8W CAR RADIO AUDIO AMPLIFIER

NOT FOR NEW DESIGN

The TDA2002 is a class B audio power amplifier in Pentawatt® package designed for driving low impedance loads (down to 1.6Ω).

The device provides a high output current capability (up to 3.5A), very low harmonic and cross-over distortion.

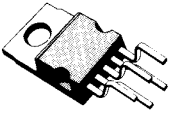
In addition, the device offers the following features:

- very low number of external components
- assembly ease, due to Pentawatt® power package with no electrical insulation requirement
- space and cost saving
- high reliability
- flexibility in use

Protection against:

a) short circuit;
b) thermal over range;
c) fortuitous open ground;
d) load dump voltage surge.

See TDA2003 for more complete information.



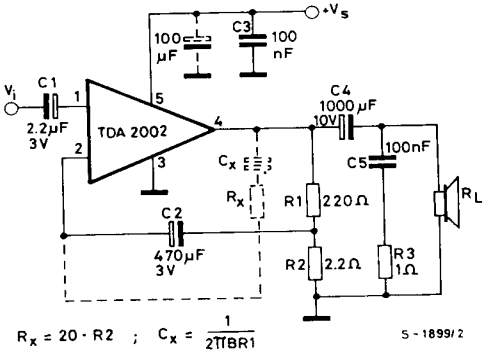
Pentawatt

ORDER CODE: TDA2002H (Hor. Pentawatt)
TDA2002V (Ver. Pentawatt)

ABSOLUTE MAXIMUM RATINGS

V_s	Peak supply voltage (50 ms)	40	V
V_s	DC supply voltage	28	V
V_s	Operating supply voltage	18	V
I_o	Output peak current (repetitive)	3.5	A
I_o	Output peak current (non repetitive)	4.5	A
P_{tot}	Power dissipation at T_{case} = 90°C	15	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	°C

Fig. 1 - Application circuit



ELECTRICAL CHARACTERISTICS (V_s= 14.4V, T_{amb}= 25°C unless otherwise specified)

Parameter		Test conditions	Min.	Typ.	Max.	Unit
DC CHARACTERISTICS (Refer to DC test circuit)						
V_s	Supply voltage		8		18	V
V_o	Quiescent output voltage (pin 4)		6.1	6.9	7.7	V
I_d	Quiescent drain current (pin 5)			45	80	mA
AC CHARACTERISTICS (Refer to AC test circuit, G_v= 40 dB)						
P_o	Output power	d = 10% f = 1 kHz R_L= 4Ω R_L= 2Ω V_s = 16V R_L= 4Ω R_L= 2Ω	4.8 7	5.2 8 6.5 10		W W W W
$V_{i(rms)}$	Input saturation voltage		300			mV
V_i	Input sensitivity	f = 1 kHz P_o = 0.5W R_L= 4Ω P_o = 0.5W R_L= 2Ω P_o = 5.2W R_L= 4Ω P_o = 8W R_L= 2Ω		15 11 55 50		mV mV mV mV
B	Frequency response (-3 dB)	R_L= 4Ω P_o= 1W	40 to 15 000			Hz
d	Distortion	f = 1 kHz P_o = 0.05 to 3.5W R_L= 4Ω P_o = 0.05 to 5W R_L= 2Ω		0.2 0.2		% %
R_i	Input resistance (pin 1)	f = 1 kHz	70	150		kΩ
G_V	Voltage gain (open loop)	R_L= 4Ω f = 1 kHz		80		dB
G_V	Voltage gain (closed loop)	R_L= 4Ω f = 1 kHz	39.3	40	40.5	dB
e_N	Input noise voltage (*)			4		μV
i_N	Input noise current (*)			60		pA
η	Efficiency	f = 1 kHz P_o = 5.2W R_L= 4Ω P_o = 8W R_L= 2Ω		68 58		% %
SVR	Supply voltage rejection	R_L= 4Ω R_g= 10 kΩ f_{ripple}= 100 Hz	30	35		dB

(*) Filter with noise bandwidth: 22 Hz to 22 KHz.