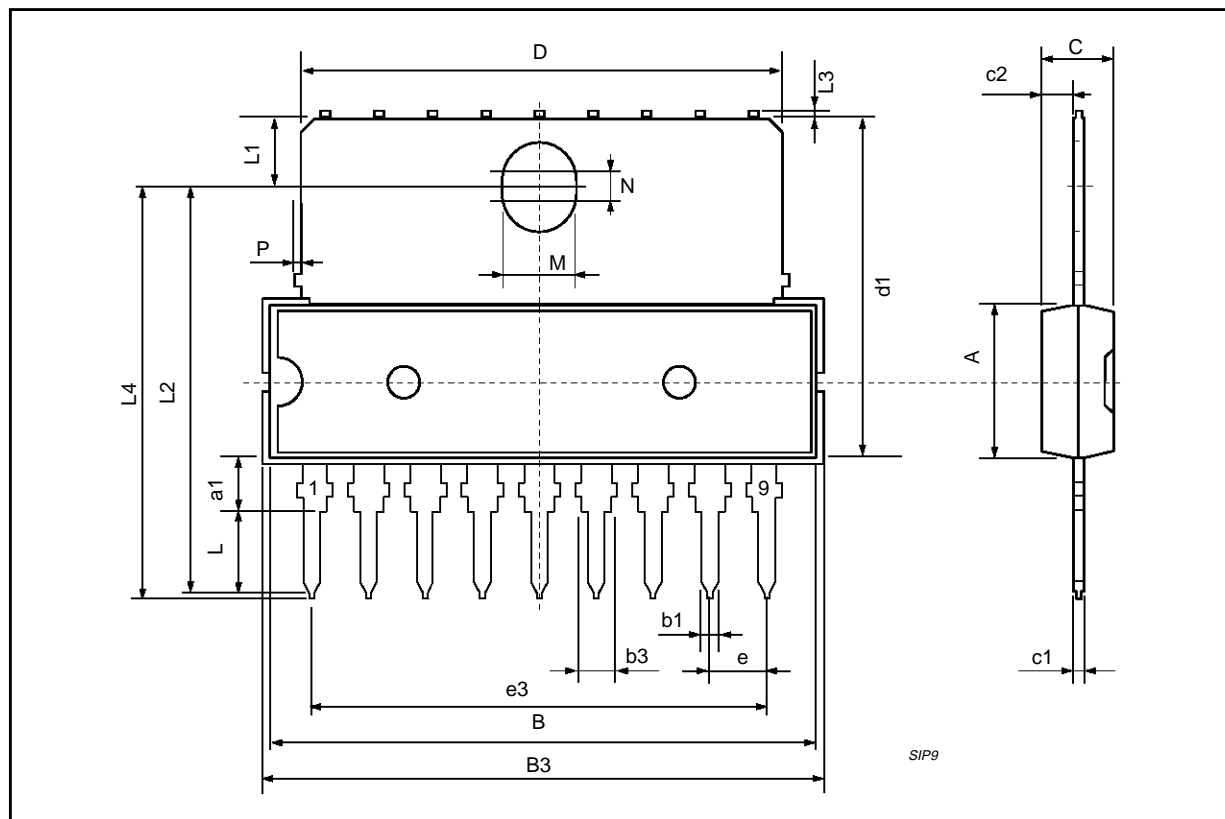
Figure 3 : 12 W Bridge Amplifier (d = 0.5%, G_V = 40 dB).



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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