LINEAR INTEGRATED CIRCUIT

TDA 1904

4W AUDIO AMPLIFIER

The TDA 1904 is a monolithic integrated circuit in POWERDIP package intended for use as low-frequency power amplifier in a wide range of applications in portable radio and TV sets.
Its main features are:

- High output current capability (up to 2A)
- Protection against chip overtemperature
- Low noise
- High supply voltage rejection
- Supply voltage range: 4V to 20V

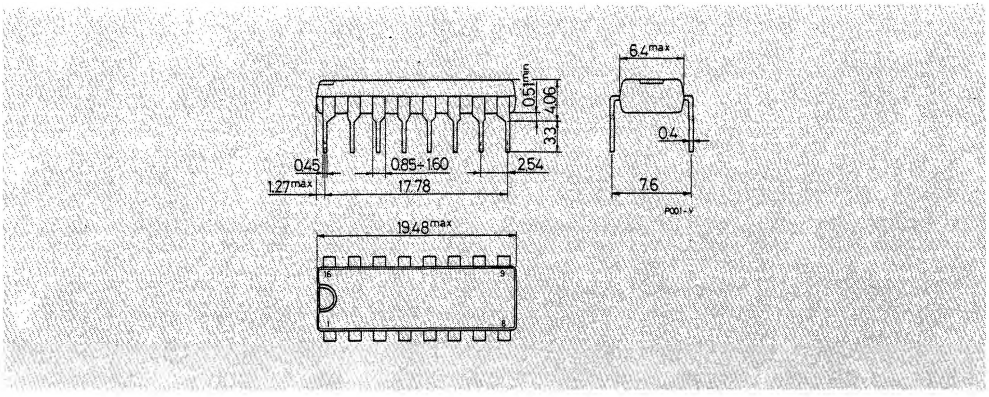
ABSOLUTE MAXIMUM RATINGS

V_s	Supply voltage	20	V
I_o	Peak output current (non repetitive)	2.5	A
I_o	Peak output current (repetitive)	2	A
P_{tot}	Total power dissipation at $T_{amb} = 80°C$	1	W
	$T_{case} = 60°C$	6	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	°C

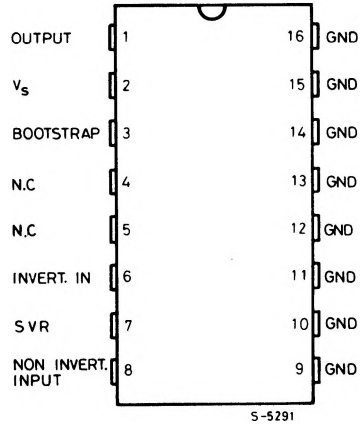
ORDERING NUMBER: TDA 1904

MECHANICAL DATA

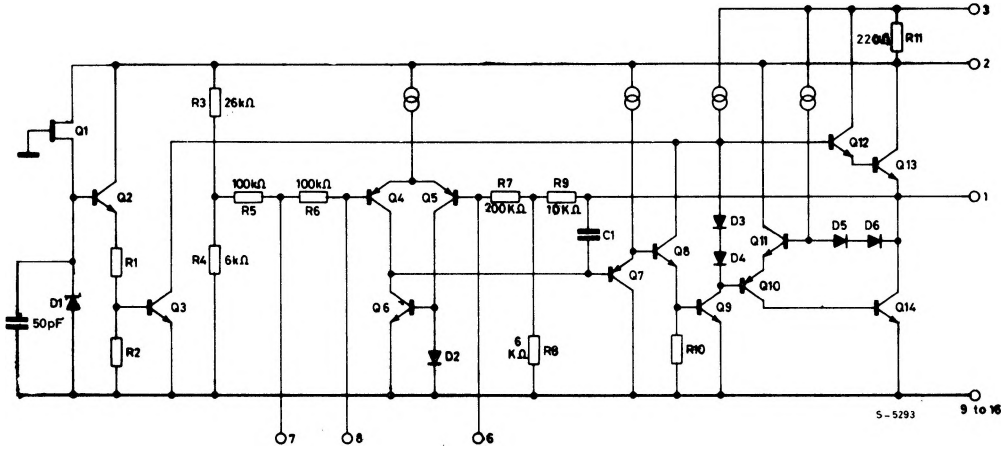
Dimensions in mm



CONNECTION DIAGRAM
(top view)



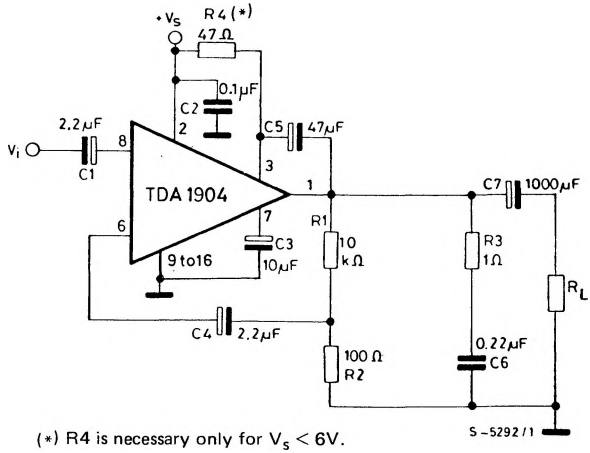
SCHEMATIC DIAGRAM



THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction-pins	max	15	°C/W
$R_{th\ j\text{-}amb}$	Thermal resistance junction-ambient	max	70	°C/W

TEST CIRCUIT



(*) R4 is necessary only for $V_s < 6V$.

ELECTRICAL CHARACTERISTICS (refer to the test circuit, $G_v = 40$ dB, $R_L = 4\Omega$, $T_{amb} = 25°C$ unless otherwise specified)

Parameter		Test conditions	Min.	Typ.	Max.	Unit
V_s	Supply voltage		4		20	V
I_d	Quiescent drain current	$V_s = 9V$ $V_s = 14V$		16 19		mA mA
P_o	Output power	d = 10% f = 1 KHz $V_s = 9V$ $V_s = 12V$ $V_s = 6V$		 2 3.5 0.8		 W W W
d	Distortion	$V_s = 9V$ f = 1 KHz $P_o = 50$ mW to 1.2W $V_s = 14V$ $P_o = 50$ mW to 2W		 0.1 0.1		 % %
R_i	Input resistance (pin 8)			150		KΩ
B	Frequency response			40 to 40 000		Hz
G_v	Voltage gain (open loop)			80		dB
G_v	Voltage gain (closed loop)			40		dB
e_N	Total input noise voltage	$R_g = 10$ KΩ; B= 22Hz to 22KHz		3		μV
		$R_g = 10$ KΩ; B = curve A		2	4	
η	Efficiency	$V_s = 9V$ $P_o = 2W$ $V_s = 12V$ $P_o = 3.5W$		70 65		%
SVR	Supply voltage rejection	$V_s = 12V$ $R_g = 10$ KΩ $f_{ripple} = 100$ Hz		50		dB

Fig. 1 - Application circuit

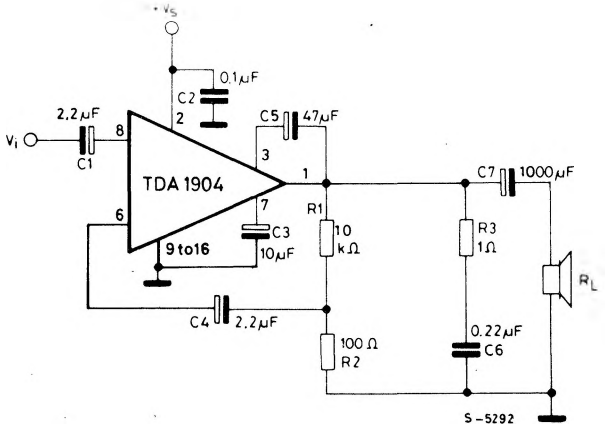


Fig. 2 - P.C. board and components layout of fig. 1 (1:1 scale)